TURN PRO SOONER

MILWAUKEE AREA Technical College
2014-15 Catalog
Start on MATC’s Career Pathways to Turn Pro Sooner

Reaching education and career goals involves careful planning. It also requires the ability to effectively respond to new opportunities and life events encountered along the way. With more than 170 career programs, Milwaukee Area Technical College has clear pathways to a rewarding future that will begin working for you, both now and in the years to come.

Through MATC’s career-centered programs, our graduates become technical professionals in two years or less of full-time study. They “turn pro” sooner by quickly entering their profession with the skills employers demand. Students have options to learn occupational skills through targeted classes, a short-term certificate program, a technical diploma program (typically one year of full-time study) or an associate degree (typically two years of full-time study). Because of important skills gained along the way, many of our students enter the workforce and return to MATC to complete a program for additional career opportunities. In many fields, earned certificate program credits count toward a technical diploma, and many earned technical diploma program credits count toward an associate degree. This is how students progress on the pathway model, gaining skills while advancing in MATC academic programs.

As the Midwest’s leading two-year, community-based technical college, MATC partners with area businesses, ensuring that students gain the skills needed to begin and grow in satisfying careers. Our labs and classrooms support hands-on training with the latest technologies, and our graduates are in demand. The average annual earnings just six months after graduation for MATC’s technical diploma graduates was $30,150; for associate degree graduates, $37,200, according to the latest Graduate Career Report published in 2013.

If your goal is a bachelor’s degree or beyond, MATC offers hundreds of four-year college transfer options. MATC is an affordable choice for attaining a baccalaureate degree, since you can start at MATC and transfer many associate degree credits and programs to Wisconsin public and private four-year colleges, including the UW System schools.

To help you succeed, MATC offers:

- Flexible day, evening, weekend and online classes
- Accelerated programs geared to working adults
- Bilingual classes and programs
- Comprehensive student services to help you stay on track to graduate
- Pre-College programs where students earn a GED, HSED or high school diploma, and prepare for college-level programs

Like a coach’s playbook filled with hundreds of strategies to reach a goal, this catalog presents many options to plan your career pathway. I also invite you to visit matc.edu for the latest information about our programs and helpful student services. Better still, visit one or more of our full-service campuses and see firsthand how MATC prepares students to turn pro sooner.

Michael L. Burke, Ph.D.
President
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**MISSION**

As a public, two-year comprehensive technical college, MATC offers exceptional educational and training opportunities and services to our diverse metropolitan area by engaging with partners to advance the quality of life for our students and community.

**VISION**

MATC is the premier comprehensive technical college that provides excellence in education to enrich, empower and transform lives.

**VALUES**

Student Success  
Accountability  
Collaboration  
Customer Focus  
Diversity  
Excellence  
Innovation  
Integrity

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MATC is accredited by the Higher Learning Commission,  
230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1411; 800-621-7440.  
This catalog was prepared according to information current as of January 2014.  
All information is subject to change.
ASSOCIATE IN ARTS (A.A.), ASSOCIATE IN SCIENCE (A.S.)
and ASSOCIATE IN APPLIED SCIENCE DEGREES (A.A.S.)

| A | Accounting (10-101-1), B |
|   | Administrative Professional (10-106-6), B |
|   | Administrative Professional — Accelerated (10-106-6.AA), B |
|   | Air Conditioning and Refrigeration Technology (10-601-1), T |
|   | Anesthesia Technology (10-541-1), H |
|   | Animation (10-207-1), M |
|   | Architectural Technology (10-614-1), T |
|   | Associate in Arts — Liberal Arts and Sciences Transfer (20-800-1), L |
|   | Associate in Arts — Liberal Arts and Sciences Transfer — Online Accelerated (20-800-1.AA), L |
|   | Associate in Arts: Educational Foundations Track (20-800-1.CU), L |
|   | Associate in Arts — Liberal Arts and Sciences Transfer (10-602-1), T |
|   | Associate in Science: Biotechnology Track (20-800-2.B), L |
|   | Associate in Science: Chemical Technology Track (20-800-2.C), L |
|   | Audio Production (10-701-4), M |
|   | Automotive Technology — Comprehensive (10-602-6), T |
| B | Baking and Pastry Arts (10-314-1), B |
|   | Banking and Financial Services (10-114-3), B |
|   | Biomedical Electronics Technology (10-605-6), T |
|   | Business Management (10-102-3), B |
| C | Cardiovascular Technology (10-521-1), H |
|   | Chemical Technician (10-603-1), L |
|   | Civil Engineering Technology (10-607-1), T |
|   | Clinical Laboratory Technician: See Medical Laboratory Technician |
|   | Computer Electronics Technology (10-605-3), T |
|   | Computer Simulation and Gaming (10-153-1), M |
|   | Creative Advertising Strategist (10-201-4), M |
|   | Criminal Justice — Law Enforcement (10-504-1), T |
|   | Culinary Arts (10-316-1), B |
|   | Culinary Management (10-317-1), B |
| D | Dental Hygiene (10-508-1), H |
|   | Dietetic Technician (10-313-1), H |
| E | Early Childhood Education (10-307-1), L |
|   | eBusiness Technology Analyst (10-135-3), B |
|   | (formerly eBusiness Technology Specialist) |
|   | Electronic Engineering Technology (10-605-7), T |
|   | Environmental Health and Water Quality Technology (10-506-1), B |
|   | eProduction (10-701-3), M |
| F | Fashion/Retail Marketing (10-104-4), B |
|   | Fire Protection Technician (10-503-2), T |
|   | Food Science Technology (10-623-4), B |
|   | Funeral Service (10-528-1), H |
| G | Graphic Design (10-201-1), M |
| H | Health Information Technology (10-530-1), H |
|   | Healthcare Services Management (10-530-3), H |
|   | Hotel/Hospitality Management (10-109-1), B |
|   | Human Resources (10-116-1), B |
|   | Human Service Associate (10-520-3), L |
| I | Individualized Technical Studies (10-825-1), T |
|   | Interactive Media (10-206-3), M |
| J | Interior Design (10-304-1), T |
|   | Interpreter Technician (10-533-2), L |
|   | IT Computer Support Specialist (10-154-3), B |
|   | IT Information Systems Security Specialist (10-150-4), B |
|   | IT Information Systems Security Specialist — Accelerated (10-150-4.AA), B |
|   | IT Mobile Applications Developer (10-152-8), B |
|   | IT Network Specialist (10-150-2), B |
|   | IT Network Specialist — Accelerated (10-150-2.AA), B |
| L | Landscape Horticulture (10-001-4), T |
|   | Legal Administrative Professional — Accelerated (10-106-3.AA), B |
| M | Marketing Management (10-104-3), B |
|   | Marketing Management — Online Accelerated (10-104-3.AA), B |
|   | Mechanical Design Technology (10-606-1), T |
|   | Medical Administrative Specialist (10-106-4), B |
|   | Medical Laboratory Technician (10-513-1), H |
|   | (formerly Clinical Laboratory Technician) |
|   | Meeting and Event Management (10-109-6), B |
|   | Mobile Designer (10-206-6), M |
|   | Music Occupations (10-805-1), M |
| O | Occupational Therapy Assistant (10-514-1), H |
| P | Paralegal (10-110-1), B |
|   | Photography (10-203-1), M |
|   | Physical Therapist Assistant (10-524-1), H |
|   | Practical Nursing LPN-RN Educational Progression (10-543-10), H |
| Q | Quality Engineering Technology (10-623-9), T |
| R | Radiography (10-526-1), H |
|   | Real Estate (10-194-1), B |
|   | Registered Nursing (10-543-1), H |
|   | Respiratory Therapist (10-515-1), H |
| S | Supervisory Management — Accelerated (10-196-1.AA), B |
|   | Supply Chain Management (10-182-1), B |
|   | Surgical Technology (10-512-1), H |
|   | Sustainable Facilities Operations (10-481-2), T |
| T | Technical Studies: Apprentice (10-499-5), T |
|   | Television and Video Production (10-701-1), M |
| W | Welding Technology (10-621-1), T |

TECHNICAL DIPLOMAS

| A | Appliance Technician (31-445-1), T |
|   | Architectural Woodworking/Cabinetmaking (31-409-1), T |
|   | Auto Collision Repair and Finish Technician (31-405-1), T |
|   | Automotive Maintenance Technician (31-404-3), T |
|   | Aviation Technician — Airframe (31-402-2), T |
|   | Aviation Technician — Powerplant (31-402-3), T |
| B | Baking Production (31-314-2), B |
|   | Barber (31-502-5), B |
|   | Bilingual Office Assistant (31-106-6), B |
|   | Bricklaying and Masonry (31-408-1), T |
|   | Business Management (30-102-3), B |
| C | Carpentry (31-410-1), T |
|   | Computer Numerical Control (CNC) Machine Operator/Programmer (31-444-1), T |
|   | Cosmetology (31-502-1), B |
|   | Culinary Assistant (31-316-1), B |

For more information: matc.edu or 414-297-MATC.
For more information: matc.edu or 414-297-MATC.
Your Best Resource for Career and Personal Success
MATC has a total enrollment of approximately 43,000 students annually. The college opened in 1912 and has a rich history of preparing students for a wide range of careers.

We're committed to your success
MATC's student services help you reach academic and career goals, and include bilingual services and programs, tutoring, career counseling, academic advising, financial aid, scholarships and grants.

Choose from 170 programs
MATC has six academic schools. Here is an overview:

• **School of Business** – includes culinary arts, entrepreneurship, information technology, marketing, food science technology and cosmetology
• **School of Health Sciences** – includes programs in dental hygiene, registered nursing, pharmacy technician, and the region's only funeral service program
• **School of Liberal Arts and Sciences** – Students can earn the first two years of a bachelor's degree at MATC and transfer to four-year colleges and universities
• **School of Media and Creative Arts** – Prepare for innovative careers such as animation, computer simulation and gaming, photography, and television and video production
• **School of Technology and Applied Sciences** – Hands-on learning is prevalent in programs such as electronic engineering, sustainable facilities operation, horticulture, construction and automotive technology
• **School of Pre-College Education** – offers GED and HSED, English as a Second Language and Adult High School programs

MATC FACTS
- Four full-service campuses – Downtown Milwaukee, Mequon, Oak Creek and West Allis
- Convenient class times including evenings and weekends
- Hundreds of online classes make it easier to fit classes into your schedule; some degree, diploma and certificate programs can be completed entirely online
- Accelerated programs make it possible for students to complete an associate degree by attending evening classes year-round
- Four-year college transfer agreements – more than 400 – include UW System universities, Historically Black Colleges and Universities nationwide, and most local private universities
- Scholarships are available to students through MATC Foundation Inc., and it’s easy to apply online at matc.academicworks.com
- Real-world technology – MATC students gain hands-on working knowledge of the new technologies used in industry
- Green and sustainable – MATC continues to install the latest green technologies to reduce our carbon footprint with the goal of net zero by 2030. Students learn about sustainable operations through on-campus wind turbines, solar photovoltaic (PV) systems, a solar thermal energy system and geothermal heating and cooling system.

THE OFFICE OF STUDENT LIFE
Students enjoy a complete college experience at MATC. Among the activities:
- More than 50 student organizations
- Student government
- Cultural and student development programs
- Men's and women's varsity athletic teams
- An award-winning student newspaper (MATC Times)
- Literary magazine (The Phoenix)

The Office of Student Life is dedicated to serving you in all nonacademic areas of student life. The office staff can assist you with a variety of needs: educational, recreational and cultural programming; honor recognition; problem-solving; grievances; legal rights; housing information; guidance; student organizations; and student advocacy and student development.

Student Athletic Teams – The Stormers
MATC features the following men's and women's varsity athletic teams:
- Baseball
- Basketball (men and women)
- Soccer (men and women)
- Softball
- Volleyball (women)

MATC Stormers teams have won numerous state championships, with athletes earning state and regional honors. MATC sports teams are members of the National Junior College Athletic Association and the North Central Community College Conference. Stormers athletics help you grow as a leader outside the classroom. For more information about athletic opportunities at MATC, visit matcstormers.com or call 414-297-7872.
Student Organizations
With more than 50 student organizations to choose from, you will find a group that matches your interests. Academic, professional, service, cultural and special-interest organizations are available. Information about registered student organizations, or how to start a new one, is available from the Office of Student Life at each MATC campus. For a complete listing, see matcclubs.matc.edu or call 414-297-6229.

Student Government
Through Student Government, all MATC students are represented by elected student representatives who act on their behalf. It is officially recognized as the voice of the student body by the administration of MATC and as such, it can make recommendations to the director of Student Life regarding student- or college-related issues. Participating in Student Government is a way to contribute to MATC and to develop skills in communication, organization and leadership. To become involved, call 414-297-6551, or see Student Government at matc.edu/student/studentlife/

Honor Societies
Information on eligibility requirements for membership in various honor recognition programs is available through the Office of Student Life. Ceremonies recognizing scholastic achievement are conducted by this office during the year. For information, see Student Honor Societies at matc.edu/student/studentlife/

Student Publications
The Phoenix is the college’s literary and arts magazine that features student submissions. The college’s biweekly student newspaper, MATC Times, is produced and published by MATC students. Students interested in photography, art and design, advertising and writing are encouraged to participate; it is not necessary that you have previous training or experience. Call 414-297-7824 for information.

Student Enrichment/Diversity Programs
Working with campus student organizations, the Office of Student Life brings together students from a broad range of ethnic and cultural groups. This office plans, implements and coordinates social and cultural extracurricular events, including student entertainment programs, in collaboration with student organizations. For more information, call 414-297-6229.

Stormer Pass
The MATC Stormer Pass is the official identification card for every student at MATC. The card provides you with a convenient, easy and safe environment to make purchases and use services on campus. While off campus, use your Stormer Pass as your U.S. Bank ATM/debit card when you open a U.S. Bank checking account. For more information, contact Office of Student Life at 414-297-8697, email stormerpass@matc.edu or visit matc.edu/student/studentlife/, or contact U.S. Bank at 414-226-0105.

Student Complaint Process
If you have college-related concerns or problems, or have complaints or disputes involving college policies, services, employees or other students, you are encouraged to utilize the Office of Student Life.
Visit matc.edu/student/studentlife/ or call:
• Downtown Milwaukee Campus, 414-297-6229
• Mequon Campus, 262-238-2218
• Oak Creek Campus, 414-571-4715
• West Allis Campus, 414-456-5304

Legal Clinic
The Student Legal Clinic provides information and referrals on issues that have an impact on your daily life outside the college. Such issues might be unemployment insurance, landlord-tenant disputes, family matters, traffic violations, small claims and debt counseling. Legal issues involving MATC services, policies and/or personnel, and criminal or serious civil matters are not handled through this office. Operating in cooperation with the Office of Student Life and at no charge to you, the clinic offers information, workshops, seminars and a self-help library of reference materials. For hours or to make an appointment, call 414-297-6630.
CAREER PLANNING SERVICES

Your interests help determine the kind of work you enjoy, and the careers where you are likely to find success. If you are undecided about a career, MATC can help you make an informed decision.

Career Planning Workshop
The Career Planning workshop, “Exploring College Majors at MATC,” is a seminar that meets for three hours. Participants will begin the process of identifying and exploring careers to help choose which of MATC’s many degree and diploma programs are best suited to their interests and abilities.

The workshop looks at labor market trends, high-demand career areas, how to enter those careers, and average salaries. You will:
- Complete a career interest inventory
- Learn about your career personality type
- Match career areas to your interests and personality

For information about registering for workshops located at the Downtown Milwaukee Campus, visit or call the Career Planning Center, Room S209 in the Student Center, 414-297-6267; or call Mequon Campus, 262-238-2300; Oak Creek Campus, 414-571-4500; West Allis Campus, 414-456-5500.

ACADEMIC ADVISING

As an MATC student, you will make many critical decisions regarding your academic program and career goals. Assigned advisors and counselors can provide the assistance you need to make informed decisions.

Advisors and counselors can:
- Answer questions about degree requirements and college procedures
- Assist you with course selection and registration
- Provide information about helpful campus resources and academic support services

It is important to see an assigned advisor (or assigned counselor if you are on probation) before you register for classes each semester. Maintain communication with your advisor throughout your attendance at MATC. Assigned advisors can help you understand your academic options and avoid costly mistakes, but only if you take the initiative to seek advice or participate in advising activities.

Every semester, MATC schedules a priority registration period for continuing program students. Before and during this time, advisors are available to assist you with course planning and scheduling for the following semester.

If you are admitted to an associate degree or technical diploma program, you will be assigned an advisor after the start of your first semester. Thereafter, your advisor’s name and contact information will appear on your Program Plan, class schedule and other student records. Students on Academic Probation will be assigned a counselor instead of an advisor. If you do not have an assigned advisor or cannot locate your advisor, contact advising@matc.edu, or visit the Counseling, Advising and Career Planning Center on your campus.

MATC Counseling

Each Counseling, Advising and Career Planning Center offers crisis intervention, referrals and brief, supportive listening. All services are free, confidential and tailored to fit student needs. Faculty and staff are also encouraged to utilize the services. The counselors are available at each campus from 8 a.m. to 6 p.m. weekdays (until 4 p.m. on Fridays) when classes are in session. For assistance, visit or call:
- Downtown Milwaukee Campus, 414-297-6267
- Mequon Campus, 262-238-2300
- Oak Creek Campus, 414-571-4500
- West Allis Campus, 414-456-5500

Department of Multicultural Student Services

The Department of Multicultural Student Services is composed of four offices: Asian American, African American, American Indian and Latino Student Services. Support services, case management, advocacy and intervention, and academic advising are provided. These offices are staffed with specialists who are culturally sensitive to the types of support services needed by minority students. The specialists serve as advocates for current and prospective minority students from diverse backgrounds. The staff provides case management to help students overcome their educational, vocational and financial obstacles so they can successfully achieve their educational goals. The Office of Multicultural Student Services is located in Room M238 in the Main Building at the Downtown Milwaukee Campus. For more information, call 414-297-6968.

Veterans Services

If you are a recipient of the GI Bill and wish to take advantage of Veterans Administration educational benefits, complete the required forms and submit the necessary paperwork to the Veteran Services advisor in the Office of the Registrar. This should be done prior to the start of each semester to make sure your monthly GI Bill payments will arrive on time. VA educational benefits may be used to pay college expenses, but you also may be eligible for other types of financial aid. For information, contact the MATC Military Education Support office at 414-297-6394, or stop in Room SI15 on the Downtown Milwaukee Campus. An advisor is available to answer questions regarding benefits on a walk-in basis or by appointment.

Office of Bilingual Education

Many MATC courses are taught in both Spanish and English. Bilingual associate degree, technical diploma and certificate programs are offered; to learn more call 414-297-8882, email michelsb@matc.edu or martinas@matc.edu. Assistance for students who need help with bilingual communication also is provided by the Office of Bilingual Education, Room M224 in the Main Building at the Downtown Milwaukee Campus. Call 414-297-7801 or 414-297-8147.

The bilingual staff assists students in improving their skills, or enrolling in a degree or diploma program. Educational assistants provide ongoing academic support and tutorial services.

For more information: matc.edu or 414-297-MATC.
ADVISING, STUDENT SUPPORT

services in and out of the classroom. In addition, specialists provide case management services to bilingual students enrolled in associate degree, diploma, certificate and apprenticeship programs.

The following Office of Bilingual Education services are tailored to students’ needs and are essential to maintain high standards of student success and retention:

- MATC Admissions and Registration
- Career exploration information
- Degree, diploma, certificate and apprenticeship information
- Bilingual programs initiatives
- Counseling referrals
- Financial aid advising
- Scholarship advising
- Test proctoring
- Translation and evaluation information and referrals on degrees from foreign countries
- Academic advising and tutorial support
- Case management
- Employment advising
- Graduation process advising
- Student advocacy
- Spanish GED (General Educational Development) and bilingual Basic Skills course offered

The major goals of these services are:

- To provide multiple options to Limited English Proficiency students who want to enter and successfully complete an occupational program while they continue to develop and improve their English skills
- To provide individualized and group bilingual academic support services to students while they are in training
- To provide adequate academic and job search services for students within the program
- To provide students with instructional support services

Comunicación bilingüe

Asistencia para estudiantes que necesiten ayuda de comunicación bilingüe es proporcionada por el departamento de la Educación Bilingüe, localizado en la oficina M224, Edificio Principal Milwaukee, Teléfonos 414-297-7801.

Peb zoo siab pab koj

Cov neeg ua hauj lwm hauv Bilingual Department zoo siab pab kom koj ncav txog koj lub hom phiaj ntawm kev kawm ntawv uas yuav ua rau koj tau txox hauj lwm zoo. Yog koj xav paub ntawv ub thov hu rau peb ntawm 414-297-8147 los yog 414-297-6100. M224, Main Building, Downtown Milwaukee Campus.

Assistance for Migrants and Seasonal Farm Workers

The College Assistance Migrant Program (CAMP) is funded by the U.S. Department of Education to assist students who are migratory or seasonal farm workers (or children of such workers) to successfully complete their first academic year in a postsecondary program at MATC. Eligible students will receive assistance in the admission process, first-year tuition cost, financial aid stipends, academic tutoring, career counseling and other services. For more information, email fongl@matc.edu, call 414-297-8825, or visit the CAMP office, Room M224 in the Main Building of the Downtown Milwaukee Campus.

International Students

MATC welcomes international students. Those who intend to apply for a student visa should visit the International Students section at matc.edu, or write to the MATC International Student Admissions Office, Room S115, 700 West State Street, Milwaukee, WI 53233-1443; or call 414-297-8840.

Student Accommodation Services

The mission of Student Accommodation Services (SAS) is to ensure that students with disabilities have equal access and opportunities to all courses, programs and activities offered at MATC according to Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act, and Americans with Disabilities Act Amended.

Accommodations and services will be based upon written requests for accommodation and documentation of disability. Prospective students with disabilities should contact Transition Services at the Downtown Milwaukee Campus, Room S215, 414-297-7839.

Contact the SAS office on any campus to apply for classroom accommodations:

- Downtown Milwaukee Campus
  Room C219, 414-297-6750, 414-297-8982 TDD
- Mequon Campus
  Room B212, 262-238-8227
- Oak Creek Campus
  Room A211, 414-571-4525
- West Allis Campus
  Room 217, 414-456-5352

Child Care Services

Child care is available at each campus for the children of students enrolled at any MATC location. By offering reliable, quality child care, the college hopes to contribute to parents’ success as MATC students. The child care centers offer a variety of learning experiences that encourage the child’s emotional, social, intellectual and physical development. Children must be enrolled in the child care center on a regular basis. MATC is approved for payment by several funding agencies. Call or visit any campus’s child care center:

- Downtown Milwaukee Campus, Room H240, 414-297-7880
- Mequon Campus, Room A216, 262-238-2450
- Oak Creek Campus, Room B124, 414-571-4690
- West Allis Campus, 865 South 72nd St., 414-456-5419
ADVISING, STUDENT SUPPORT

Academic Support Centers
Located at the Downtown Milwaukee, Mequon, Oak Creek and West Allis campuses, the Academic Support Centers are open to all MATC students. Services include assistance in computer applications, course assignments, online use, math, science, social sciences, study skills, writing, as well as tutoring services. Current MATC IDs are needed for printing. Hours are posted online or you may call:

- Mequon Campus, Room B210, 262-238-2220
- Oak Creek Campus, Room A208, 414-571-4647
- West Allis Campus, Room 249, 414-456-5334
- Downtown Milwaukee Campus - See the phone numbers listed in the descriptions below.

Communications Center
Located at the Downtown Milwaukee Campus in Room C278, Communications Center services provide assistance in business courses related to communications including writing, business and computer applications, and online use. A current MATC ID is required for entry and printing. Call 414-297-6739.

Computer Production Center
Located at the Downtown Milwaukee Campus in Room M273, Computer Production Center services include assistance in using a computer for course assignments, word processing, spreadsheets and databases, computer programming and more. Call 414-297-7922.

Math Center
Located at the Downtown Milwaukee Campus in Room C271, the Math Center provides assistance in all math levels including accounting and business math. Call 414-297-6989.

Science Center
Located at the Downtown Milwaukee Campus in Room C271, Science Center services include assistance in science and School of Health Sciences courses, use of computerized instructional resources, and internet use. Call 414-297-6989.

Writing Center
Located at the Downtown Milwaukee Campus in Room C270, Writing Center services include assistance in course-related written assignments and projects, résumé writing and research papers. An online writing lab (OWL) is available for students in courses or programs. Call 414-297-8189.

Tutoring Services
Tutoring Services are available to all MATC college students depending on the availability of tutors for the times requested. Services include assigned tutoring, Supplemental Instruction (SI), group tutoring and walk-in tutoring. Tutoring is available upon request at the following campus sites:

- Downtown Milwaukee Campus, Room C201, 414-297-6791
- Mequon Campus, Room B210, 262-238-2220
- Oak Creek Campus, Room A208, 414-571-4647
- West Allis Campus, Room 249, 414-456-5334

Online tutoring also is available to students enrolled in most courses. Search Distance Tutoring on matc.edu.

For more information: matc.edu or 414-297-MATC.
Start Your Bachelor’s Degree Here
If you plan to earn a bachelor’s degree, you can start at MATC and transfer your credits. By enrolling in MATC’s Liberal Arts and Sciences degree program or a degree program that is designed with four-year college transfer in mind, you can earn credits that will transfer to other colleges and universities. MATC has almost 400 four-year college transfer agreements in place. Among the multiple pathways for MATC students to begin their bachelor’s degrees:

- Complete up to 72 four-year college transfer (200-level) Liberal Arts and Sciences credits. These core courses may transfer to four-year colleges in Wisconsin and beyond.

The following are four-year college transfer degrees in MATC’s School of Liberal Arts and Sciences:

- Associate in Arts
- Associate in Arts Online – Accelerated
- Associate in Arts: Educational Foundations Track
- Associate in Science
- Associate in Science: Biotechnology Track
- Associate in Science: Chemical Technology Track

Program-to-Program Transfer:
Selected associate degree program credits are accepted as the first two years of a related bachelor’s degree program at designated partner four-year colleges.

University of Wisconsin System Programs:
Students are guaranteed admission into UW-Madison, UW-Milwaukee or UW-Parkside if they complete a predetermined number of credits in prescribed Liberal Arts courses, maintain a good GPA and declare their intent for the program.

UW-Green Bay’s Bachelor of Applied Studies (BAS) degree offers a pathway to a bachelor’s degree for MATC graduates of Associate in Applied Science programs. These graduates are eligible to pursue the BAS degree in one of several emphasis areas by transferring in the required number of credits, starting at UW-Green Bay as a junior, and finishing the degree fully online.

Historically Black Colleges and Universities:
Students complete the first two years at MATC and then transfer with junior standing to one of 10 partner HBCUs throughout the United States.

For a comprehensive listing of transfer agreements, see matc.edu.

Plan Ahead
Preparation is key. To get the most out of your four-year college transfer experience, plan ahead by contacting MATC’s four-year college transfer office at 414-297-6836. See the Credit Transfer information at matc.edu.

It is important to remember that in credit transfer, the awarding of credits is with the receiving institution. Contact the Admissions department of the college or university to which you plan to transfer for more detailed credit transfer information.

Transfer Days
MATC hosts transfer days with representatives from many public and private colleges and universities. Plan to attend a transfer day on your campus. Watch for information about the dates, locations and times.

Research Your Options
Take a look at the following resources when researching your options:
- Articulation agreements between MATC and the various colleges and universities
- Majors offered and the curriculum guides for the majors you are interested in, to assist with course selection while at MATC
- Contact information for the college or university you are considering
- Location and other important logistics that will influence your decision
- Financial aid availability
- General information about the college, such as average class size, student and campus activities, and other areas of interest to you
- Because the final decision of which classes will transfer is made by the institution you are transferring to, it is important to make contact early and plan ahead

TIS — Transfer Information System
TIS is a website designed with the transfer student in mind. If you are planning to transfer to another Wisconsin college or university, you can research which courses transfer to your new school and create a planning guide for your major. Go to tis.uwsa.edu.
Student Employment Services – JOBshop
The mission of the MATC JOBshop is to assist students and graduates with employment needs and provide career information resources. Through the use of the Wisconsin TechConnect Job System, students can explore employment opportunities and research the job market in specific program areas. The JOBshop partners with employers to offer information about job openings for MATC graduates and students. It also provides opportunities for students to network with employers through on-campus programming, employer information sessions and job fairs.

JOBshop
STUDENT EMPLOYMENT SERVICES

The JOBshop is located at the Downtown Milwaukee Campus, Room S114, and services are available at all regional campuses by appointment. JOBshop hours are Monday through Thursday, 8 a.m. - 4:30 p.m. and Friday, 8 a.m. - 4 p.m. For assistance, visit S114, call 414-297-6244, or email jobshop@matc.edu.

Wisconsin TechConnect Job System
Wisconsin TechConnect is a statewide online employment information system for recruiting Wisconsin Technical College System (WTCS) students and graduates for all types of employment. It is a collaborative effort of Wisconsin’s 16 technical colleges. Employers across the state post job openings; students and graduates can upload their résumés and view job openings at wisconsintechconnect.com.

Graduate Career Report Gives Employment Information
An important resource for prospective and current students regarding career and education planning is MATC’s Graduate Career Report. To view the report online, follow the graduate employment report link at matc.edu/discover_matc/index.cfm.

Academic Quality Improvement Program (AQIP)
MATC is committed to achieving and maintaining excellence in all areas of the Academic Quality Improvement Program (AQIP) of the college’s accrediting agency, the Higher Learning Commission of the North Central Association of Colleges and Schools.

According to the commission, “AQIP’s goal is to infuse the principles and benefits of continuous improvement into the culture of colleges and universities in order to assure and advance the quality of higher education.” AQIP institutions are required to meet accreditation standards through actions “that align with the ongoing activities of an institution striving to improve its performance.”

AQIP identifies nine categories for colleges and universities to prove they meet accreditation requirements:
1. Helping Students Learn
2. Accomplishing Other Distinctive Objectives
3. Understanding our Students’ and Stakeholders’ Needs
4. Valuing People
5. Leading and Communicating
6. Supporting Institutional Operations
7. Measuring Effectiveness
8. Planning Continuous Improvement
9. Building Collaborative Relationships

MATC’s Strategic Goals and Core Abilities reflect the nine categories listed above. Further, the college develops a corresponding Strategic Plan for each academic year.

Each of the goals has been matched with numerous measurable objectives, strategies and tactics. Several college committees are responsible for evaluating, reviewing, improving and further developing those strategies and tactics for the benefit of our students as individuals, the college as a whole, our collaborative partners and the entire metropolitan community.

MATC’s Strategic Goals:
1. Student Success
2. Workplace Engagement and Innovation
3. Economic and Environmental Sustainability
4. Partnerships and Community Collaboration

Core Abilities:
1. Communicate Effectively
2. Collaborate With Others
3. Respect Diversity
4. Demonstrate Responsibility
5. Think Critically and Creatively
6. Utilize Technology
7. Apply Math and Science
8. Demonstrate Environmental Responsibility
9. Embrace Change
ADMISSIONS/HOW TO REGISTER/ENTRANCE REQUIREMENTS

Getting Started
You can visit the Welcome Center at any MATC campus as your starting point. The Downtown Milwaukee Campus services include 30 dedicated computer stations for completing applications for admissions, registration and financial aid. Our Student Services staff provides personal assistance at each Welcome Center.

You will also find information at matc.edu. For admissions application deadlines, see matc.edu/student/Admissions/index.cfm.

If you plan to earn a degree or diploma from MATC or intend to receive financial aid, you must complete the admissions process and be admitted to a degree or diploma program before the start of the semester. To research your options, see the descriptions of degree and diploma programs in this catalog, or visit matc.edu. If you have questions about MATC programs, call 414-297-MATC.

If you want to take courses but are not interested in receiving a degree or diploma, it is not necessary to complete the admissions process. You can register for classes in person at any of the four MATC campuses. Current students can register online through INFOnline at matc.edu.

Whether or not you are admitted to a degree or diploma program, you must register for the classes you wish to take. Enrollment is completed when you have paid for your classes and attend them.

Apply for Admission to a Program

Go to matc.edu.
Click on Student Services; and under Get Started, click on Start a Degree or Diploma.

Pay the $30 nonrefundable application fee.
There is an additional $20 nonrefundable fee for programs that require a criminal background check. See matc.edu for a list of those programs. Make your check or money order payable to MATC. You can also pay by credit card if you apply online.

Submit transcripts.
Bring official high school transcripts, or GED, or college transcripts to the Welcome Center, or mail them to the MATC Admissions office. Transcript request forms for you to complete and mail are available at matc.edu.

- Home-schooled applicants should provide a copy of the PI-1206 form with detailed high school transcript
- Out-of-country transcripts must be translated and evaluated by an approved agency

If you need financial aid
Apply as early as possible. Apply for financial aid online at fafsa.ed.gov. The MATC financial aid college code is 003866. See the Financial Aid section of this catalog or matc.edu.

Take the Accuplacer Test
This test is administered to gauge your readiness for college-level studies. It may be waived if your college transcripts show you have completed 12 or more college credits with acceptable grades. The test may also be waived if you achieved minimum scores on the ACT test.

- You will get a letter notifying you how to schedule a testing session
- See Student Services at matc.edu for links to sample Accuplacer test questions
- Testing accommodations will be made for students with disabilities

Complete the Online Orientation
- You will be introduced to essential student services and resources
- You will receive a letter notifying you of how to access the orientation

When you have completed the online orientation and the admission process, you may register for classes.

REGISTER AND PAY TUITION

How to Register
Registration is the process of signing up for classes. The procedure depends upon whether you are a new or continuing student in a degree or diploma program, or are taking classes but not pursuing a diploma or degree.

You may register in person at any of the four MATC campuses. Continuing students may also register online through INFOnline at matc.edu.

If you intend to pursue a degree or diploma, you must first complete the admission steps listed previously or follow the steps to enrollment at matc.edu.

When you have completed the admission process, MATC will notify you by mail of admission status and provide information regarding the next steps necessary in the process.

If you’re already enrolled in a degree or diploma program, you can register for classes for the next semester. Shortly after midterm of the current semester, you will be notified to meet with an advisor who will assist you in selecting courses and provide you with additional registration instructions.

If you’re continuing in a program but have not been active for a semester or longer, contact the Admissions office at 414-297-6542. You will need to be readmitted to the program.

If you’re not pursuing a degree or diploma, you may register for classes without following the admissions process. See the class schedule at the INFOnline link at matc.edu.

You are not officially enrolled and cannot attend classes until all requirements for registration have been completed, including payment of fees. You may pay in person at any campus or online through INFOnline.
INFOOnline
INFOOnline at matc.edu allows you to:
• Search for available current class listings
• Register for classes online
• Obtain your financial aid status
• View your class schedule and cumulative GPA
• Review and print your unofficial transcript
• View your semester grades

Prospective students or students who do not have a login user ID may call 414-297-7900 to enter the information. Once your information is entered, you will be able to register online. This service is available during MATC’s regular working hours only.

Fees and Tuition
Fees for most courses are set by the Wisconsin Technical College System Board and may change each semester. View current fees at matc.edu/student/Admissions/fees.cfm. Fees and tuition are subject to change.

Course Changes
Adding courses:
You may add courses up to the end of the first week of classes in a given semester (some restrictions apply). If the course is shorter than the 15- or 16-week semester, you may add courses until the first day of class. Instructor approval is required after classes have begun. You will need to obtain a Course Change form from any campus Registration office. Submit your completed form to the Registration office.

Dropping courses:
When you no longer wish to be enrolled in a class, you must officially drop the class within the timeframe specified in the Student Initiated Withdrawal Procedure located on the back of your student schedule.
If you register for a class after the class begins and fail to officially drop it, you are still responsible for the course fee.
To officially drop a class, use INFOOnline or obtain a Course Change form from any campus Registration office, then submit your completed form to the Registration office. Keep the student copy for your records.

Repeating courses:
If more people register for a continuing education course than can be accommodated, students who have completed the objectives of the course previously may not reregister until new applicants have had a chance to enroll.

Cancellation of classes:
The college reserves the right to cancel a class in cases of insufficient enrollment or budgetary constraints, and to close registrations for a class section that has reached its capacity. Course times, locations and instructors are subject to change without notice.

ENTRANCE REQUIREMENTS
FOR PROGRAM STUDENTS
A high school diploma or GED equivalency certificate is required before entrance to an MATC associate degree or technical diploma program, unless otherwise indicated.

Each academic program includes courses that require a minimum level of proficiency in reading, writing and math. If you lack proficiency in any of these areas, you may be advised to take refresher courses. Upon attainment of high school requirements or successful completion of refresher courses, notify the Admissions office to update your admission status.

Some courses within degree programs may also require specific high school requirements. If you lack these course requirements, you may fulfill them either through our Adult High School (see the School of Pre-College Education section in this catalog or at matc.edu), or our School of Liberal Arts and Sciences.

Readmission
If you were not continuously enrolled in your program (excluding summers) you must apply for readmission by completing a program readmission form. Notify the nearest MATC campus Admissions office by mail, phone, or by visiting matc.edu.

If the program you are reapplying to has a waiting list, the instructional department will determine if you can be readmitted directly to a segment of the program or must be placed on the waiting list. The graduation requirements in effect at the time of your readmission will be used to determine your eligibility for graduation.

Course Placement Assessments
During the MATC admissions process, you will be asked to take the Accuplacer assessment to make sure you have the skills and knowledge needed to succeed in the degree or diploma program you have chosen. Many of the college's programs require that students meet basic-skills-level requirements in reading, writing and mathematics before being accepted into a program.

After completing the assessment, MATC will provide you a letter notifying you of the next steps in reviewing your assessment and registering for classes based on the review.

If you are coming to MATC to develop your basic academic skills, obtain a GED/HSED, or enroll in our Adult High School, you will also be asked to take course placement assessments.

If you have a disability and require special accommodations, please call 414-297-7839 or 414-297-6986 (TDD).

Basic skills assessment is also available at community-based organizations (CBOs) in the metro-Milwaukee area. For CBO locations, call 414-297-6967.
Unconditional Acceptance
If you meet all requirements, you will be fully admitted into the degree or diploma program of your choice unless a waiting list exists or it is a petition program.

Conditional Acceptance
If you need courses to qualify for programs or if your placement scores do not meet program requirements, you may be conditionally admitted. You will be advised to follow an appropriate sequence of courses.

Waiting Lists
Waiting lists are established when the number of applications for a program exceeds the student capacity of the program. Applicants are then placed on the waiting list by the date their application process is completed. Students are removed from this list as openings occur. Only applicants who meet the academic admissions requirements will be added to the waiting list.

Students are informed during the admissions process if a program has a waiting list. While waiting to take core courses, program students may enroll in the program’s specified General Studies courses and electives.

Petition Process
Most School of Health Sciences degree and diploma programs use a petition process for entry. Petitioning requires you to complete the petition application during the petition window dates. Additional instructions are provided throughout the process.

The petitioning process is specific to each individual program. Detailed instructions on how to complete the petitioning process for a program are available online. See matc.edu and visit the program’s web page to view the petition process.

Criminal Background Check
The Wisconsin Caregiver Law requires MATC to check your criminal background if you are applying for admission to an MATC program that has this requirement. To determine if your program of interest requires a criminal background check, go to matc.edu and click on Student Services; then click on Start a Degree or Diploma under Get Started.

All students applying for programs requiring criminal background checks must pay the required fee, and complete and submit criminal background check forms, available at matc.edu.

Healthcare facilities and many service facilities are required by Wisconsin law to conduct criminal background checks. As a future provider of patient care services, child care/human services, or nutrition care services, you will be required to fulfill the criminal background check requirements prior to your participation in patient contact, or in clinical courses at facilities. For more information: 414-297-7498, or visit the Wisconsin Department of Health and Family Services website, dhfs.wisconsin.gov/caregiver/index.htm
Important Information for Financial Aid Eligibility

You must be admitted to an MATC degree or diploma program before the admission application deadline.

- Your academic status must be one of the following: good, warning, or probation with financial aid.
- You will not receive MATC financial aid for the 2014-15 school year until your 2014-15 FAFSA has been processed and the information from the U.S. Department of Education has been received by the MATC Financial Aid office.
- Submit all forms and documents requested by the MATC Financial Aid office as soon as possible.
- You will receive an email from MATC informing you of the financial aid that you have been awarded.
- It is your responsibility to read all MATC student emails and information that you receive from the MATC Financial Aid office.
- It is also your responsibility to update your postal mailing address and email address with MATC and the U.S. Department of Education.
- If you withdraw or if your instructors withdraw you from all of your courses prior to 60% of the semester being completed, you will owe a portion of your financial aid back.
- If you do not attend a course that was included in your financial aid enrollment status, your financial aid will be adjusted and you may have to repay a portion of your financial aid.

The 150% Rule

- You are not eligible for financial aid if you have reached the 150% rule, meaning that you may attempt no more than 150% of the number of credits needed to graduate from your academic program of study.
- All of your attempted credits, transfer credits, and credits you paid on your own apply toward the 150% rule.
- If you change programs, all of your attempted credits apply toward the 150% rule in your new program of study.

Repeated Coursework

Federal regulations limit the number of times a student may repeat a course and receive financial aid for that course:

- A student may receive aid to repeat a previously passed course one additional time.
- A student may receive aid when repeating a course that was previously failed, regardless of the number of times the course was attempted and failed.
- If a student retakes a course that is not aid eligible, a recalculation of aid is done to exclude the credits for the repeated course. If a balance is due after the recalculation, the student must make payment in order to retain the course.
- This rule applies whether or not the student received aid for earlier enrollments in the course.
DeGRees, DIPloMAs AnD CeRTIFICATes

Associate in Arts Degree or Associate in Science Degree (A.A. or A.S.)
The Associate in Arts (A.A.) and Associate in Science (A.S.) degree programs typically require two or more years to complete. These programs include courses in English, history, social science, mathematics, natural science, humanities, foreign language, computer literacy and physical education. Credits earned in most 200-series courses will be accepted by four-year institutions to satisfy course requirements for bachelor's degree programs.

Associate in Applied Science Degree (A.A.S.)
An A.A.S. degree program typically takes two years to complete when pursued full time. Courses with the A.A.S. degree programs are numbered in the 100-series. Selected courses are accepted for transfer to bachelor's degree programs, but it is important to check transferability with the four-year institution you plan to attend.

Technical Diplomas
If you are interested in preparing for a specific job or upgrading your job skills, MATC offers specialized programs that can lead to a technical diploma in your chosen field. The timeframe of the technical diploma programs ranges from less than one semester to one- and two-year programs that provide extensive career training. Technical diploma courses usually require more time in hands-on activities, more class time and less homework per credit than associate degree courses. Many technical diploma courses are numbered in the 300-series. Some diploma programs have courses in the 100-series and those credits can be applied to related associate degree programs.

Certificates
In addition to associate degrees and technical diplomas, MATC also awards certificates. A certificate may consist of:
- Selected courses to update career skills
- Courses selected from an existing associate degree or technical diploma program that are combined to meet the needs of people having related experience and/or who are working in the field
- A single continuing-education career course

If you are interested in enrolling in a certificate program, notify the instructional division of your intent. You must initiate the request for the certificate upon completion of the requirements.

HONORS PROGRAM
Honors designation on transcripts enhances prospects for employment, university admission and scholarships. Other benefits of being an Honors student include:
- Coursework to prepare you for bachelor’s degree programs
- Interaction with Honors faculty and Honors students
- Greater latitude to pursue special-interest projects for credit
- Participation in national and regional Honors associations and conferences
To participate in the Honors program, complete an Honors Option contract with your instructor.

Students receive special commendation if they earn a required minimum number of Honors credits, complete the course requirements of their program and attain a 3.5 cumulative grade-point average. For more information, email honors@matc.edu.

SECONDARY CREDENTIALS

High School Equivalency Diploma (HSED)

Students can earn a High School Equivalency Diploma by completing the GED certificate and satisfying the Civic Literacy and Health requirements. There are four other methods of completing the GED certificate and satisfying the Civic Literacy and Health requirements. These options.

FLEXIBLE LEARNING OPTIONS

MATC offers many options for students to fit classes around work and family schedules:

- Evening classes are held at all four campuses and other sites throughout the district
- Weekend classes are held on Friday evenings and/or Saturdays
- More than 400 online classes are offered
- Online programs for some associate degrees, diplomas and certificates are also available; see the Online Learning page of this catalog or matc.edu
- Accelerated degree programs: Designed for working adults, MATC’s Accelerated programs are structured for minimal in-class time; these programs are identified by the word Accelerated in the program name
- Interactive Television (ITV): Two-way video sessions can originate from any campus and be shared with other campuses

Auditing Courses

You may audit a course if you do not want to receive credits or a grade. You will not be required to complete out-of-class assignments and examinations, but fees and attendance requirements are identical to those of credit students. Audited courses may not be used to satisfy course prerequisites or course requirements, and are not eligible for financial aid or veterans benefits. Not all courses can be audited.

Continuing Education Courses

MATC offers Continuing Education Credit (CEC) and personal enrichment course opportunities.

Continuing education courses are also available to businesses on a contract basis through the MATC Office of Workforce and Economic Development. Classes can be conducted on campus or onsite. MATC can create continuing education courses at any time, on any subject. Before MATC creates the course, a community need must be demonstrated and a minimum of 12 people would need to enroll in the course if it were offered; a qualified teacher must be located; and facilities must be available.

Career Courses – Degree and Technical Diploma Credit

MATC offers degree courses and technical diploma courses for credit, which may be taken for continuing education purposes.

Career Courses – Continuing Education Credit (CEC)

MATC provides continuing education courses that are not part of the college’s degree and diploma programs. MATC’s CEC career courses (400-series) provide ways for students to update job skills and gain new competencies in emerging technologies. The CEC courses are not included in this catalog; for information see matc.edu/OWED/cont_edu.cfm.

Personal Enrichment Courses (Noncredit)

A variety of personal enrichment courses are offered at MATC campuses and other locations throughout the district. These courses are numbered in the 600-series. The courses are not included in this catalog; call 414-297-MATC for information.
OPTIONS FOR LEARNING

Apprenticeships
An apprenticeship is a formal training agreement providing on-the-job training and related classroom instruction. A participating employer teaches the skills of the trade on the job. The classroom instruction is theoretical and practical knowledge pertaining to the given trade. To become an apprentice you will need to be registered with the Bureau of Apprenticeship Standards and have an employer sponsor your attendance in classes for one day per week. The balance of your training will occur on the job. For more information, contact the Apprenticeship Coordinator at 414-571-4743 or email triscarn@matc.edu. The following lists apprenticeship instruction areas at MATC; it does not represent all occupations that may offer apprenticeships:

Internships
Internships are educational programs that combine in-class academic work with career-related employment. Internships provide students the opportunity to apply academic knowledge to actual work situations, earn required or elective college credits, acquire career-related work experience and enhance personal growth. Some experiences are paid. Internships are mandatory in some MATC programs and optional in others; refer to the program’s curriculum. For information about how to become involved in an internship, call 414-297-6244 or email jobshop@matc.edu.

Study Abroad Opportunities
MATC offers and encourages a variety of study abroad opportunities for students interested in learning firsthand about cultures around the world. Scholarships are available, on a limited basis, to help fund MATC-sponsored study abroad opportunities. Credits earned while studying abroad may apply directly to your program. For more information, call the Office of International Education at 414-297-8014.

ADVANCED STANDING
Students can apply for advanced standing and obtain course credits if they have skills and knowledge equivalent to MATC courses. Options include credit awarded for high school coursework, courses transferred from another college, work experience, independent study, military training, apprenticeship or examination. Advanced standing work may also qualify as course substitutions or waivers. If credit is awarded, it will be counted toward completion of MATC graduation requirements. Apply early to avoid duplication of coursework. All MATC graduates must complete the final 25% of their coursework at MATC.

Applications for advanced standing are available at all MATC campuses. For more information, call 414-297-8593 at the Downtown Milwaukee Campus, or 414-571-4566 for the Mequon, Oak Creek and West Allis campuses.

Transfer Credit
MATC will award transfer of credit from regionally accredited colleges and universities.
A request will be considered only if the student received a grade of C or higher in those courses.
Credit for military service school may be allowed in conformity with the American Council on Education (ACE) Office of Educational Credits. Credit for noncollegiate courses offered by business, industry and government agencies may also be allowed. All credits awarded for transfer will be counted toward financial aid eligibility.

Credit by Examination
Students may earn advanced standing by demonstrating ability in a specific subject through credit by examination. The most common examinations include the College Level Examination Program (CLEP), Scholastic Aptitude Test (SAT) II, and Advanced Placement (AP) exams. Credit for the CLEP general or subject examinations will be granted for advanced standing. CLEP examinations are not administered at MATC. See clep.collegeboard.org for exam locations.

Spanish Retroactive Credits
If students have had Spanish coursework in the past or speak Spanish, they should take the Spanish Placement Exam. It is a free exam and a good indicator as to what level is the best fit. By testing into an advanced course and earning at least a grade of B, students can earn advanced standing (retroactive credits) for prior courses. Contact the Foreign Language department chairperson in the School of Liberal Arts and Sciences for additional information.

Substitution
One or more MATC courses may replace another MATC course. Students will earn the grade and credit of the course taken. There is no fee for substitution.

Credit for Work Experience
Students may receive credit for work experience. Evaluation of work experience is conducted by the instructional dean. A list of course requirements is provided to the applicant.

High School Credits
MATC has agreements with high schools to award credit for courses taken in high school, including MATC’s Adult High School. These agreements are for individual MATC diploma and degree programs. Credit is awarded toward completion of specific MATC program graduation requirements. The credit is applied when the student has been admitted to the program and completed coursework at MATC.

The number of credits awarded will appear on the student’s MATC transcript without a grade. For information go to: matc.edu/student/currentstudent/credittransfer/ and click on High School Initiatives.

Apprenticeship Credits
Students may request advanced standing based upon apprenticeship credits (500-level) or apprenticeship work experience. For details, call 414-571-4743.
Request for MATC Transcripts

Academic records are kept on permanent file at the Downtown Milwaukee Campus Office of the Registrar. All requests for transcripts must be submitted in writing, in person, by mail or fax. The fax number is 414-297-6371. Telephone requests will not be honored. There is a charge for transcripts. Financial obligations to the college must be cleared before a transcript will be issued.

Include with your transcript request: name (when you attended MATC), student ID or Social Security number, birthdate, first and last years of attendance, complete mailing address and appropriate fee. Payment can be made by check, MasterCard/Visa/Discover, or money order. Call 414-297-6416 for an informational recording. You may print an unofficial transcript via INFOnline at matc.edu.

Reviewing Your Academic Record

You have the right to review and inspect your academic record. You can view your unofficial college transcript on INFOnline at matc.edu.

If you believe the record is inaccurate or misleading, you must notify the Registrar in writing what you believe the inaccuracy or misleading statement to be. Within 45 days of the date MATC receives a request for revision, the Registrar will respond to you in writing as to whether or not the record will be amended. If the amendment is not granted, you will be informed of your right to a hearing. Additional information regarding the hearing procedures will also be provided at that time.

If MATC and you agree that the appropriate remedy would be inclusion of a statement in your record commenting on the challenged information, or a statement setting forth reasons for disagreeing with the decision, that may be the action taken with or without a hearing. The statement may be maintained as part of your educational record as long as the contested portion is maintained.

Change of Name or Mailing Address

Name and mailing address changes should be made through INFOnline at matc.edu. If you do not notify the college of changes, we will not be responsible if you do not receive information.

Family Educational Rights and Privacy Act (FERPA)

MATC complies with the Family Educational Rights and Privacy Act (FERPA). The purpose of this act is to allow students to know what educational records are kept by the college, to provide students the right to inspect those records and ask for corrections if necessary, and to control the release of such information to those who are not involved in the educational process.

Under the Privacy Act, directory information is made available to anyone who requests it unless you specifically ask that this not be done. To block directory information, the request must be made in the Registrar’s office at the Downtown Milwaukee Campus. MATC considers directory information to be only the following: name; major field of study; dates of attendance; full-time/part-time status; degrees, technical diplomas or certificates awarded; and participation in officially recognized activities and sports.

Under provisions of the Privacy Act, MATC will not respond to inquiries regarding time and/or location of a student’s classes. MATC does not provide student or instructor addresses and/or telephone numbers. If you do not want any information released, please contact the Registrar’s office to complete the necessary paperwork.

Under FERPA, personally identifiable information in your education record will not be released or disclosed unless you consent to such a release. However, there are exceptions under FERPA that authorize disclosure without your consent.

One exception is disclosure to school officials with legitimate educational interests. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility. Upon request, the college discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

FERPA allows the release of education records without the consent of the student or parents to authorized representatives of the state attorney general’s office for law enforcement purposes.

FERPA permits disclosure to an alleged victim of either a crime of violence or of a nonforcible sex offense the final results of any disciplinary action taken against an alleged perpetrator. For more information, call 414-297-6870.

ACADEMIC REQUIREMENTS

Program Plan

Your Program Plan includes academic status, advisor name and location, term, program, cumulative GPA, courses taken and courses yet to take to complete your program. You may obtain your Program Plan through INFOnline at matc.edu.

Attendance

Instructors are required to take attendance. Regularity and punctuality of class attendance are expected. It is the responsibility of instructors to inform you of attendance requirements, and these requirements should be included in each course syllabus. It is your responsibility as a student to discuss absences with your instructors. When an absence occurs, the responsibility for the makeup of the work missed lies with the student.
Instructor Recommended Withdrawal
You may be dropped for absenteeism when:
- Your consecutive absences exceed the number of class meetings per week, or on the third consecutive absence when classes meet once each week.
- Your attendance is sporadic (e.g., you miss seven class periods for a class that meets three periods a week) and you are unable to make up the instruction missed.
- You fail to meet attendance requirements of licensing agencies.
- You pose a safety hazard to yourself or others because of missed instruction critical to safe class or lab performance.
- You are unable to make up instruction missed in a lab/shop class.
- You have not attended class during the first two weeks of the term.

If you have documented health or unusual personal problems affecting your attendance and your instructor agrees that you can make up the work, you may be allowed to continue and may be advised to use MATC support services. However, if your instructor determines you cannot complete the work or you will hinder instruction of other students, you will be withdrawn. To appeal, you must go to the academic dean and request reinstatement. If you are appealing, you may stay in class until the drop is official, unless your presence may cause a safety hazard to yourself or others.

Dropping or Changing Courses
The last day you may voluntarily withdraw from a course is two weeks before the last day of the semester. For summer sessions and quarter sessions, the cutoff date for withdrawal is one week before the end of the session. In extenuating circumstances, the withdrawal cutoff date may be overridden with the approval of both the instructor and the associate dean.

If you do not report for the final examination and you do not formally withdraw or arrange for an incomplete grade, you will be given a U grade for the course.

You are considered enrolled in courses until you officially withdraw. Complete a Course Change form available in the office of the academic dean or the Registration and Records office at any campus, or via INFOline at matc.edu.

Prerequisites
A prerequisite is the preparation or previous coursework considered necessary for success in a class. Students at MATC must complete the required prerequisites for a class prior to enrolling in the class.

Prerequisites include:
- Courses for which specific prerequisites have been established
- Sequential coursework in a degree program
- Courses in which an equivalent prerequisite exists at another two-year or four-year transfer college or university

Please contact your counselor, advisor or the instructor of the course you wish to enroll in if you have any questions about prerequisites. This should be done before you enroll in the course.

Grading
The grade-point average (GPA) is computed by multiplying the grade-point value of each grade by the credit value for the course. The total grade-point value is divided by the total number of credits attempted, to determine the grade-point average.

Letter grades are given the following grade-point values:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
<td>Superior</td>
</tr>
<tr>
<td>A-</td>
<td>3.75</td>
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<tr>
<td>B+</td>
<td>3.25</td>
<td>Above Average</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>B-</td>
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<td></td>
</tr>
<tr>
<td>C+</td>
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<td>Average</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>C-</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>1.25</td>
<td>Below Average</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>D-</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>0.00</td>
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</tr>
<tr>
<td>P</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>I*</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal</td>
<td></td>
</tr>
</tbody>
</table>

(Courses a student withdraws from during the refund period do not appear on transcripts)

CE Credit by exam or experiential learning
WE Work experience
AU Audit
TE Transfer Courses

* An Incomplete (I) may be given if you have satisfactorily carried a course until near the end of the semester and have made arrangements to complete the course requirements prior to the end of the following semester. An I that is not removed from your transcript within one semester will become a U for scholarship purposes.

** You may audit a course if you do not want to receive credits or an achievement grade. A student does not receive financial aid for an audited course.

If you are enrolled in Continuing Education career courses (400-series), you may be issued a certificate at the end of the course. MATC does not issue grades for Personal Enrichment (600-series, avocational) courses.
The MATC Standards of Academic Success and Financial Aid Eligibility define the requirements students must meet to maintain satisfactory academic progress and financial aid eligibility. They provide students who are having academic difficulties with a framework for knowing when assistance and specific support services are needed to ensure success in meeting their educational goals.

They also establish a formal process to identify, notify and provide assistance to students who fall below required academic standards, as well as provide the appeal process.

The Standards of Academic Success apply to all students enrolled in degree and diploma programs.

MATC calculates students’ Academic Status three times each year: after the end of the fall, spring and summer semesters. Grade changes and completion of incomplete grades will be calculated the following semester. This calculation includes:

- Semester Grade-Point Average (GPA) based on coursework completed at MATC during the semester being evaluated
- Cumulative GPA based on all coursework completed at MATC
- Semester course completion rate (percentage of credits completed out of credits attempted at MATC for the semester being evaluated)
- Cumulative course completion rate (percentage of credits completed out of all credits attempted at MATC)

After the calculation, students will be placed on good academic standing, academic warning, academic suspension, academic probation, or academic probation with monitored academic plan. These students are financial aid eligible (Title IV programs) as long as they can complete their academic program within the maximum timeframe of attempted credits.

The maximum timeframe is the period of time that is no longer than 150% of the length of the academic program. For example, the Registered Nursing associate degree program requires 70 credits to graduate. Total credits to graduate (70) multiplied by 150% is 105 in attempted credits. This means that the student must complete the program within the 105 attempted credits to be eligible to receive financial aid. The 105 attempted credits include: all credits transferred to MATC, attempted credits, and completed credits at MATC.

### Good Academic Standing

To remain in Good Academic Standing, a student must maintain:

- Minimum 2.0 Semester Grade-Point Average
- Minimum 2.0 Cumulative Grade-Point Average
- Minimum 67% Semester Course Completion Rate (U, W, and I grades are considered as credits attempted but not successfully completed)
- Minimum 67% Cumulative Course Completion Rate (U, W, and I grades are considered as credits attempted but not successfully completed)

Students may be eligible to receive Title IV and state financial aid while on good academic standing.

### Academic Warning (Financial Aid Warning)

Students who fail to meet the requirements for Good Academic Standing will have their status changed to Academic Warning and will receive written notification from the Registrar. The number of credits a student may take is not limited.

Students on Academic Warning will return to Good Academic Standing when they meet both semester and cumulative standards. If students do not meet the standards to return to good standing, they will be placed on Academic Suspension.

Students cannot be on Academic Warning consecutively (two or more semesters in a row). Students may not appeal their Academic Warning status.

### Academic Suspension (Financial Aid Suspension)

Students on Academic Warning placed on Academic Suspension will be notified by the Registrar of their change in status, the appeal procedures, and the deadlines to file an Academic Appeal for Reinstatement. All appeals must be in writing. The appeals review process includes a determination of financial aid eligibility.

The first time a student is suspended and the appeal is granted, the student will be placed on Academic Probation with or without financial aid.

If a student is suspended two or more times and the appeal is granted, the student will be placed on Academic Probation with Monitored Plan with or without financial aid.

Students whose appeals are denied will be suspended from MATC for one semester. To be considered for reinstatement and financial aid eligibility, students must file an academic appeal by the deadline established by the Academic Appeals Committee.

### Academic Probation (Financial Aid Probation)

Students on Academic Probation will be limited to a maximum of six counselor-approved credits. The program counselor will serve as the advisor to students on academic/financial aid probation.

Students will return to Good Academic Standing when they meet both the semester and the cumulative requirements.

Students cannot be on Academic Probation consecutively (two or more semesters in a row).

### Academic Probation with Monitored Academic Plan (Financial Aid Probation with Monitored Plan)

As a consequence of failing to meet the requirements to return to Good Academic Standing, students on Academic Probation will be placed on Academic Suspension. Students will need to appeal, and if the appeal process is granted, students will be placed on Academic Probation with Monitored Plan and will be required to follow an academic plan that is developed by their program counselor. The plan will be monitored each semester. Any deviation from the plan will result in suspension.

(Continues on the next page)
STANDARDS OF ACADEMIC SUCCESS AND FINANCIAL AID ELIGIBILITY

Students on this status must achieve a 2.0 semester grade-point average and a 100% semester completion rate to remain on this status and avoid returning to Academic and Financial Aid Suspension.

Students will return to Good Academic Standing when they meet both semester and cumulative requirements, as defined by the Standards for Good Academic Standing.

Graduation Requirements
To graduate from a program, you must complete all program requirements and have a cumulative grade-point average of 2.0 or higher. Associate degree programs and technical diploma programs require that the final 25% of the credits be taken at MATC. For fall graduation, you must apply on or before October 31. For spring graduation, you must apply on or before March 31.

Upon admission to the program, you will be able to print a copy of the most current curriculum requirements for graduation. Graduation requirements are subject to review annually and may be modified. Accommodation of students who are enrolled will be made as needed.

If you were not continuously enrolled in your program (excluding summers) while attending MATC, the current graduation requirements are in effect at the time of your re-enrollment or readmission into the program.

Graduate Tuition Guarantee
MATC provides a tuition fee exemption for up to six credits to an MATC graduate who is unable to obtain employment within six months of graduation, or in the event the graduate’s employer certifies that the graduate lacks entry-level job skills in the related field of study.

The guarantee states:
A graduate of an associate degree program or technical diploma program who is a resident of the state of Wisconsin is exempt from program and material fees established by the board for up to six credits within the same occupational program for which the degree or technical diploma was awarded if the graduate applies for this fee exemption within six months and any of the following conditions apply:

1. Within 90 days after his or her initial employment, the graduate’s employer certifies to the MATC District Board that the graduate lacks entry-level job skills and specifies in writing the specific areas in which the graduate’s skills are deficient.

2. The graduate certifies in writing that all of the following apply:
   - The graduate has actively sought the assistance of the MATC Student Employment Services office.

Appropriate application forms and information may be obtained through the Registrar’s office in Room S115 at the Downtown Milwaukee Campus or by calling 414-297-6824.

Student Code of Conduct
MATC may impose disciplinary sanctions for violations of the Student Code of Conduct. Violations may include, but are not limited to, the following situations:

- Conduct that damages or destroys college property, or attempts to damage or destroy college property
- Failure to comply with federal, state, county and municipal laws or ordinances while participating in MATC activities or while present on MATC property
- Conduct that obstructs or impairs, or attempts to obstruct or impair, MATC’s authorized activities, whether inside or outside a classroom, office, lecture hall, library, laboratory, auditorium, student center, or other place where an MATC-authorized activity is being held
- Conduct that endangers the safety or welfare of students, instructors, administrators, staff or visitors
- Unauthorized possession of college property or property of another member of the college community
- Making a false statement, either verbally or in writing, to any MATC employee or agent on an MATC-related matter
- Conduct that engages in racial, religious, national origin, age, sexual or handicap harassment
- Acts of academic dishonesty

Students judged to have violated the Student Code of Conduct are subject to disciplinary action, in accordance with due process procedures described in the Student Code of Conduct booklet provided by the Office of Student Life. The Student Code of Conduct is the definitive document on student conduct and the judicial system. For more information, see matc.edu or call 414-297-6870.

Academic Dishonesty
Academic dishonesty includes cheating, collaborating with another without the approval of the instructor, plagiarizing, stealing the work of another, falsifying records of work and assisting another student in any of the above. Academic dishonesty is a violation of the Student Code of Conduct.
MATC FOUNDATION SCHOLARSHIPS

The MATC Foundation, Inc., administers a wide range of funds established to support the educational and developmental goals of the college and its students. Through the generosity of its donors, the foundation awards scholarships to students in all MATC academic divisions. Additionally, the foundation raises money to support the college’s programs.

Scholarships are available to qualified applicants for educational and related needs including tuition, technical and professional equipment, textbooks, transportation, child care, continuing education and emergency grants.

Apply for scholarships at: matc.academicworks.com

The MATC Foundation utilizes a comprehensive online scholarship management program that helps match students to scholarships for which they may be qualified. The system uses information gathered directly from a student’s school records, coupled with an online scholarship application. Everything is done online, with no forms to download or print.

Not all applicants receive a scholarship. It is a competitive process, and applicants are strongly encouraged to provide thoughtful and complete answers to the essay questions on the application.

Scholarships are available only because of the generosity of our donors. Therefore, all scholarship recipients are required to write a thank you letter to the donor.

For more information about scholarships:
Visit matc.edu/foundation/scholarships.cfm.

OFFICE OF WORKFORCE AND ECONOMIC DEVELOPMENT

MATC’s Office of Workforce and Economic Development works closely with the academic areas of the college to deliver efficient and timely training to businesses, and works as a partner with the region’s workforce development system to help ensure a skilled workforce. Below is an overview of services, for details see matc.edu/OWED/index.cfm.

Business Outreach and Contracting
- Develops and implements business and industry training and technical assistance contracts to meet companies’ needs for skilled workers
- Works with governmental, nonprofit and related organizations to help meet their training needs
- Serves as a strong economic development partner to meet training needs of new companies and current firms that need training to expand and develop their workforce
- Provides training in a wide range of skill need areas and works to support business enterprise efforts
- Delivers onsite customized employee training services

Workforce Development
- Works with area workforce boards to assist with adult and youth training
- Establishes partnerships with agencies and organizations working with dislocated workers to provide training and skill development
- Establishes certificate programs to increase pathways to MATC
- Develops special projects, including those that transition high school students into college
- Implements innovative projects to address the range of foundation skills needed by the area workforce

Continuing Education
- Works with MATC academic areas to provide quality continuing education classes
- Provides access to national industry-based certifications
- Develops new, continuing education certifications including advanced, preparatory and embedded credentials
- Establishes efforts to foster business enterprise development

For more information about scholarships:
Visit matc.edu/foundation/scholarships.cfm.
Online Courses

More than 400 online courses are offered in a variety of programs including business, computer technologies, health occupations, liberal arts, and technology and applied sciences. These courses are geared toward adults who want flexibility in their schedules.

To take advantage of the convenience of online courses, you will need access to a desktop or laptop computer with an internet connection, be skilled in computer navigation and word processing, and be familiar with email and chat communication.

Keep in mind:

- Online courses require independent learners who are disciplined and responsible for turning in high-quality assignments on time.
- You must have a dedicated desktop or laptop computer and all software required for completing the course.
- Students access course content through the Blackboard learning management system at their convenience while following course due dates. Course content can include syllabi, lesson materials, group projects, interactive activities and assessments.
- Assignments and coursework are submitted via Blackboard according to designated due dates.
- Typically, online courses do not include live events where all students log in at the same time to participate. However, instructors may recommend specific times for online chats. This gives you the opportunity to communicate with the instructor and your classmates.
- Campus time may be required for meetings or testing sessions. This will be noted in the class syllabus or announcements.

If you are interested in pursuing an online course:

- Go to ecampus.matc.edu/starthere/ and review the information.
- Go to INFOOnline at matc.edu. View all online courses currently available by using the Search for Available Sections option. Add the following three items to narrow your search: Select the semester you are interested in, use the Online Only option, and add the subject of the course from the drop-down menu.
- Go to blackboard.matc.edu and click on Student Support. Review the Orientation to Online Learning in Blackboard.
- For more information: 414-297-7986 or distancelearning@matc.edu.

Programs Offered Entirely Online

Some degree, diploma and certificate programs are offered entirely online, allowing you the flexibility to complete the program without attending classes at an MATC campus; however, you may be required to take some tests or attend meetings on campus.

Programs available entirely online include:
- Accounting Associate Degree
- Associate in Arts Liberal Arts and Sciences Transfer Degree
- Associate in Arts – Accelerated Degree
- Banking and Financial Services Associate Degree
- Business Management Associate Degree
- Business Management Technical Diploma
- eBusiness Strategist Technical Diploma
- eBusiness Technology Analyst Associate Degree
- Entrepreneurship Technical Diploma
- Financial Services Technical Diploma
- Healthcare Customer Service Certificate
- IT Mobile Applications Developer Associate Degree
- IT Network Specialist — Accelerated Associate Degree
- Marketing Management — Accelerated Associate Degree
- Marketing Management Associate Degree
- Marketing Management Technical Diploma
- Marketing Specialist Technical Diploma
- Social Media Strategist Technical Diploma
- Supply Management Technical Diploma
- Transportation – Logistics Technical Diploma

Accelerated Programs Fit Your Busy Schedule

Accelerated degree programs provide the opportunity to advance in your current career or begin a new profession, even if you are working full time. Most accelerated courses run for eight weeks, which is half a traditional semester. Generally, the accelerated programs have one evening class per week and the classes meet year-round, with limited breaks. The format allows for more independent study and less time spent in a classroom.

- Designed for working adults, the accelerated programs enable you to complete the core technical classes of an associate degree with one evening class per week; some accelerated programs are all online (General Studies courses may require traditional classroom time)
- You will be part of a supportive group of students who complete the same classes together, sharing expertise and experiences
- Many online classes are available
- The program can transfer to one or more four-year colleges/universities
- All programs are financial aid eligible

MATC Offers These Accelerated Degree Programs

In the School of Business:
- Administrative Professional
- IT Information Systems Security Specialist
- IT Network Specialist
- Legal Administrative Professional
- Marketing Management Online
- Supervisory Management

In the School of Liberal Arts and Sciences:
- Associate in Arts Online

For curriculum and additional information, see the catalog page for the specific program.
ACCREDITATION INFORMATION

MATC is accredited by the Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1411; 800-621-7440.

The college is also a member of the American Association of Community Colleges.

Specific MATC academic programs are accredited, approved and/or governed by the following organizations and agencies.

**Automotive Maintenance Technician**
National Automotive Technicians Education Foundation
101 Blue Seal Drive, Suite 101, Leesburg, VA 20175; 703-669-6650, fax: 703-669-6125

**Automotive Technology**
National Automotive Technicians Education Foundation
101 Blue Seal Drive, Suite 101, Leesburg, VA 20175; 703-669-6650, fax: 703-669-6125

**Aviation Technician – Airframe**
Federal Aviation Administration
4915 South Howell Avenue, Milwaukee, WI 53154; 414-747-5531

**Aviation Technician – Powerplant**
Federal Aviation Administration
4915 South Howell Avenue, Milwaukee, WI 53154; 414-747-5531

**Baking Production**
Retail Bakers’ Association
1429 Park Center Drive, Laurel, MD 20707-5261; 301-725-2149

**Barber/Cosmetologist**
Wisconsin Department of Safety and Professional Services for Barber/Cosmetology
1400 East Washington Avenue, P.O. Box 8935, Madison, WI 53708; 608-266-5441

**Cardiovascular Technology**
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
1361 Park Street, Clearwater, FL 33756; 727-210-2350

Accreditation is based upon a recommendation by the Joint Review Committee (JRC-CVT). Both invasive and echocardiography portions are accredited.

**Civil Engineering Technology**
Land Surveyor Section of the Wisconsin Examining Board of Architects, Professional Engineers, Designers, and Land Surveyors
1400 East Washington Avenue, P.O. Box 8935, Madison, WI 53708; 608-266-2112; web@drl.state.wi.us

**Clinical Laboratory Technician**
National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Rd., Suite 720, Rosemont, IL 60018; 312-714-8880

**Culinary Arts**
American Culinary Federation Educational Institute Accrediting Commission
10 San Bartola Drive, St. Augustine, FL 32086; 800-624-9458

**Culinary (Cook) Apprentice Program**
American Culinary Federation Educational Institute Accrediting Commission
10 San Bartola Drive, St. Augustine, FL 32086; 800-624-9458

**Dental Hygiene**
The Commission on Dental Accreditation
211 East Chicago Avenue, Chicago, IL 60611; 312-440-2718

**Dietetic Technician**
Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics
120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995; 312-899-0040

**Funeral Service**
American Board of Funeral Service Education
3414 Ashland Ave., Suite G, St. Joseph, MO 64506; 816-233-3747

**Land Surveying Certificate**
Land Surveyor Section of the Wisconsin Examining Board of Architects, Professional Engineers, Designers, and Land Surveyors
1400 East Washington Avenue, P.O. Box 8935, Madison, WI 53708; 608-266-2112

**Legal Administrative Professional**
Approved by the American Bar Association
750 North Lakeshore Drive, Chicago, IL 60611; 312-988-5616; abanet.org/legalservices/paralegals/directory/wi.html

**Medical Assistant**
Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of Medical Assisting Education Review Board (MAERB). Commission on Accreditation of Allied Health Education Programs
1361 Park Street, Clearwater, FL 33756; 727-210-2350

**Occupational Therapy Assistant (OTA)**
Accreditation Council for Occupational Therapy Education (ACOTE)
c/o Accreditation Department, American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449; 301-652-2682

**Paralegal**
Approved by the American Bar Association
750 North Lakeshore Drive, Chicago, IL 60611; 312-988-5616; abanet.org/legalservices/paralegals/directory/wi.html

**Pharmacy Technician**
American Society of Health-System Pharmacists
7272 Wisconsin Avenue, Bethesda, MD 20814; 301-657-3000; www.ashp.org

**Phlebotomy**
American Board of Phlebotomy Certification
5600 N. River Rd., Suite 720, Rosemont, IL 60018; 312-714-8880

**Physical Therapist Assistant**
Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association
1111 North Fairfax St., Alexandria, VA 22314-1488; 703-706-3245; capteonline.org

**Practical Nursing**
Commission for Education in Nursing
3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326

**Practical Nursing – RN Educational Progression**
Commission for Education in Nursing
3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326

**Radiography**
Joint Review Committee on Education in Radiologic Technology
20 North Wacker Drive, Suite 2850, Chicago, IL 60606-3182; 312-704-5300; mail@jrcert.org

**Real Estate**
Wisconsin Department of Safety and Professional Services/Real Estate Bureau
P.O. Box 8935, Madison, WI 53708-8935; 608-266-5511

**Registered Nursing**
Accreditation Commission for Education in Nursing
3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326

**Respiratory Therapy**
COARC
1248 Harwood Rd., Bedford, TX 76021; 817-283-2635
Accreditation is based upon the recommendation of the Commission on Accreditation for Respiratory Care (COARC).

**Surgical Technology**
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
1361 Park St., Clearwater, FL 33756; 727-210-2350
Accreditation is based upon the recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting.

For more information: matc.edu or 414-297-MATC. Page 24
To prepare for a rewarding career that fits your interests, the School of Business offers a broad range of program areas, including eBusiness, cosmetology, culinary arts, IT, marketing, food science, water technology and logistics. Accelerated programs are designed to accommodate your busy schedule.

Start your four-year degree here. Associate degree program credits can transfer to one or more four-year institutions where you can pursue a bachelor’s degree. See details at matc.edu. For class times and locations or to register online, visit INFOonline at matc.edu.

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Information Security Fundamentals
Infrastructure Security
IT Security Auditing
Nail Technician
Paralegal
Supervisory Management
System Administration and Security
Water Technician

NEW PROGRAMS UNDER DEVELOPMENT: The following programs are planned to debut in the 2014-15 school year. Check matc.edu for information.

Program Learning Outcomes

Employers expect graduates to:

- Process financial transactions throughout the accounting cycle
- Analyze financial and business information to support planning and decision-making
- Perform payroll, individual tax and organizational tax preparation, reporting and analysis tasks
- Perform cost accounting preparation, reporting and analysis tasks

Online Option

This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook

Qualified accounting applicants continue to be in demand. Employment opportunities exist in banking, business and industry, government offices and nonprofit organizations.

Program Learning Outcomes

Employers expect graduates to:

- Process financial transactions throughout the accounting cycle
- Analyze financial and business information to support planning and decision-making
- Perform payroll, individual tax and organizational tax preparation, reporting and analysis tasks
- Perform cost accounting preparation, reporting and analysis tasks

Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

Banking and Financial Services, Business Management, Marketing Management, Supervisory Management – Accelerated

TECHNICAL STUDIES

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<td>ACCTG-111</td>
<td>Accounting 1</td>
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<td>BADM-165</td>
<td>Legal Environment of Business</td>
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<td>ACCTG-113</td>
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<td>ACCTG-123</td>
<td>Individual Income Tax</td>
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<td>ACCTG-125</td>
<td>Cost Accounting ‡</td>
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<td>ACCTG-130</td>
<td>Computerized Accounting ‡</td>
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<td>Intermediate Accounting ‡</td>
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<td>Accounting Software Applications ‡</td>
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<td>ACCTG-126</td>
<td>Accounting for Managers ‡</td>
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<td>Payroll Accounting</td>
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<td>ACCTG-124</td>
<td>Business Income Taxes ‡</td>
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<td>ACCTG-140</td>
<td>Accounting for Governmental and Nonprofit Entities ‡</td>
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<tr>
<td>ACCTG-150</td>
<td>Accounting Practice With a Systems Approach ‡</td>
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GENERAL STUDIES

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
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<td>ENG-151</td>
<td>Communication Skills ‡</td>
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<td>MATH-107</td>
<td>College Mathematics ‡</td>
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</tr>
<tr>
<td>NATSCI-167</td>
<td>Science of Technology</td>
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<td>PSYCH-199</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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</table>

ELECTIVES: THREE CREDITS NEEDED

TOTAL CREDITS: 70

# Prerequisite required.

Program curriculum requirements are subject to change.

() = Semester order for full-time students.

Possible Careers: Accounting Assistant, Account Specialist, Auditing Clerk, Banking/Finance, Tax Preparer
As reliance on technology continues to expand in offices, core responsibilities for administrative professionals continue to grow, and this Associate in Applied Science degree program prepares you for success. Administrative professionals operate and troubleshoot new office technologies, provide training and orientation for new staff and conduct online research. Duties include performing and coordinating administrative activities, and storing, retrieving, and integrating information for dissemination to staff and clients. This program requires an internship. Some courses are offered at the West Allis Campus.

### Accelerated Option
Attend classes one evening each week; see the Administrative Professional – Accelerated page for details.

### Dual Degree Option
Take extra courses to also earn the Legal Administrative Professional – Accelerated degree. See your program advisor for details.

### Career Outlook
The employment outlook is very strong. Opportunities are best for candidates having extensive knowledge of computer software applications.

### Added Career Value
Earn the Office Technology Assistant diploma on your way to completing this degree.

### Program Learning Outcomes
- Apply technology skills to business and administrative tasks
- Demonstrate effective office/business communication
- Manage administrative projects
- Perform routine administrative office procedures
- Key at a rate of 55 wpm with 95% accuracy
- Maintain business relationships
- Model professionalism in office/business environment

### Admission Requirements
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

#### Start Dates: August/January

### TECHNICAL STUDIES

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>OFTECH-101</td>
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<td>OFTECH-122</td>
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<tr>
<td>OFTECH-184</td>
<td>Microsoft Office: Word, Excel, Access, PowerPoint</td>
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<td>RBUS-111</td>
<td>Business Communications</td>
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<td>Administrative Office Procedures 1</td>
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<td>OFTECH-185</td>
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<td>ENG-152</td>
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<tr>
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<td>NATSCI-169</td>
<td>Energy in Nature, Technology and Society</td>
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#### SUGGESTED ELECTIVES: THREE CREDITS NEEDED

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<tr>
<td>OFTECH-156</td>
<td>Keyboarding Skill Development 3</td>
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</table>

**TOTAL CREDITS:** 68

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### Possible Careers:
administrative assistant, administrative support, information manager
Administrative Professional – Accelerated

ASSOCIATE DEGREE  Program Code: 10-106-6.AA  Oak Creek Campus

This Accelerated program allows you to earn your Administrative Professional Associate in Applied Science degree in as few as 16 months. Classes are offered one evening each week, year-round. To earn the degree, General Studies courses must be completed in addition to the Accelerated schedule of Technical Studies courses.

The core responsibilities for administrative assistants include performing and coordinating an office’s administrative activities and storing, retrieving and integrating information. As reliance on technology continues to expand, administrative assistants provide training and orientation for new staff, conduct online research, and operate and troubleshoot office technologies. The Administrative Professional degree program is also available in a non-accelerated format.

Dual Degree Option
Take extra courses to earn the Legal Administrative Professional – Accelerated degree; see advisor for details.

Career Outlook
The employment outlook is very strong. Opportunities are best for candidates having extensive knowledge of computer software applications.

Added Career Value
Earn the Office Technology Assistant diploma on your way to completing this degree.

Program Learning Outcomes
• Apply technology skills to business and administrative tasks
• Demonstrate effective office/business communication
• Manage administrative projects
• Perform routine administrative office procedures
• Key at a rate of 55 wpm with 95% accuracy
• Maintain business relationships
• Model professionalism in office/business environment

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Two years of work experience (full-time or part-time)

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

TECHNICAL STUDIES

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<td>Proofreading/Editing Administration ‡</td>
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<td>ENG-152</td>
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<td>NATSCI-167</td>
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<td>NATSCI-169</td>
<td>Energy in Nature, Technology and Society ^</td>
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<td></td>
<td>(or) Any 200-series NATSCI course</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations ^</td>
<td>3</td>
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<td></td>
<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society ^</td>
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<td>(or) Any 200-series SOCSCI or HIST course</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED ^..........................3

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<td>RBUS-141</td>
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<td>Medical Office Terminology 1</td>
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<tr>
<td>OFTECH-156</td>
<td>Keyboarding Skill Development 3 ‡</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 68

^ Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Office Technology Assistant diploma program.
() = Sequence for Accelerated students.

Possible Careers: Administrative Assistant, Administrative Support, Information Manager
Learn the techniques of producing artisan breads, classic pastries, pies, tarts and petits fours, celebration cakes and showpieces through this Associate in Applied Science degree program. Students develop professionalism and proficiency in preparation procedures, production methods and presentation techniques, as well as cost control and food safety. You will learn firsthand how to run a bakery café operation from the front and back of the house, and also prepare the breads, soups, salads, sandwiches, plated desserts, chocolates and confections for the MATC Baking and Pastry Arts student-operated 6th Street Café.

Career Outlook
Throughout the United States, employment in the food preparation sector is expected to increase. Highly skilled bakers should be especially in demand because of the growing demand for specialty products.

Added Career Value
Earn the Baking Production technical diploma while completing this degree.

Program Learning Outcomes
Employers expect graduates to possess skills and knowledge in:
• Safe use of hand and power tools in the bakery
• Scaling ingredients
• Mixing and handling batters and doughs
• Preparation of fancy breads, layer cakes, tortes, cookies
• Converting standard recipes and portion control formulas
• Applying icing to baked products

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Baking Production, Culinary Arts, Culinary Management, Hotel/Hospitality Management, Meeting and Event Management

Possible Careers:
Pastry Cook, Pantry Chef, Sous Chef, Executive Pastry Chef, Chocolatier
Baking Production

TECHNICAL DIPLOMA  Program Code: 31-314-2  Downtown Milwaukee Campus

Learn to produce and prepare pies, cookies, cakes, breads, rolls, desserts and other baked goods in a variety of baking environments, such as independent and in-store bakeries as well as large commercial bakeries, restaurants and hotels. Reading ability and basic math skills are important in this program. Other aptitudes and attributes that will contribute to your success include full use of hands, arms and fingers; an ability to stand for long periods of time; a willingness to assume responsibility for quality of work; and the ability to work well with others.

Career Outlook
Graduates typically find employment in a bakery environment. Employers will expect graduates to safely use equipment, to mix batters and doughs, and to skillfully prepare and decorate baked products.

Added Career Value
After earning this diploma, the credits can be applied to completing the Baking and Pastry Arts associate degree.

Program Learning Outcomes
Employers expect graduates to possess skills and knowledge in:
• Safe use of hand and power tools in the bakery
• Scaling ingredients
• Mixing and handling batters and doughs
• Applying icing to baked products
• Preparation of fancy breads, dinner rolls, layer cakes, tortes, petits fours and cookies
• Converting standard recipes and portion control formulas

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Baking and Pastry Arts, Culinary Arts, Culinary Assistant, Hotel/Hospitality Management, Food Service Assistant

SIXTEEN-WEEK TERMS

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<td>Healthy and Natural Baking</td>
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<td>BAKING-122</td>
<td>Baking Principles and Ingredient Functions</td>
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<td>BAKING-123</td>
<td>Cake Decorating, Icing and Pastry Bags</td>
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<td>BAKING-119</td>
<td>Retail Baking Operations</td>
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<td>BAKING-130</td>
<td>Field Experience in Baking and Pastry Arts</td>
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<td>Specialty Baking &amp; Pastry Techniques 1</td>
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<td>NATSCI-172</td>
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<tr>
<td>BAKING-124</td>
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</table>

TOTAL CREDITS: 37

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Baker, Bakery Manager, Bakery Owner/Operator, Cake Decorator, Commercial Baker, Scratch Baker
Banking and Financial Services

ASSOCIATE DEGREE  Program Code: 10-114-3  Downtown Milwaukee and West Allis campuses; also offered entirely online

Students learn accounting and financial principles for employment areas including banks, credit unions, insurance and consumer finance companies, and corporate finance departments. Graduates of this Associate in Applied Science degree program possess the skills and knowledge necessary for entry-level employment, or articulation to a four-year degree program.

Online Option
This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook
Graduates will have a solid foundation for a range of career opportunities within the industry, including personal banker, credit specialist, insurance sales agent and loan specialist.

Added Career Value
Earn the Financial Services diploma on your way to completing this associate degree.

Program Learning Outcomes
Employers will expect program graduates to:
• Exhibit knowledge and understanding of banking and financial transactions
• Demonstrate knowledge and understanding of accounting concepts
• Apply selling skills
• Demonstrate appropriate application of financial tools
• Employ problem-solving and decision-making skills

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Entrepreneurship, Financial Services, Marketing Management

Technical Studies Credits

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<td>Contemporary American Society</td>
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</tr>
</tbody>
</table>

TOTAL CREDITS:  68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Financial Services diploma program.
( ) = Semester order for full-time students.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
West Allis Campus – 414-456-5500

Potential Careers: Financial Specialist, Collections Specialist, Credit Specialist, Loan Specialist, Personal Banker, Insurance Sales Agent
Barber

TECHNICAL DIPLOMA Program Code: 31-502-5 Downtown Milwaukee Campus

In compliance with the Wisconsin Department of Safety and Professional Services, this program prepares you to work in the barbering profession. You will learn shampooing, trimming, cutting and hair styling techniques, as well as shaving, beard trimming, hair coloring and chemical texture services. Upon completion of the 1,000-hour diploma program, you become eligible to take the state board licensing exam. MATC’s Barber program can be completed in just two semesters. Keys to your success in the Barber program are good interpersonal skills; effective speaking, listening and time management skills; and manual dexterity. An artistic sense and the ability to visualize styles are important. You must be able to work efficiently under pressure, and sell products and services.

For information about a Barber apprenticeship, contact the apprentice coordinator at 414-297-8054.

Career Outlook
Employment prospects for licensed barbers are excellent. Many barbers are self-employed, either owning their business or leasing booth space in a salon or barbershop.

Program Learning Outcomes
Employers will expect you, as a new licensee, to:
• Perform hair/scalp cleansing and conditioning services
• Perform haircutting and hairstyling services
• Perform shaving, lining and beard trimming services
• Perform chemical texture services
• Perform hair coloring and lightening services
• Provide male facials
• Adhere to professional attitudes
• Adhere to Wisconsin state statutes

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Cosmetology, Barber Apprenticeship, Barber/Cosmetologist Manager Certificate, Barber/Cosmetologist Instructor Certificate

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

EIGHT-WEEK TERMS Credits
BARCOS-300 Shampoo and Scalp Treatments .................................... 2
BARCOS-336 Barber Theory 1 .............................................................. 1
BARCOS-337 Barber Haircut 1 ............................................................ 2
BARCOS-338 Barber Chemical Services 1 ............................................ 1
BARCOS-341 Shaving/Facials ............................................................... 1
BARCOS-324 Business Skills for Barbers/Cosmetologists .................... 1
BARCOS-344 Barber Theory 2 .............................................................. 1
BARCOS-345 Barber Haircut 2 ‡ ........................................................... 2
BARCOS-346 Barber Chemical Services 2 ............................................ 1
BARCOS-347 Barber Hairstyling 1 ........................................................ 1
BARCOS-348 Introduction to Client Services ‡ .................................... 1
BARCOS-319 Natural Hair Care and Braiding .................................... 1
BARCOS-318 Lightening and Wig Theory ............................................ 1
BARCOS-320 Client Services 1 ‡ ........................................................... 1
BARCOS-349 Barber Haircut 3 ‡ ........................................................... 1
BARCOS-350 Barber Chemical Services 3 ‡ ....................................... 2
BARCOS-351 Barber Hairstyling 2 ‡ ..................................................... 1
BARCOS-303 Men’s Haircut 2 ............................................................. 2
BARCOS-330 Business Management Skills for Barbers/Cosmetologists .......... 2
BARCOS-323 Client Services 2 ‡ ........................................................... 1
BARCOS-352 Barber State Board Review ‡ ......................................... 2

TOTAL CREDITS: 29

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Barber, Barbershop Owner, Stylist, Salon Owner, Barber Educator/Instructor, Barber Manager, Platform Artist, Product Representative
Bilingual Office Assistant

TECHNICAL DIPLOMA  Program Code: 31-106-6  West Allis Campus

Students fluent in English and a second language will be prepared for bilingual office positions after completing this two-semester program. Students will use Microsoft Word, Excel, Access and PowerPoint software to produce documents in both languages; and will use the internet, videoconferencing and other technologies for international business communications. All courses, except foreign language instruction, are taught in English.

Career Outlook
There is a strong need for bilingual office workers. Government agencies and educational institutions also actively recruit bilingual office assistants to serve an increasingly diverse community.

Program Learning Outcomes
Employers will expect graduates to:
• Demonstrate fluency in English and a second language
• Demonstrate proficiency in MS Word, Excel, Access and PowerPoint in both languages
• Compose and produce documents in both languages
• Demonstrate proficiency in using electronic office equipment
• Key at least 45 words per minute
• Coordinate internal and external communications
• Manage computer files
• Perform routine maintenance on personal computers
• Address customer service needs
• Access organizational resources
• Manage filing systems
• Maintain supply inventories
• Work in a team
• Pace work to meet deadlines
• Apply decision-making and problem-solving skills
• Demonstrate MATC core abilities

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

SIXTEEN-WEEK TERMS                     Credits

ENG-151  Communication Skills 1 ‡ ................................................ 3
FLANG-123  Intermediate Spanish* ‡ ........................................................................ 3
  (or) FLANG-213 Spanish 3 ‡
OFTECH-103  Keyboard and Keypad........................................................................... 1
OFTECH-101  Windows 7 and Word 2010 Keyboarding Shortcuts................. 3
OFTECH-119  Information Management......................................................................... 3
OFTECH-136  Keyboarding Skill Development 1 ‡ ...................................................... 1
FLANG-117  Conversational Spanish for Service Occupations* ‡ .................. 3
OFTECH-133  Business Document Production 1 ‡ ................................................. 3
OFTECH-102  Office Technologies ‡ ........................................................................ 3
OFTECH-186  MS Office for Bilingual Users ................................................................. 3
RBUS-180  Business Career Planning......................................................................... 1

TOTAL CREDITS:  27

‡ Prerequisite required.
Program curriculum requirements are subject to change.
* Another foreign language course may be substituted for this course.
The student must earn a minimum 2.5 GPA in foreign language.

Start Dates: August/January/March

For Information
West Allis Campus – 414-456-5500

Possible Careers: Bilingual Clerk Typist, Bilingual Customer Service, Bilingual Receptionist, Bilingual Office Assistant, International Assistant
Business Management

ASSOCIATE DEGREE Program Code: 10-102-3 All campuses; also offered entirely online

Attain a strong foundation in a range of areas including supervision, risk management, business law, office technologies, human resources and marketing. In this Associate in Applied Science degree program, students select one of two groups of courses: Career Emphasis or Four-Year College Transfer Emphasis.

Online Option
The Career Emphasis program may be taken in class or entirely online; on-campus testing or meetings may be required.

Career Outlook
Graduates locate employment in a wide cross-section of firms, such as large industrial corporations to small service-oriented companies, as well as operating their own businesses.

Added Career Value
Earn the Business Management diploma on your way to completing this degree.

Program Learning Outcomes
Employers will expect program graduates to:
• Plan the operations of a business across functional areas
• Organize resources to achieve the goals of the organization
• Direct individuals and/or processes to meet organizational goals
• Control business processes

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Banking and Financial Services, Entrepreneurship, Hotel/Hospitality Management, Meeting and Event Management, Supervisory Management – Accelerated

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

Possible Careers: Assistant Manager, Management Trainee, Supervisor

Milwaukee Area Technical College
School of BUSINESS

TECHNICAL STUDIES Credits
(1) BADM-134 Business Organization and Management ^ ............. 3
(1) COMPSW-106 Introduction to MS Office ^ ............................... 3
(1) BADM-165 Legal Environment of Business ^ ....................... 3
(2) BADM-192 Risk Management and Insurance ^ .................. 3
(3) BADM-104 Business Statistics ‡ ....................................... 3
(4) BADM-126 Business Finance ‡ ....................................... 3
(4) BADM-155 Management Principles ‡ ^ .............................. 3

CHOOSE ONE EMPHASIS:
CAREER EMPHASIS (10-102-3.A)
(1) ACCTG-110 Financial Accounting ^ .................................... 3
(or) ACCTG-111 Accounting 1 and ACCTG-113 Accounting 2
(2) MKTG-102 Marketing Principles ........................................ 3
(2) RBUS-180 Business Career Planning .................................. 1
(2) RBUS-102 Mathematics of Business .................................. 3
(3) RBUS-111 Business Communications ‡ ......................... 3
(or) ENG-208 Technical Communications
(or) ENG-202 English 2
(3) HRMG-193 Human Resources Management ...................... 3
(4) BADM-145 Small Business Management ‡ ^ ...................... 3

FOUR-YEAR COLLEGE TRANSFER EMPHASIS (10-102-3.B)
(1) ACCTG-111 Accounting 1 .................................................. 4
(2) ECON-202 Macroeconomics ............................................ 3
(3) ACCTG-113 Accounting 2 .................................................. 4
(3) ENG-208 Technical Communication ................................ 3
(3) SPEECH-201 Elements of Speech .................................... 3
(4) ACCTG-125 Cost Accounting ............................................ 3

GENERAL STUDIES
ECON-195 Economics ......................................................... 3
(or) Any 200-series ECON course*
ENG-151 Communication Skills 1 ‡ ^ .................................. 3
(8) ENG-152 Communication Skills 2 ‡ .................................. 3
(or) ENG-201 & ENG-202 or any 200-series ENG or SPEECH course*
MATH-107 College Mathematics ........................................... 3
(or) Any 200-series MATH course*
NATSCI-149 Introduction to Geographical Information Systems ‡ 3
(or) Any 200-series NATSCI course*
PSYCH-199 Psychology of Human Relations .......................... 3
(or) Any 200-series PSYCH course*
SOCSCI-197 Contemporary American Society ......................... 3
(or) Any 200-series SOCSCI or HIST course*

SUGGESTED ELECTIVES: SIX CREDITS NEEDED ...................... 6
FIN-120 Financial Institutions and Markets
FIN-122 Investment Principles

TOTAL CREDITS: 67

^ Counts toward Business Management diploma.
* Students seeking transfer to a four-year college should take 200-level courses.
(1) = Semester order for full-time students.

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Program Learning Outcomes

Employers will expect graduates to:
• Plan the operations of a business across functional areas
• Organize resources to achieve the goals of the organization
• Direct individuals and/or processes to meet organizational goals
• Control business processes

Admission Requirements

• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

Entrepreneurship, Hotel/Hospitality Management, Marketing Management, Supervisory Management – Accelerated

Online Option

This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook

Graduates possess skills to begin a career in many business settings, from large industrial companies to small service-oriented franchises. Self-employed business owners also will profit from this program.

Added Career Value

After earning this diploma, the credits can be applied toward completing the Business Management degree.

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>BADM-134</td>
<td>Business Organization and Management</td>
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<td>COMPSW-106</td>
<td>Introduction to MS Office</td>
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<td>BADM-165</td>
<td>Legal Environment of Business</td>
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<td>ENG-151</td>
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<td>(or) ENG-201 English 1</td>
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<td>BADM-192</td>
<td>Risk Management and Insurance</td>
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<td>ACCTG-110</td>
<td>Financial Accounting</td>
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<td>BADM-155</td>
<td>Management Principles ‡</td>
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<tr>
<td>BADM-145</td>
<td>Small Business Management</td>
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TOTAL CREDITS: 24

‡ Prerequisite required.
Program curriculum requirements are subject to change.

For Information

Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

Possible Careers: Assistant Manager, Coordinator, Entrepreneur, Management Trainee, Manager, Supervisor, Team Leader
Cosmetology

TECHNICAL DIPLOMA Program Code: 31-502-1 Downtown Milwaukee Campus

This program, in compliance with the Wisconsin Department of Safety and Professional Services, prepares you to work in the cosmetology profession. The program can be completed in one year to 18 months, including attendance in summer. Students complete an externship course for skill development at a professional, licensed host salon. Upon successful program completion, you become eligible to take the state board licensing examination. Keys to your success in the program are the ability to get along with people, effective speaking and listening skills, organization and time management skills, and good manual dexterity. An artistic sense and the ability to visualize styles are important. You must be able to work efficiently under pressure, and sell products and services. Note: In addition to tuition and textbooks, students must purchase a tool/equipment kit, approximately $1,500.

Career Outlook
Employment prospects for cosmetologists are excellent. With additional training and licensing, you could become a salon manager, cosmetology instructor or guest artist.

Program Learning Outcomes
Employers will expect you, as a new licensee, to be able to:
- Perform hair/scalp cleansing and conditioning services
- Perform haircutting, hair shaping and hairstyling services
- Perform chemical hair texturizing, hair coloring and lightening services
- Perform natural hair care services
- Perform skin care services
- Perform nail services
- Adhere to professional standards
- Demonstrate time management and organizational skills

Admission Requirements
- High school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Barber, Barber/Cosmetologist Manager Certificate, Barber/Cosmetologist Instructor Certificate, Cosmetology Apprenticeship

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

EIGHT-WEEK TERMS Credits
BARCOS-300 Shampoo and Scalp Treatments † ............................... 2
BARCOS-302 Women’s Haircut 1 † ................................................. 2
BARCOS-304 Permanent Wave † .................................................... 2
BARCOS-306 Facial Massage and Cosmetic Art † ............................ 2
BARCOS-314 Hairstyle 1 † ............................................................... 2
BARCOS-301 Men’s Haircut 1 † ....................................................... 2
BARCOS-309 Chemical Relaxing † ............................................... 2
BARCOS-310 Hair Tinting † ......................................................... 2
BARCOS-315 Hairstyle 2 † ............................................................... 2
BARCOS-324 Business Skills for Barber/Cosmetologists ......................... 1
BARCOS-305 Women’s Haircut 2 † ............................................... 2
BARCOS-312 Advanced Color † .................................................... 1
BARCOS-318 Barber/Cosmetology Lightening/Wig Theory † ............... 1
BARCOS-320 Client Services 1 † ..................................................... 1
BARCOS-329 Basic Artificial Nail Concepts † .................................... 1
BARCOS-329 Natural Haircare and Braiding † .................................. 1
BARCOS-321 Hair Extensions † ..................................................... 1
BARCOS-303 Men’s Haircut 2 † ..................................................... 2
BARCOS-313 Hair Color Correction † ............................................. 1
BARCOS-317 Barber/Cosmetology Theory ..................................... 1
BARCOS-323 Client Services 2 † ..................................................... 1
BARCOS-326 Client Services 3 † ..................................................... 1
BARCOS-330 Business Management Skills for Barber/Cosmetologists .......................... 2
BARCOS-308 Nail Services † ......................................................... 2
BARCOS-316 Advanced Style † ...................................................... 1
BARCOS-327 Client Services 4 † ..................................................... 1
BARCOS-328 Client Services 5 † ..................................................... 1
BARCOS-335 State Board Review † ................................................ 3
BARCOS-339 Client Services Externship † ....................................... 2
(Any Quarter)
MATH-304 Math Principles 1 † .................................................. 1
SOCSCI-330 Applied Economics and Human Relations ....................... 1

TOTAL CREDITS: 47

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Culinary Arts

ASSOCIATE DEGREE  Program Code: 10-316-1  Downtown Milwaukee Campus

This Associate in Applied Science degree program fuses the art and science of cooking with an introduction to critical business management. Focus is on culinary training, leadership skills and the collaborative attitude needed to excel in the food service industry. Students learn classical techniques, as well as develop critical thinking skills within an integrated front-of-the-house curriculum. You will learn firsthand through the MATC student-operated Cuisine Restaurant. Students will need reading aptitude and basic math problem-solving skills. A high level of physical stamina, an ability to relate to others and the ability to work rapidly for extended periods of time are important. Students completing this program can earn the Culinary Management associate degree by taking two additional semesters. This program is accredited by the American Culinary Federation Educational Institute Accrediting Commission.

Career Outlook
Graduates are highly employable as cooks (sauté, banquet, catering, broiler, fry, dessert/pastry, garde manger/deli), bakers, and management trainees.

Added Career Value
Earn the Culinary Assistant technical diploma while completing this associate degree.

Program Learning Outcomes
Graduates will possess skills and knowledge in:
• Safe use of tools for food service and sanitation
• Menu planning and nutrition
• Conversion of standard recipes and portion control
• Preparation and identification of standards for a finished product
• Directing others in job performance
• Purchasing food service products
• Work simplification techniques
• Most areas of food production
• Meeting and dealing effectively with people

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Start Dates: July/August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>(1) CULART-121</td>
<td>Mise en Place/Culinary Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>(1) CULMG-102</td>
<td>Food and Beverage Procurement</td>
<td>2</td>
</tr>
<tr>
<td>(1) CULART-119</td>
<td>Culinary Science</td>
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<tr>
<td>(1) CULMG-112</td>
<td>Food Service Sanitation</td>
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<tr>
<td>(2) CULMG-105</td>
<td>Culinary Math and Cost Control</td>
<td>3</td>
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<tr>
<td>(2) CULART-123</td>
<td>Vegetables, Starches and Grains</td>
<td>2</td>
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<tr>
<td>(2) CULART-122</td>
<td>Stocks, Soups and Sauces</td>
<td>1</td>
</tr>
<tr>
<td>(2) CULART-124</td>
<td>Meat Identification and Fabrications (Extended Lab)</td>
<td>1</td>
</tr>
<tr>
<td>(2) CULART-126</td>
<td>Seafood/Shelfish Cookery</td>
<td>1</td>
</tr>
<tr>
<td>(2) CULART-127</td>
<td>Center of the Plate – Meat Cookery</td>
<td>2</td>
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<tr>
<td>(2) CULART-107</td>
<td>Field Experience in Food Service/Hospitality</td>
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<td>(3) CULART-115</td>
<td>Culinary Arts Practicum</td>
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<tr>
<td>(3) CULMG-101</td>
<td>Menu Planning and Design</td>
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<td>(3) BAKING-135</td>
<td>Baking for Culinarians</td>
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<td>(3) CULART-110</td>
<td>Garde Manger</td>
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<td>(3) CULART-136</td>
<td>Asian Cuisine</td>
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<td>(3) CULART-137</td>
<td>South and Central American Cuisine</td>
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<td>(4) CULART-108</td>
<td>Specialty Foods</td>
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<td>(4) CULART-138</td>
<td>Restaurant Operations</td>
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<td>(4) CULART-105</td>
<td>Dining Room Service</td>
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<td>(4) HOTEL-133</td>
<td>Supervision in the Hospitality Industry</td>
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GENERAL STUDIES

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<tr>
<td>ECON-195</td>
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<tr>
<td>ENG-151</td>
<td>Communication Skills 1</td>
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<td>(or) ENG-152</td>
<td>Communication Skills 2</td>
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<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<td>MATH-107</td>
<td>College Mathematics</td>
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<tr>
<td>NATSCI-172</td>
<td>Basic Nutritional Science</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
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<td>(or) Any 200-series SOCSCI or HIST course</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CULMG-103</td>
<td>Bar Service</td>
</tr>
<tr>
<td>BAKING-111</td>
<td>Advanced Pastry Arts – Part 1</td>
</tr>
<tr>
<td>BAKING-112</td>
<td>Advanced Pastry Arts – Part 2</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 69

† Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Culinary Assistant diploma program.
( ) = Semester order for full-time students.

Possible Careers: Sous Chef, Line Chef, Caterer, Food Service Manager
Program Learning Outcomes
Employers expect graduates to possess skills and knowledge in:

• Safe use of hand and power tools in food service safety and sanitation

• Menu planning

• Conversion of standard recipes and portion control

• Most areas of food production

• Directing others in job performance

• Work simplification methods

• Meeting and dealing effectively with people

Admission Requirements
• A high school diploma or GED

• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Culinary Arts, Baking and Pastry Arts, Baking Production, Dietetic Technician, Food Service Team Leader

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CULMGT-112</td>
<td>Food Service Sanitation</td>
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<tr>
<td>CULMGT-105</td>
<td>Culinary Math and Cost Control</td>
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<tr>
<td>CULART-121</td>
<td>Mise en Place/Culinary Fundamentals</td>
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<tr>
<td>CULART-123</td>
<td>Vegetables, Starches and Grains</td>
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<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<td>CULART-112</td>
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<td>Stocks, Soups and Sauces</td>
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<td>Meat Identification and Fabrications (Extended Lab)</td>
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<td>MATH-107</td>
<td>College Mathematics ‡</td>
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<td>Seafood/Shellfish Cookery</td>
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<tr>
<td>CULART-127</td>
<td>Center of the Plate – Meat Cookery</td>
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TOTAL CREDITS: 27

‡ Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Food Service Assistant diploma program.

Possible Careers: Cook, Assistant Cook, Short-Order Cook, Line Cook, Deli Cook, Assistant Baker, Pantry Person, Corporate Dining Room Cook
This Associate in Applied Science degree program blends cooking skills with knowledge of restaurant operations, accounting and marketing. Students obtain a solid foundation of introductory culinary skills and explore the latest techniques. On the business side, students develop leadership skills, plus gain knowledge of profitable fiscal management.

Students completing this program can earn the Culinary Arts degree by taking two additional semesters.

**Career Outlook**
Culinary management jobs are increasing in restaurants, full-service grocery stores, healthcare facilities, hotels and private clubs.

**Added Career Value**
Earn the Food and Beverage Management diploma and Culinary Assistant diploma while completing this degree.

**Program Learning Outcomes**
Upon completion of the program, graduates will be able to:
- Develop menus and ensure food quality
- Manage kitchen employees and operations
- Maintain safety and sanitation standards
- Maintain equipment and facilities
- Control operating expenses
- Manage customer relations

**Admission Requirements**
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

**Related Programs**
Culinary Arts, Culinary Assistant, Baking and Pastry Arts, Baking Production, Hotel/Hospitality Management, Meeting and Event Management

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**Start Dates: August/January**

For Information
Oak Creek Campus – 414-571-4500

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**Possible Careers:** Assistant Restaurant Manager, Banquet Chef, Kitchen Manager, Sous Chef
Digital Forensics Analyst

TECHNICAL DIPLOMA Program Code: 31-150-1 Mequon Campus

Enter the growing field of digital and computer forensics investigation. Coursework includes material from basic networking, basic security, network security, information systems auditing, risk management, and security procedures. Courses also cover specialized areas of forensics such as mobile forensics and internet forensics. Students can work toward getting AccessData Certified Examiner (ACE) or MPE+ (AccessData Mobile Phone Examiner Plus). Students also start preparation toward the following industry certifications: CompTIA Network+ (Net+), CompTIA Security+, Certified Information Systems Auditor (CISA).

Career Outlook
Due to increases in computer crimes, digital forensics analysis is expected to be a high-demand occupation.

Added Career Value
Students earn 24 credits toward the IT Information Systems Security Specialist associate degree upon completion of this diploma program. Students in that degree program are able to take three additional courses to obtain the Digital Forensics Analyst diploma.

Program Learning Outcomes
• Analyze and assess a cybercrime scene to choose appropriate best-practice procedures for retrieval, recovery and preservation of digital evidence
• Apply digital forensics tools to collect, analyze and evaluate evidence data
• Retrieve and recover files on various types of storage devices, using different operating and network systems
• Discuss the legal and ethical issues related to acquisition and analysis of digital evidence
• Investigate the collected evidence using digital-forensics investigation tools
• Investigate an incident by properly responding according to disaster recovery/business continuity plans
• Audit regularly the information systems, information security policies and digital investigation policy and procedures
• Communicate clearly, accurately and effectively, verbally and in writing
• Write detailed, court admissible digital-forensics investigation reports

Admission Requirements
• High school diploma or GED
• High school-level algebra
• Demonstration of proficiency in basic skills through a course placement assessment

SIXTEEN-WEEK TERMS Credits
ITSEC-114 Information Security Principles ........................................ 3
ITNET-101 Network Communications (Network+) .............................. 3
ITSEC-120 Security Policies and Procedures ........................................ 3
ITSEC-124 Network Security (Security+) ............................................ 3
ITSEC-126 Computer Forensics ....................................................... 3
ITSEC-151 IT – Auditing ................................................................. 3
ITSEC-152 Information Security Risk Management ............................ 3
ITSEC-156 Mobile Devices Forensics............................................... 3
ITSEC-166 Advanced Forensics ....................................................... 3
ITSEC-176 Malware Forensics.......................................................... 3
ENG-151 Communication Skills 1 ‡ ................................................ 3
(or) Any 200-series ENG course

TOTAL CREDITS: 33

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Desktop Security Support Specialist, Junior Digital Forensics Investigator/Analyst/Specialist, Junior IT Auditor, Junior IT Compliance Officer

Start Dates: August/January
For Information
Mequon Campus – 262-238-2200
**Program Learning Outcomes**

- Understand business models underlying electronic commerce
- Research business and consumer markets to create ebusiness marketing strategies
- Analyze web traffic/SEO
- Design and publish a web page including writing and formatting copy for the document
- Use project management techniques
- Create and use relational databases
- Conduct cross-browser compatibility testing
- Demonstrate a working knowledge of computer software
- Utilize problem-solving and decision-making skills
- Demonstrate proficiency in the programming languages used to develop web pages
- Demonstrate familiarity with ebusiness systems
- Understand the uses of social media tools and concepts for ebusiness
- Develop a web/social media marketing plan
- Provide web customer service

**Admission Requirements**

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Typing skills are highly recommended

**SIXTEEN-WEEK TERMS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBUS-174</td>
<td>Business Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>EBUS-118</td>
<td>Social Media Technologies</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-150</td>
<td>Introduction to Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>EBUS-165</td>
<td>Web and Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-128</td>
<td>Web Development with HTML/CSS</td>
<td>3</td>
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<tr>
<td>BADM-134</td>
<td>Business Organization and Management</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-123</td>
<td>Website Development ‡</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-126</td>
<td>Advanced Web Development for Mobile Devices ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 24

‡ Prerequisite required.
Program curriculum requirements are subject to change.

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**Possible Careers:** eBusiness Marketing Manager, eCommerce Marketing Manager, Social Media Strategist, Web Developer, Web Designer
## Program Learning Outcomes

- Demonstrate a working knowledge of computer software
- Utilize problem-solving and decision-making skills
- Understand business models underlying e-commerce
- Research business and consumer markets to create e-commerce marketing strategies
- Analyze web traffic/SEO
- Design and publish a web page including writing and formatting copy for the document
- Demonstrate proficiency in the programming languages used to develop web pages
- Demonstrate familiarity with e-commerce systems
- Use project management techniques
- Create and use relational databases
- Understand the uses of social media tools and concepts for e-commerce
- Develop a web/social media marketing plan
- Conduct cross-browser compatibility testing
- Provide web customer service

## Admission Requirements

- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- Typing skills highly recommended

### TECHNICAL STUDIES Credits

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBUS-174</td>
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<td>Social Media Technologies</td>
<td>3</td>
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<tr>
<td>VICOM-150</td>
<td>Introduction to Digital Media</td>
<td>3</td>
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<tr>
<td>EBUS-165</td>
<td>Web and Social Media Marketing</td>
<td>3</td>
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<tr>
<td>VICOM-128</td>
<td>Web Development with HTML/CSS</td>
<td>3</td>
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<tr>
<td>BADM-134</td>
<td>Business Organization and Management</td>
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<td>MGTDEV-188</td>
<td>Project Management</td>
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<tr>
<td>VICOM-123</td>
<td>Website Development ‡</td>
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<tr>
<td>MKTG-173</td>
<td>Marketing Research ‡</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-152</td>
<td>Interactive Design for Multimedia ‡</td>
<td>3</td>
</tr>
<tr>
<td>ACCTG-126</td>
<td>Accounting for Managers</td>
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<tr>
<td>MKTG-175</td>
<td>Marketing Internship ‡</td>
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<td>EBUS-191</td>
<td>eBusiness Relationship Management</td>
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<td>VICOM-124</td>
<td>Content Management Systems ‡</td>
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<td>VICOM-125</td>
<td>Advanced Website Development ‡</td>
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<tr>
<td>VICOM-126</td>
<td>Advanced Web Development for Mobile Devices ‡</td>
<td>3</td>
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</table>

### GENERAL STUDIES Credits

- ECON-195 Economics ....................................................... 3
- ENG-151 Communication Skills † ........................................... 3
- ENG-152 Communication Skills ‡ ........................................... 3
- MATH-123 Math with Business Applications ‡ ....................... 3
- NATSCI-167 Science of Technology ....................................... 3
- PSYCH-199 Psychology of Human Relations .............................. 3
- SOCSCI-197 Contemporary American Society ............................ 3

### SUGGESTED ELECTIVES: THREE CREDITS NEEDED ..................... 3

- MKTG-104 Selling Principles
- MKTG-185 Negotiation Skills for Business
- BADM-145 Small Business Management

### TOTAL CREDITS: 70

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**Possible Careers:** eBusiness Marketing Manager, eCommerce Marketing Manager, Social Media Strategist, Web Developer, Web Designer

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**Start Dates:** August/January

For Information
Oak Creek Campus – 414-571-4500, 414-571-4515

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Program curriculum requirements are subject to change.

^ Counts toward the eBusiness Strategist diploma program.

( ) = Semester order for full-time students.

‡ Prerequisite required.
This program prepares individuals to unite their passion for their work in the arts or in the trades with a viable business model. It also benefits those with a desire to own and operate their own business, and is useful for individuals seeking career advancement or a job change. Students have access to the Entrepreneurship Center located at the Downtown Milwaukee Campus, which presents a collaborative, interdepartmental work approach. The experiences students have while earning their diploma will be beneficial immediately in their own workplace, even if they are in the thinking stage of new business development. As larger businesses downsize, the ability to start and sustain a business will become more valuable. Some abilities that will enhance success in the program include listening to and understanding suggestions from others, and being able to see the business on a small scale as well as a large scale. Entrepreneurs also must be comfortable learning new concepts and using new tools.

Online Option
This program may be taken on campus or entirely online; on-campus testing or meetings may be required.

Career Outlook
Entrepreneurs drive the economy. They are the first to try new products, develop trends, and capitalize on opportunities that their larger counterparts do not see. As the global economy shifts to a leaner, faster environment, opportunities will permit entrepreneurs to succeed.

Program Learning Outcomes
• Understand the role of the entrepreneur
• Understand the components of a business plan
• Critique and analyze business plans in order to evaluate for breadth, depth and viability
• Develop and complete a comprehensive business plan

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Supervisory Management – Accelerated, Transportation – Logistics

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENTREP-101</td>
<td>Introduction to Entrepreneurship</td>
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<td>ENTREP-102</td>
<td>New Product Development</td>
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<td>ENTREP-103</td>
<td>Strategic Business Communication 1</td>
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<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<tr>
<td>ACCTG-110</td>
<td>Financial Accounting</td>
<td>3</td>
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<td>ENTREP-104</td>
<td>The Business Plan</td>
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<td>ENTREP-105</td>
<td>Strategic Business Communication 2 ‡</td>
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<td>BADM-165</td>
<td>Legal Environment of Business</td>
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<td>BADM-126</td>
<td>Business Finance</td>
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<td>(or) BADM-104 Business Statistics ‡</td>
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<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
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<td>(or) Any 200-series ENG or SPEECH course</td>
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</table>

TOTAL CREDITS: 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Program Learning Outcomes
Employers will expect graduates to:
• Identify, monitor and evaluate environmental health hazards
• Apply regulations and guidelines
• Utilize current technology
• Use effective oral and written communication skills
• Organize and maintain records and reports
• Demonstrate effective problem-solving abilities

Admission Requirements
• A high school diploma or GED
• One semester of high school-level algebra
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Water Technician Certificate, Sustainable Facilities Operations, Biotechnology Track – Associate in Science

Career Outlook
Environmental technicians apply procedures to identify, evaluate, and control hazards to the environment in general, and the effects on human health in particular. Graduates are employed in private industry, environmental consulting firms, and government agencies. Employers may require a physical examination and proper immunizations.

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>(1) ENVHEL-101</td>
<td>Introduction to Environmental Health</td>
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<td>(1) ENVHEL-102</td>
<td>Environmental Biology</td>
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<td>(1) ENVHEL-109</td>
<td>Applied Environmental Chemistry</td>
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<td>(2) ENVHEL-142</td>
<td>Principles of Water Resources</td>
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<td>(2) ENVHEL-145</td>
<td>Water/Wastewater Operations – Municipal</td>
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<td>(2) ENVHEL-173</td>
<td>Environmental Bacteriology</td>
<td>3</td>
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<td>(3) ENVHEL-104</td>
<td>Industrial Hygiene Technology ‡</td>
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<td>(3) ENVHEL-111</td>
<td>Applied Water Chemistry and Analysis ‡</td>
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<td>(3) ENVHEL-115</td>
<td>Air Pollution Technology ‡</td>
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<td>(3) ENVHEL-146</td>
<td>Water/Wastewater Operations – Industrial ‡</td>
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<td>(4) ENVHEL-105</td>
<td>Fundamentals of Hazardous Materials Control ‡</td>
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<td>(4) ENVHEL-119</td>
<td>Food and Dairy Quality Control ‡</td>
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<tr>
<td>(4) ENVHEL-143</td>
<td>Interpersonal Communication Skills and Environmental Management ‡</td>
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GENERAL STUDIES

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<thead>
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<th>Course Title</th>
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<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
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<td>(or)Any 200-series ECON course</td>
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<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<td>(or)ENG-201 and any 200-series ENG or SPEECH course</td>
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<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
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<td>MATH-107</td>
<td>College Mathematics ‡</td>
<td>3</td>
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<tr>
<td>NATSCI-169</td>
<td>Energy in Nature, Technology and Society</td>
<td>3</td>
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<td>(or)Any 200-series NATSCI course</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
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<td>(or)Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<td>(or)Any 200-series SOCSCI or HIST course</td>
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SUGGESTED ELECTIVES: FIVE CREDITS NEEDED ……………………..5

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<tr>
<td>ENVHEL-126</td>
<td>Environmental Lab Projects ‡</td>
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<tr>
<td>ENVHEL-127</td>
<td>Environmental Field Projects ‡</td>
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<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
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TOTAL CREDITS: 70

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Fashion/Retail Marketing
ASSOCIATE DEGREE Program Code: 10-104-4 Oak Creek Campus

(Official WTCS title: Fashion Marketing)
Prepare for a career marketing specialty shops, stores and boutiques through this Associate in Applied Science degree program. The program’s fashion marketing courses emphasize the creative aspects of selling apparel, and the retail management courses present the managerial and financial aspects of retailing. Students complete a one-year internship for hands-on experience in a fashion or retail organization.

Career Outlook
Trained fashion/retail applicants are continually recruited for supervisory and merchandising positions for many different types of retailers. Core skills include an ability to communicate well, and the demonstration of self-initiative and creativity.

Program Learning Outcomes
Employers will expect program graduates to:
• Manage marketing within a fashion/retail enterprise
• Demonstrate customer relations, interpersonal relations and supervisory skills
• Exhibit self-initiative and gain knowledge about retail markets, prices and trends
• Apply technology to merchandise management
• Use creativity in developing promotional concepts
• Utilize problem-solving and decision-making skills

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Marketing Management, Supervisory Management – Accelerated, Supply Chain Management

Start Dates: August/January
For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Buyer, Department Manager, Fashion Coordinator, Fashion Stylist, Store Manager, Visual Merchandiser

TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

TECHNICAL STUDIES Credits
(1) COMPSW-106 Introduction to MS Office ........................................... 3
(1) MKTG-102 Marketing Principles ........................................... 3
(1) MKTG-104 Selling Principles ........................................... 3
(1) MKTG-124 Apparel Marketing ........................................... 3
(1) MKTG-151 Business Career Management ................................ 1
(2) MGTDEV-191 Supervision ........................................... 3
(2) MKTG-106 Retail Management ‡ ........................................... 3
(2) MKTG-107 Customer Service Management ................................ 3
(2) MKTG-109 Textiles ........................................... 3
(2) MKTG-125 Advertising ‡ ........................................... 3
(3) MKTG-119 Visual Merchandising ........................................... 3
(3) MKTG-175 Marketing Internship 1 ‡ ........................................... 1
(4) ACCTG-110 Financial Accounting ........................................... 3
(4) MKTG-176 Marketing Internship 2 ‡ ........................................... 1

RETAIL MANAGEMENT EMPHASIS
(3) BADM-145 Small Business Management ‡ ........................................... 3
(3) MGTDEV-164 Personal Skills for Supervisors ........................................... 3

FASHION MARKETING EMPHASIS
(3) MKTG-140 Fashion Analysis ........................................... 3
(3) MKTG-145 Special Event Management ........................................... 3

GENERAL STUDIES
ECON-195 Economics ........................................... 3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡ ........................................... 3
(&) ENG-152 Communication Skills 2 ‡ ........................................... 3
(or) ENG-201 and any 200-series ENG or SPEECH course
MATH-123 Math with Business Applications ‡ ........................................... 3
(or) Any 200-series MATH course
NATSCI-149 Intro to Geographical Information Systems ‡ ........................................... 3
(or) Any 200-series NATSCI course
PSYCH-199 Psychology of Human Relations ........................................... 3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society ........................................... 3
(or) Any 200-series SOCSCI or HIST course

SUGGESTED ELECTIVES: SIX CREDITS NEEDED ........................................... 6
EBUS-118 Social Media Technologies
MKTG-173 Marketing Research ‡
Financial Services

TECHNICAL DIPLOMA Program Code: 31-114-3 Downtown Milwaukee and West Allis campuses; also offered entirely online

Begin your business career by learning accounting and financial principles for employment in banks, credit unions, insurance and consumer finance companies, and corporate finance departments. This program equips students with the skills and knowledge for entry-level financial services positions.

Online Option
This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook
Program graduates will have a solid foundation for a range of career opportunities within the industry, including credit specialist, insurance sales agent, customer service representative and loan specialist.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Banking and Financial Services associate degree.

Program Learning Outcomes
Employers will expect program graduates to:
• Exhibit knowledge and understanding of banking and financial transactions
• Demonstrate knowledge and understanding of accounting concepts
• Apply selling skills
• Employ problem-solving and decision-making skills
• Demonstrate appropriate application of financial tools

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Banking and Financial Services, Business Management, Entrepreneurship, Marketing Management

SIXTEEN-WEEK TERMS Credits
FIN-120 Introduction to Money, Banking and Financial Markets 3
COMPSW-106 Introduction to MS Office 3
ACCTG-111 Accounting 1 4
RBUS-102 Mathematics of Business 3
ENG-151 Communication Skills 1 ‡ 3
FIN-122 Investment Principles ‡ 3
FIN-170 Credit Management Procedures 3
BADM-192 Risk Management and Insurance 3
MKTG-104 Selling Principles 3

TOTAL CREDITS: 28

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Collections Specialist, Credit Specialist, Customer Service, Insurance Sales Agent, Loan Specialist, Sales Assistant

School of BUSINESS

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
West Allis Campus – 414-456-5500
Food and Beverage Management

TECHNICAL DIPLOMA Program Code: 31-317-2 Oak Creek Campus

To take a step forward in your career, this program provides leadership skills to build and motivate a kitchen team. Coursework also includes learning the principles behind profitable fiscal management such as analysis of financial reports and budget planning. Students should have a solid culinary foundation and be currently employed as a line cook, sous chef or chef.

Career Outlook
Graduates will be better positioned for advancement in the industry. Food service manager jobs in the Milwaukee area are expected to grow 10% through 2015. Graduates will work in restaurants, hotels, private clubs, cruise ships, and institutional food service operations. Manager positions are expected to increase in healthcare and elder care facilities.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Culinary Management degree program.

Program Learning Outcomes
Employers will expect graduates to:
• Display competence in developing menus
• Manage kitchen employees and operations
• Ensure food quality, safety and sanitation standards
• Display an ability to control operating expenses
• Maintain equipment and facilities

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Baking and Pastry Arts, Baking Production, Culinary Arts, Culinary Assistant, Meeting and Event Management, Hotel/Hospitality Management, Food Service Assistant, Food Service Team Leader

SIXTEEN-WEEK TERMS Credits
CULMGT-102 Food and Beverage Procurement ........................................ 2
CULMGT-140 Food and Beverage Operations ........................................ 3
CULMGT-115 Culinary Management and Field Experience .................... 1
HOTEL-124 Managerial Accounting for Hospitality Industry ‡ ................ 3
HOTEL-133 Supervision in the Hospitality Industry ............................... 2
CULMGT-116 Culinary Management Practicum ....................................... 2
CULMGT-117 Hospitality Law and Liability ........................................... 3
CULMGT-118 Hospitality Management Leadership ................................ 2
CULMGT-101 Menu Planning and Design ............................................ 2
ENG-151 Communication Skills 1 ‡ .................................................... 3
CULMGT-103 Beverage Management ................................................... 2
CULMGT-111 Catering Operations ...................................................... 3
CULMGT-109 Wine and Beer Pairing ................................................... 2
(or) HOTEL-105 Hospitality Marketing and Sales

TOTAL CREDITS: 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Assistant Restaurant Manager, Kitchen Manager, Banquet Chef, Sous Chef
Food Manufacturing and Processing Technician

TECHNICAL DIPLOMA  Program Code: 31-623-3  Oak Creek Campus

Gaining skills related to chemical laboratory and manufacturing processes, students prepare for careers in the design and operation of food and beverage production facilities. Courses focus on food safety and quality assurance, the manufacturing process, plus skills needed to succeed in a business environment.

Career Outlook
The Milwaukee region is on the forefront of urban agriculture and food-ingredients manufacturing, and is a world leader in organic production and probiotics. From thriving local artisans and processors, to headquarter operations of global food companies, there is a strong future for a career in food manufacturing and processing.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Food Science Technology associate degree program.

Program Learning Outcomes
• Apply appropriate regulations and guidelines
• Identify, monitor, evaluate and report health and sanitation hazards
• Demonstrate ability to set up, operate and monitor production processes
• Apply good manufacturing processes
• Apply tactics and strategies in utilization of quality improvement processes
• Organize and maintain records and reports
• Utilize current technology
• Use effective oral and written communication skills

Admission Requirements
• A high school diploma or GED
• High school-level algebra, geometry or physics
• High school-level biology or chemistry
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Food Science Technology, Food Manufacturing Industrial Maintenance

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMT-101</td>
<td>Chemical Laboratory/Process Safety</td>
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</tr>
<tr>
<td>ENVHEL-173</td>
<td>Environmental Bacteriology</td>
<td>3</td>
</tr>
<tr>
<td>FSTEC-107</td>
<td>Manufacturing Food Process and Schematics and Blueprints</td>
<td>3</td>
</tr>
<tr>
<td>ENg-151</td>
<td>Communication Skills 1 ‡</td>
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<tr>
<td>(or) ENG-201 English 1</td>
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<tr>
<td>NATSCI-186</td>
<td>Introductory Biochemistry ‡</td>
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<tr>
<td>(or) NATSCI-211 Chemistry 1</td>
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</tr>
<tr>
<td>ENVHEL-119</td>
<td>Food and Dairy Quality Control ‡</td>
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<tr>
<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
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<td>(or) ENG-202 English 2</td>
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<tr>
<td>FSTEC-101</td>
<td>HAACP for Food Manufacturing</td>
<td>4</td>
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<tr>
<td>FSTEC-102</td>
<td>Core Manufacturing Skills</td>
<td>2</td>
</tr>
<tr>
<td>FSTEC-103</td>
<td>Manufacturing Processes and Lab Science</td>
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<tr>
<td>MATH-115</td>
<td>College Technical Mathematics 1 ‡</td>
<td>5</td>
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<tr>
<td>QETECH-146</td>
<td>Quality Management Systems and Standards ‡</td>
<td>3</td>
</tr>
<tr>
<td>FSTEC-104</td>
<td>Food Processing Regulations and Sanitation/Sterilization</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 40

‡ Prerequisite required.
Program curriculum requirements are subject to change.

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Food Processing Operator, Blender, Mixer, Machine Operator, Filler Operator, Process Operator, Motor Operator
Food Manufacturing Industrial Maintenance

TECHNICAL DIPLOMA Program Code: 32-462-2 Downtown Milwaukee Campus

Courses focus on developing mechanical and technical skills, while familiarizing the student with food manufacturing processes and regulations. Graduates will be ready to enter this field with the technical know-how to maintain equipment, and the business knowledge required to succeed in the food manufacturing environment.

Program Learning Outcomes
Employers expect graduates to:
• Install, repair and maintain industrial production machinery
• Diagnose and repair electrical problems
• Adjust and maintain machinery for optimum manufacturing production
• Communicate technical information
• Work independently and as a member of a technical team

Career Outlook
According to the U.S. Bureau of Labor Statistics, employment of industrial machinery mechanics and maintenance workers is expected to grow 19% through 2020. A strong future for the food manufacturing industry is expected, including in the Milwaukee area which is home to headquarters operations for global food and beverage companies. Demand for new products continues to grow, and the increased use of manufacturing machinery will require more maintenance workers with broad skills.

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Food Science Technology, Food Manufacturing and Processing Technician

SIXTEEN-WEEK TERMS Credits
ELECTY-100 Principles of Electricity ................................................................. 5
HVAC2-115 Refrigeration I ‡ ............................................................................ 4
MACHTL-130 Drives and Linkages .................................................................... 1
MACHTL-132 Rigging and Lifting ........................................................................ 1
ELECTY-155 Hydraulics/Pneumatics ................................................................. 1
MACHTL-120 Machine Technology 1 .................................................................. 1
MACHTL-105 Machine Shop for Related Trades ............................................... 2
MACHTL-100 Metrology ................................................................................... 1
MACHTL-110 Machine Tool Technology .......................................................... 1
MATH-113 College Technical Mathematics 1A ‡ ............................................ 3
MACHTL-185 Machine Blueprint Reading .......................................................... 1
COMPSW-106 Introduction to MS Office .......................................................... 3
ELECTY-120 Electric Motor Control Wiring ..................................................... 2
ELECTY-130 Solid State Devices (Electronics) .................................................. 2
ELECTY-140 Electrical Apparatus (Motors and Drives) .................................... 4
HVAC2-114 Electrical Controls and Systems ‡ ............................................... 4
WELD-100 Fundamentals of Arc Welding ......................................................... 1
HYDPNU-101 Fluid Logic Controls .....................................................................
MACHTL-121 Machine Technology 2 .............................................................. 1
SOCSCI-197 Contemporary American Society .............................................. 3
ELECTY-150 PLC Basic .................................................................................. 2
FSTEC-101 HAACP for Food Manufacturing ................................................ 4
FSTEC-107 Manufacturing Food Processes/ Schematics and Blueprints .......... 3
FSTEC-104 Food Processing Regulations and Sanitation/Sterilization ............. 3

TOTAL CREDITS: 55

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Maintenance Technician, Industrial Electronic Technician, Industrial Maintenance Technician, Mechanical Technician
Food Science Technology
ASSOCIATE DEGREE Program Code: 10-623-4 Oak Creek Campus

Prepare to work in the areas of food science and quality assurance in the food and beverage manufacturing industry, through this Associate in Applied Science degree program. Food scientists and technologists help ensure food safety and improve food products. They rely on knowledge of a variety of sciences, such as chemistry, biology and biotechnology, to develop innovative ways to preserve, package, store and deliver foods. Coursework also focuses on developing skills needed for success in a business environment.

Career Outlook
Opportunities in food science are expected to grow as new products are developed using biotechnology. Manufacturing companies employ about 20% of the total number of food scientists and technologists, working mainly in food and pharmaceutical manufacturing.

Added Career Value
Earn the Food Manufacturing and Processing Technician diploma on your way to completing this degree.

Program Learning Outcomes
• Perform quality tests
• Demonstrate safety standards
• Demonstrate how to improve production processes
• Apply tactics and strategies in utilization of quality processes
• Apply appropriate regulations and guidelines
• Identify, monitor, evaluate and report health and sanitation hazards
• Determine production composition
• Utilize current technology
• Organize and maintain records

Admission Requirements
• A high school diploma or GED
• High school-level algebra, geometry or physics
• High school-level biology or chemistry
• Course placement assessment of basic skills proficiency

Related Programs
Food Manufacturing and Processing Technician, Food Manufacturing Industrial Maintenance

Start Dates: August/January
For Information
Oak Creek Campus – 414-571-4500

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEMT-101</td>
<td>Chemical Laboratory/Process Safety ^</td>
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<td>Core Manufacturing Skills ^</td>
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<td>FSTEC-103</td>
<td>Manufacturing Processes and Lab Science ^</td>
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<tr>
<td>CHEMT-105</td>
<td>Introduction to Instrumental Methods</td>
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<tr>
<td>ELCTEC-102</td>
<td>Introductory Electronics ‡</td>
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<tr>
<td>FSTEC-104</td>
<td>Food Processing Regulations and Sanitation/Sterilization ^</td>
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<td>FSTEC-105</td>
<td>Industry Practicum</td>
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<tr>
<td>FSTEC-137</td>
<td>Fundamentals of Biotechnology</td>
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<td>(or) NATSCI-237</td>
<td>Introduction to Biotechnology</td>
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<tr>
<td>FSTEC-106</td>
<td>Manufacturing Applications Using STEM</td>
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<td>STEM Applications in Manufacturing</td>
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<tr>
<td>QETECH-146</td>
<td>Quality Management Systems and Standards ‡ ^</td>
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GENERAL STUDIES

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<td>ENG-151</td>
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<td>(or) ENG-152</td>
<td>Communication Skills 2 ‡ ^</td>
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<td>MATH-115</td>
<td>College Technical Mathematics 1 ‡ ^</td>
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<td>(or) Any 200-series MATH course</td>
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<tr>
<td>NATSCI-186</td>
<td>Introductory Biochemistry ‡ ^</td>
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<tr>
<td>(or) NATSCI-211</td>
<td>Chemistry 1</td>
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<tr>
<td>NATSCI-172</td>
<td>Basic Nutritional Science</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<tr>
<td>(or) Any 200-series HIST or SOCSCI course</td>
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</tbody>
</table>

ELECTIVES: THREE CREDITS NEEDED

TOTAL CREDITS: 68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Food Manufacturing and Processing Technician diploma program.
() = Semester order for full-time students.

Possible Careers: Laboratory Technician, Quality Assurance Technician, Process Technician, Quality Technician, Quality Assurance Inspector

Milwaukee Area Technical College
School of BUSINESS
Food Service Assistant

TECHNICAL DIPLOMA Program Code: 30-316-1 Downtown Milwaukee, Oak Creek campuses

This one-semester program helps students develop skills to pursue a career in the food-service industry such as restaurants, catering services, hotels, healthcare facilities and schools. Students learn to prepare and cook-to-order a variety of foods that require a short preparation time.

Career Outlook
Graduates gain entry-level skills to be prep cook, short-order cook or fast-food cook. With experience and completion of Culinary Assistant diploma and Culinary Arts associate degree, opportunities exist for advancement to sauté cook, banquet cook, catering cook, broiler cook, fry cook.

Added Career Value
By completing this program, you will have earned four credits toward the Culinary Assistant diploma program.

Program Learning Outcomes
• Clean food prep areas, cooking surfaces, utensils
• Clean, stock and restock workstations and display cases
• Cook and package batches of food, such as hamburgers and fried chicken, which are prepared to order or kept warm until sold
• Cook the exact number of items ordered by each customer, working on several orders simultaneously
• Maintain sanitation, health and safety standards in work areas
• Accept payments, and make change or write charge slips
• Clean food preparation equipment, work areas and counters or tables
• Complete orders from steam tables, placing food on plates and serving customers at tables or counters
• Grill and garnish hamburgers or other meats such as steaks and chops
• Grill, cook and fry foods such as french fries, eggs, pancakes
• Assist cooks and kitchen staff with various tasks as needed, and provide cooks with needed items
• Butcher and clean fowl, fish, poultry and shellfish to prepare for cooking or serving
• Carry food supplies, equipment and utensils to and from storage and work areas
• Cut, slice or grind meat, poultry and seafood to prep for cooking

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

SIXTEEN-WEEK TERMS Credits
CULMGT-112 Food Service Sanitation .............................................. 1
CULART-121 Mise en Place/Culinary Fundamentals .......................... 1
CULART-123 Vegetables, Starches and Grains .................................. 2

TOTAL CREDITS: 4

Program curriculum requirements are subject to change.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC, 414-297-6395
Oak Creek Campus – 414-571-4500

Possible Careers: Fast-Food Cook, Prep Cook, Short-Order Cook
Food Service Team Leader

TECHNICAL DIPLOMA Program Code: 30-317-2 Downtown Milwaukee, Oak Creek campuses

Designed for those interested in pursuing management careers in the food-service industry, this one-semester program focuses on skills to supervise and coordinate the activities of workers engaged in preparing and serving food. Students will be prepared to work in a variety of food-service environments including restaurants, bakeries, catering services, delis, hotels, resorts, healthcare facilities and schools.

Career Outlook
Program graduates gain entry-level skills to be employed as a first-line supervisor of food preparation and serving workers. With experience and completion of a Culinary Management associate degree, opportunities exist for advancement to the positions of assistant restaurant manager, kitchen manager, banquet chef or sous chef.

Added Career Value
When you finish this diploma program, you will have earned credits toward the Food and Beverage Management degree.

Program Learning Outcomes
Employers will expect program graduates to:
• Train workers in food preparation, service, sanitation and safety procedures
• Compile and balance cash receipts at the end of the day or shift
• Perform various financial activities such as cash handling, deposit preparation and payroll
• Supervise and participate in kitchen and dining area cleaning activities
• Estimate ingredients and supplies required to prepare a recipe
• Resolve customer complaints regarding food service
• Control inventories of food, equipment, smallware and liquor, and report shortages to designated personnel
• Purchase or requisition supplies and equipment needed to ensure quality and timely delivery of services
• Observe and evaluate workers and work procedures to ensure quality standards and service, and complete disciplinary write-ups
• Specify food portions and courses, production and time sequences, and workstation and equipment arrangements

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

SIXTEEN-WEEK TERMS Credits
CULMGT-112 Food Service Sanitation ........................................... 1
CULMGT-102 Food and Beverage Procurement ................................. 2
CULMGT-101 Menu Planning and Design ........................................ 2
HOTEL-133 Supervision in the Hospitality Industry ........................... 2

TOTAL CREDITS: 7

Program curriculum requirements are subject to change.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC, 414-297-6395
Oak Creek Campus – 414-571-4500

Milwaukee Area Technical College
School of BUSINESS

Possible Careers: Assistant Restaurant Manager, Food Preparation Supervisor, Food Service Manager, Kitchen Manager
### Program Learning Outcomes

Employers will expect graduates to demonstrate:
- Front desk skills including the efficient operation of telephone, switchboard, cash register, calculator and reservation computer
- Housekeeping staff management capability
- Overall food and beverage management skills
- Sales, marketing and product merchandising skills
- General knowledge of building operations; energy efficiency; and maintenance of electrical, heating, and air conditioning systems
- Fundamentals of hotel/motel accounting, financial statements, auditing and managerial financing

### Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Students must be actively involved in the hospitality industry on a part-time basis while attending MATC

### Dual Degree Option

Add courses to this program to earn associate degrees in both Hotel/Hospitality Management and Meeting and Event Management. See your advisor for details.

### Career Outlook

You will be prepared for employment in one of the fastest growing segments of the nation's economy.

### Program Learning Outcomes

Employers will expect graduates to demonstrate:

- Front desk skills including the efficient operation of telephone, switchboard, cash register, calculator and reservation computer
- Housekeeping staff management capability
- Overall food and beverage management skills
- Sales, marketing and product merchandising skills
- General knowledge of building operations; energy efficiency; and maintenance of electrical, heating, and air conditioning systems
- Fundamentals of hotel/motel accounting, financial statements, auditing and managerial financing

### General Studies

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>MATH-123</td>
<td>Math with Business Applications ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-172</td>
<td>Basic Nutritional Science</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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</table>

### Technical Studies

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CULMGT-112</td>
<td>Food Service Sanitation</td>
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<tr>
<td>CULMGT-140</td>
<td>Food and Beverage Operations</td>
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<tr>
<td>MEET-151</td>
<td>Introduction to Hospitality/Tourism</td>
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<tr>
<td>HOTEL-105</td>
<td>Hospitality Marketing and Sales</td>
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<td>HOTEL-110</td>
<td>Front Office Procedures and Management</td>
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<td>HOTEL-122</td>
<td>Basic Hospitality Accounting</td>
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<tr>
<td>CULMGT-117</td>
<td>Hospitality Law and Liability</td>
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<tr>
<td>HOTEL-133</td>
<td>Supervision in the Hospitality Industry</td>
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<tr>
<td>CULMGT-102</td>
<td>Food and Beverage Procurement</td>
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<td>HOTEL-112</td>
<td>Front Office Computerized Procedures ‡</td>
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<td>HOTEL-124</td>
<td>Managerial Accounting for the Hospitality Industry ‡</td>
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<td>HOTEL-150</td>
<td>Housekeeping Operations</td>
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<td>CULART-125</td>
<td>Culinary Skills for Baking/Hospitality ‡</td>
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<td>HOTEL-120</td>
<td>Building Operations and Security</td>
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<td>HOTEL-130</td>
<td>Internship in Hotel/Hospitality Management ‡</td>
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<tr>
<td>MEET-178</td>
<td>Meeting and Convention Planning</td>
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</table>

### Suggested Electives: Three Credits Needed

- CULMGT-103  | Beverage Service                                  | 3       |
- FLANG-117   | Conversational Spanish for Service Occupations 1  | 3       |
- HOTEL-135   | Professional Presence in Hospitality               | 3       |

**Total Credits:** 68

*Prerequisite required.

Program curriculum requirements are subject to change.

( ) = Semester order for full-time students.
Through this Associate in Applied Science degree program, students gain the entry-level skills that help companies achieve overall goals through the management of their key resource: their employees. Specialized areas in the profession include recruitment, selection, training and development, employee and labor relations, compensation and benefits.

Career Outlook
New legislation and court rulings revising standards in occupational safety and health, equal employment opportunity, wages, healthcare, family leave and retirement plans are expected to increase demand for human resources personnel and labor relations experts. Changes in healthcare coverage options and other benefits should continue to spur demand for specialists to develop compensation and benefits packages.

Program Learning Outcomes
Employers expect graduates to have knowledge and skills in:
• The foundation and appropriate administration of employment law
• Application of effective recruitment and selection processes
• Strategies for employee training and development
• The fundamentals of compensation and benefits administration
• Critical employee relations strategies and the labor relations process
• The importance of health, wellness and safety initiatives within an organization

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Supervisory Management – Accelerated

Technical Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HRMG-193</td>
<td>Human Resource Management</td>
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<tr>
<td>BADM-134</td>
<td>Business Organization and Management</td>
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<td>HRMG-192</td>
<td>Strategic Management</td>
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<td>COMPSW-106</td>
<td>Introduction to Microsoft Office</td>
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<td>and OFTECH-128 &amp; OFTECH-129</td>
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<td>HRMG-133</td>
<td>Legal Issues and Employment Law</td>
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<td>RBUS-102</td>
<td>Math of Business</td>
<td>3</td>
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<td>HRMG-169</td>
<td>Diversity and Change Management</td>
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<td>HRMG-196</td>
<td>Recruiting and Selection</td>
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<td>MGTDEV-190</td>
<td>Leadership Development</td>
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<td>Managerial Communications</td>
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<td>HRMG-197</td>
<td>Employee Training and Development ‡</td>
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<td>ACCTG-143</td>
<td>Payroll Accounting Applications</td>
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<td>Business Ethics</td>
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<td>Fundamentals of Compensation</td>
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<td>HRMG-170</td>
<td>Employee Relations and Labor Relations</td>
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<td>HRMG-136</td>
<td>Safety in the Workplace</td>
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ECON-195 Economics ................................................. 3

ENG-151 Communication Skills 1 ‡ .................................. 3
ENG-152 Communication Skills 2 ‡ .................................. 3
(Eng-201 and any 200-series ENg or SPEECH course)

NATSCI-167 Science of Technology .................................. 3
(Any 200-series NATSCI course)

MATH-107 College Mathematics ‡ .................................... 3
(Any 200-series MATH course)

PSYCH-199 Psychology of Human Relations .................................. 3
(Any 200-series PSYCH course)

SOCSCI-197 Contemporary American Society .................................. 3
(Any 200-series SOCSCI or HIST course)

TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Program Learning Outcomes

Employers will expect graduates to:
• Identify, analyze, create and maintain computer information systems
• Evaluate software applications of business functions
• Operate personal computers
• Install computer equipment
• Provide training and support for users of computer information systems

Admission Requirements

• A high school diploma or GED
• One year of high school-level algebra
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

eBusiness Technology Analyst, IT Information Systems Security Specialist, IT Network Specialist, IT Mobile Applications Developer, Digital Forensics Analyst

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

Possible Careers: Computer Applications Technician, PC Specialist, Computer Sales Representative, Hardware Technician, End-User Trainer
To prepare for a career in computer network and internet security, students learn to develop information security strategies, perform risk analyses, install security software, monitor network traffic and develop an emergency response plan. This Associate in Applied Science degree program also provides background and hands-on experience in securing MS Windows, Unix/Linux, Cisco, networks, servers and clients, and the enterprise network. The program will prepare you to obtain an entry-level information technology position with possibilities for advancement. You will also be ready to take industry certification exams including Security+, MCSA, MCP, Network+, I-Net+ and CISSP Associate.

**Accelerated Option**
This program is also offered in an Accelerated format; see that program’s page for information.

**Career Outlook**
Opportunities are growing due to the increased need for secure computer systems in industry and business.

**Program Learning Outcomes**
- Troubleshoot and diagnose security issues
- Conduct security audits and penetration testing
- Assist in developing and implementing security plans and procedures
- Assist in developing and presenting security awareness
- Evaluate, recommend and install security hardware and software
- Monitor computer systems to detect inappropriate use
- Develop incident, disaster recovery, business continuity and emergency response plans

**Admission Requirements**
- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra
- Microsoft Windows or Macintosh operating system skills
- Demonstration of proficiency in basic skills through a course placement assessment

**Related Programs**
IT Computer Support Specialist, IT Network Specialist, IT Mobile Applications Developer, Digital Forensics Analyst

**Start Dates:** August/January

For Information
Mequon Campus – 262-238-2200

**TECHNICAL STUDIES**

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<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<td>Router Security</td>
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<td>Securing Wireless Devices and Networks</td>
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<td>Information Security Risk Management</td>
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<td>Computer Forensics</td>
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**GENERAL STUDIES**

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**SUGGESTED ELECTIVES: THREE CREDITS NEEDED**..................3

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<td>COMPSW-106</td>
<td>Introduction to MS Office</td>
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<td>ITSEC-151</td>
<td>IT - Auditing</td>
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**TOTAL CREDITS:** 69

# Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
IT Information Systems Security Specialist – Accelerated

ASSOCIATE DEGREE  Program Code: 10-150-4.AA  Mequon Campus

Students enrolled in the Accelerated program may complete all Technical Studies courses in less than 18 months. In the Accelerated format, classes meet four and one-half hours per week during the school year and are offered online in the summer. To earn the Associate in Applied Science degree, General Studies courses must be completed in addition to the Accelerated schedule of Technical Studies courses.

To prepare for a career in computer network and internet security, students learn to develop information security strategies, perform risk analyses, install security software, monitor network traffic and develop an emergency response plan. Coursework provides background and hands-on experience in securing MS Windows, Unix/Linux, Cisco, networks, servers and clients, and the enterprise network.

This program will prepare you to obtain an entry-level information technology position with possibilities for advancement. You will also be ready to take industry certification exams including Security+, MCSA, MCP, Network+, I-Net+ and CISSP Associate.

Career Outlook

Opportunities are growing due to the increased need for secure computer systems in industry and business.

Program Learning Outcomes

- Troubleshoot and diagnose security issues
- Conduct security audits and penetration testing
- Assist in developing and implementing security plans and procedures
- Assist in developing and presenting security awareness
- Evaluate, recommend and install security hardware and software
- Monitor computer systems to detect inappropriate use
- Develop incident, disaster recovery, business continuity and emergency response plans

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra
- Demonstration of proficiency in basic skills through a course placement assessment
- Microsoft Windows or Macintosh operating system skills

Start Dates: August/January

For Information
Mequon Campus – 262-238-2200

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<thead>
<tr>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED ................................ 3

ITNET-139  | Network Routing and Switching |
| COMPSW-106  | Introduction to MS Office |
| ITSEC-151  | IT - Auditing |

TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Sequence for Accelerated students.

Possible Careers: Junior Network Engineer/Analyst/Specialist, Junior Security Engineer/Analyst/Specialist, Desktop Security Support Specialist
IT Mobile Applications Developer

ASSOCIATE DEGREE  Program Code: 10-152-8  All campuses; also offered entirely online

Obtain skills needed to enter the job market as a mobile applications developer through this Associate in Applied Science degree program. MATC's program allows you to work in a hands-on, state-of-the-art computer system configuration. A required internship provides you with beginning work experience.

Online Option
This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook
There is a growing need for qualified mobile applications developers. Graduates of this program also may locate employment in programming or operations and systems analysis.

Program Learning Outcomes
Employers expect graduates to:
• Create desktop applications using the leading industry object oriented programming languages
• Participate in software development projects using the leading analysis, design and management techniques
• Create database driven websites using ASP.NET
• Create native mobile applications on the Android and Apple IOS platforms
• Solve problems individually and in a team environment

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
eBusiness Technology Analyst, IT Computer Support Specialist, IT Information Systems Security Specialist, IT Network Specialist, Digital Forensics Analyst

Possible Careers: Computer Programmer, Junior Programmer, Mobile Applications Developer, Programmer Trainee

**Start Dates:** August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

**TOTAL CREDITS:** 65
Through hands-on coursework, you will set up network operating systems and equipment, and work with emerging technologies. This Associate in Applied Science degree program prepares you for an entry-level IT position, and you will be ready to take industry certification exams including VMware Certified Professional-Datacenter Virtualization (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Technology Specialist (MCTS) - Windows 7, MCTS - Windows Server 2008 Active Directory, MCTS - Windows Server 2008 Network Infrastructure, CompTIA A+, CompTIA Network+ and CompTIA Security+.

Keys to your success are keeping up with the latest technologies, having strong problem-solving skills and having the ability to work alone and with others in training and troubleshooting capacities.

**Accelerated and Online Accelerated Options**
See the IT Network Specialist – Accelerated page for details.

**Added Career Value**
Earn the IT Networking and Infrastructure Administration diploma while completing this degree.

**Program Learning Outcomes**
- Install, configure and support desktop and server operating systems
- Install network hardware, software and operating systems
- Install, configure and manage virtualized environments
- Install and configure Active Directory
- Support, monitor and troubleshoot computers and computer networks
- Implement network security
- Control network access using firewalls, ACLs, VLANs

**Admission Requirements**
- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra
- Course placement assessment of basic skills proficiency

**Start Dates: August/January**

**For Information**
Downtown Milwaukee Campus – 414-297-MATC, 414-297-6370
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

**Possible Careers:** Cisco Certified Network Associate, Desktop Support Specialist, IT Field Technician, Junior Network Administrator, Network Specialist
# IT Network Specialist – Accelerated

**ASSOCIATE DEGREE**  
Program Code: 10-150-2.AA  
Downtown Milwaukee Campus; also offered entirely online

You may choose to take this Accelerated program entirely online, or attend classes in person (meeting four and one-half hours per week during the school year; courses are offered online during the summer). Students may complete the Technical Studies courses in less than 18 months. To earn this Associate in Applied Science degree, General Studies courses must also be completed. Keys to your success are keeping up with the latest technologies, having strong problem-solving skills, and having the ability to work alone and with others in a training and troubleshooting capacity.

This program prepares you for entry-level IT positions and you will be ready to take industry certification exams including VMware Certified Professional-Datacenter Virtualization (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Technology Specialist (MCTS) - Windows 7, MCTS - Windows Server 2008 Active Directory, MCTS - Windows Server 2008 Network Infrastructure, CompTIA A+, CompTIA Network+ and CompTIA Security+.

## Added Career Value

Earn the IT Networking and Infrastructure Administration technical diploma while completing this degree.

## Program Learning Outcomes

Employers will expect graduates to:
- Install, configure and support desktop and server operating systems
- Install network hardware, software and operating systems
- Install, configure and manage virtualized environments
- Install and configure Active Directory
- Control network access using firewalls, ACLs, VLANs
- Support, monitor and troubleshoot computers and computer networks
- Implement network security

## Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra
- Course placement assessment of basic skills proficiency
- Online Accelerated option also requires an interview, proof of broadband connection, and purchase of supplies to build a PC

## Start Dates: August (in-person)/January (online)

For Information  
Downtown Milwaukee Campus – 414-297-MATC, 414-297-6370

## TECHNICAL STUDIES

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<td>(1) ITNET-101</td>
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<td>Introduction to Networks (Cisco 1) ^</td>
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<td>Managing Windows Desktop (Client) OS ^</td>
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**TOTAL CREDITS:** 67

*Prerequisite required.  
Program curriculum requirements are subject to change.  
^ Counts toward the IT Networking and Infrastructure Administration technical diploma.  
( ) = Sequence for Accelerated students.

## Possible Careers

Cisco Certified Network Associate, Desktop Support Specialist, IT Field Technician, Junior Network Administrator, Network Specialist
Prepare for a career in designing, installing, maintaining, troubleshooting and implementing security on computers, computer networks and network operating systems. Through hands-on activities, you will set up and configure network operating systems and network equipment such as servers, PCs, switches and routers, and work with emerging technologies such as machine virtualization. The program also prepares you for many industry-sought certifications including the VMware Certified Professional-Data Center Virtualization (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Technology Specialist (MCTS) - Windows 7, MCTS - Windows Server 2008 Active Directory, MCTS - Windows Server 2008 Network Infrastructure, CompTIA A+, CompTIA Network+ and CompTIA Security+. Keys to your success include keeping up with the latest technologies, having strong problem-solving skills, and having the ability to work alone and with others in training and troubleshooting capacities.

The courses in this diploma can be taken in a traditional face-to-face format, in an Accelerated online format or in an Accelerated face-to-face format.

**Added Career Value**

After earning this diploma, the credits can be applied toward completing the IT Network Specialist associate degree program.

**Program Learning Outcomes**

- Implement and manage network security
- Install and upgrade network/server hardware, software and operating systems
- Support, monitor and maintain computers and computer networks
- Control network access using firewalls, ACLs, VLANs
- Implement methods to increase network performance
- Troubleshoot and resolve network problems
- Work with emerging technologies such as machine virtualization, wireless networking and VoIP
- Develop technical documentation
- Concentrate on detailed projects for long periods of time
- Solve problems individually and in a team environment

**Start Dates: August/January**

For Information
Downtown Milwaukee Campus – 414-297-MATC

**Possible Careers:** Cisco Certified Network Associate, Desktop Support Specialist, IT Field Technician, Junior Network Administrator, Network Specialist
Legitimate Administrative Professional – Accelerated

ASSOCIATE DEGREE Program Code: 10-106-3.AA Oak Creek Campus

This Accelerated program is designed for professional adults; you attend class one night each week, year-round. To earn this Associate in Applied Science degree, General Studies courses must be completed in addition to the Accelerated schedule of Technical Studies courses. Graduates of the program work in the many areas of law including bankruptcy, business and corporate, criminal, divorce and family law, real estate and worker’s compensation. Students learn legal ethics, confidentiality and professionalism; legal terminology and court structure; how to prepare legal documents using word processing, spreadsheet and database software; billing and managing financial records; and legal docket and case management software. Students will take a Legal Administrative Professional Internship course (OFTECH-192).

Keys to success are a firm grasp of English usage and an ability to express yourself orally and in writing. You should be highly proficient in spelling, punctuation, grammar, vocabulary and proofreading, have a pleasing telephone personality, and have an ability to work under pressure, meet deadlines and maintain confidentiality. A strong personal and professional code of ethics is essential.

Dual Degree Option
Take two additional courses to also earn the Administrative Professional – Accelerated associate degree. See your advisor for details.

Program Learning Outcomes
• Demonstrate effective office/business communication
• Apply technology skills to business and administrative tasks
• Perform routine legal office procedures
• Manage legal projects
• Maintain business relationships
• Model professionalism in the law/business environment

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Two years of work experience (full-time or part-time)

Related Programs
Administrative Professional, Paralegal

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Assistance
Oak Creek Campus – 414-571-3211

**TECHNICAL STUDIES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>(1) OFTECH-101</td>
<td>Windows 7 and Word 2010 Keyboarding Shortcuts</td>
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<td>(1) OFTECH-103</td>
<td>Keyboard and Keypad</td>
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<td>Business English Essentials</td>
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<td>Keyboarding Skill Development ‡</td>
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<td>(1) RBUS-102</td>
<td>Mathematics of Business</td>
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<td>(1) RBUS-141</td>
<td>Legal Terminology and Court Structure</td>
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<td>Basic Office Accounting</td>
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<td>Advanced Legal Issues ‡</td>
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<td>(3) OFTECH-147</td>
<td>Machine Transcription – Proofreading/Editing Legal ‡</td>
<td>3</td>
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<tr>
<td>(3) OFTECH-184</td>
<td>MS Office: Word, Excel, Access, PowerPoint ‡</td>
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<td>Legal Office Procedures ‡</td>
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**GENERAL STUDIES**

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<td>Communication Skills 1 ‡</td>
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<td>Communication Skills 2 ‡</td>
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<td>NATSCI-167</td>
<td>Science of Technology</td>
<td>3</td>
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<tr>
<td>NATSCI-169</td>
<td>Energy in Nature, Technology and Society</td>
<td>3</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<tr>
<td>(or) Any 200-series HIST or SOCSCI course</td>
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**TOTAL CREDITS: 70**

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Sequence for Accelerated students.
Marketing Management

ASSOCIATE DEGREE  Program Code: 10-104-3

Downtown Milwaukee, Mequon and Oak Creek campuses; also offered entirely online

(Official WTCS title: Marketing)

Develop a broad base of industry-required abilities and knowledge in advertising, sales, promotion, marketing research, channel management, internet and social media marketing, sales management and marketing management. This Associate in Applied Science degree program also helps students develop the communication, collaboration, critical thinking and technology skills that employers seek.

Online and Online Accelerated Options

Students may complete this degree entirely online, entirely on campus or combine online classes with on-campus classes. See the Marketing Management – Online Accelerated page for details on the Accelerated format.

Career Outlook

Opportunities for employment in marketing-related fields are expected to increase faster than the average for all occupations through 2020.

Added Career Value

Earn the Marketing Management diploma while completing this degree.

Program Learning Outcomes

- Develop strategies to anticipate and satisfy market needs
- Promote products, services, images and/or ideas to achieve a desired outcome
- Evaluate information through the market research process to make business decisions
- Prepare selling strategies
- Apply marketing technologies

Admission Requirements

- A high school diploma or GED
- Demonstrated keyboarding skills through exam or taking OFTECH-103 (Keyboard and Keypad)
- Course placement assessment of basic skills proficiency

Related Programs

Business Management, eBusiness Technology Analyst, Fashion/Retail Marketing, Supervisory Management – Accelerated, Supply Chain Management

Start Dates: August/January

For Information

Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500

TECHNICAL STUDIES

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<th>Course Title</th>
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<td>Marketing Research ‡</td>
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<td>(4) EBUS-165</td>
<td>Web and Social Media Marketing ‡</td>
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GENERAL STUDIES

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<td>ENG-152</td>
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<td>NATSCI-167</td>
<td>Science of Technology</td>
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<td>PSYCH-199</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<td>(or) Any 200-series SOCSCI or HIST course</td>
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ELECTIVES: THREE CREDITS NEEDED ............................................. 3

TOTAL CREDITS: 68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Marketing Management technical diploma program.
( ) = Semester order for full-time students.

Possible Careers: Advertising Creative and Account Management, Business-to-Business or Business-to-Consumer Marketing, Social Media Marketing
Program Learning Outcomes
Employers expect graduates to:
• Develop strategies to anticipate and satisfy market needs
• Promote products, services, images and/or ideas to achieve a desired outcome
• Evaluate information through the market research process to make business decisions
• Prepare selling strategies
• Apply marketing technologies

Career Outlook
Opportunities in marketing-related fields are expected to increase faster than the average for all occupations through 2020.

Added Career Value
Earn the Marketing Management diploma while completing this degree.

Program Learning Outcomes
Employers expect graduates to:
• Develop strategies to anticipate and satisfy market needs
• Promote products, services, images and/or ideas to achieve a desired outcome
• Evaluate information through the market research process to make business decisions
• Prepare selling strategies
• Apply marketing technologies

Admission Requirements
• A high school diploma or GED
• Demonstrated keyboarding skills through exam or taking OFTECH-103 (Keyboard and Keypad)
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, eBusiness Technology Analyst, Fashion/Retail Marketing, Supervisory Management – Accelerated

Start Date: August
For Information
414-570-4463

Possible Careers: Advertising Creative and Account Management, Business-to-Business or Business-to-Consumer Marketing, Social Media Marketing
Marketing Management

TECHNICAL DIPLOMA  Program Code: 31-104-4  Downtown Milwaukee, Mequon and Oak Creek campuses; also offered online

This program is designed to strengthen your career options, whether you are a working adult with little or no experience in the marketing field, or a professional with a marketing background interested in enhancing your skills. Students learn to develop integrated marketing programs and use new technologies. Aptitudes that will contribute to your success include the ability to arrive at logical conclusions by relying upon facts and reason, effective interpersonal skills, and the ability to function well as a member of a team.

Online Option
This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook
Opportunities for employment in marketing-related fields are expected to increase faster than the average for all occupations through 2020.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Marketing Management associate degree program.

Program Learning Outcomes
Employers will expect graduates to:
• Develop strategies to anticipate and satisfy market needs
• Promote products, services, images and/or ideas to achieve a desired outcome
• Evaluate information through the market research process to make business decisions
• Prepare selling strategies
• Apply marketing technologies

Admission Requirements
• High school diploma or GED
• Basic computer skills
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, eBusiness Strategist, Fashion/Retail Marketing, Social Media Strategist, Supply Management

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC; 414-297-4500

SIXTEEN-WEEK TERMS  Credits
COMPSW-106  Introduction to MS Office .................................................... 3
ENG-151  Communication Skills 1 ‡ .................................................... 3
(or) ENG-201  English 1 ‡
MKTG-104  Selling Principles ........................................................... 3
MKTG-102  Marketing Principles ....................................................... 3
MKTG-173  Marketing Research ‡ .................................................. 3
MKTG-125  Advertising ‡ ............................................................... 3
MKTG-129  Advertising Campaign Strategies ‡ .................................. 3
MKTG-185  Negotiation Skills for Business ........................................ 3
LOGMGT-164  Supply Chain Management ........................................ 3
MKTG-160  Sales Management ‡ ...................................................... 3
EBUS-118  Social Media Technologies ............................................. 3
EBUS-165  Web and Social Media Marketing .................................... 3
MKTG-134  Integrated Marketing Communications .......................... 3
MKTG-174  Marketing Management .................................................. 3

TOTAL CREDITS:  42

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Advertising Account Management, Business-to-Consumer Marketing, Event Marketing, Social Media Marketing, Sales Promotion
Develop a broad cross-section of valuable knowledge, skills and abilities in marketing, sales, advertising, marketing research and career planning. You will learn to develop integrated marketing programs and use new technologies. Coursework enables students to focus on sales management, social media marketing or retail marketing.

Online Option
This program may be taken on campus or entirely online; on-campus testing and meetings may be required.

Career Outlook
Opportunities for employment in marketing-related fields are expected to increase faster than the average for all occupations through 2020.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Marketing Management associate degree program.

Program Learning Outcomes
Employers expect graduates to:
• Develop strategies to anticipate and satisfy market needs
• Promote products, services, images and/or ideas to achieve a desired outcome
• Evaluate information through the market research process to make business decisions
• Prepare selling strategies
• Apply marketing technologies

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Marketing Management, eBusiness Strategist, Supply Chain Management, Supervisory Management – Accelerated, Social Media Strategist

SIXTEEN-WEEK TERMS

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>Keyboard and Keypad</td>
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<tr>
<td>( &amp; ) MKTG-106 Retail Management ‡</td>
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</table>

TOTAL CREDITS: 26

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Advertising Creative and Account Management, Business-to-Business or Business-to-Consumer Marketing, Social Media Marketing
Program Learning Outcomes
- Compose and prepare accurate medical documents and presentations using business software
- Use medical terminology and English language correctly in oral and written messages
- Abstract patient information accurately
- Create, maintain records using medical-specific software
- Demonstrate knowledge of insurance-related practices
- Apply HIPAA guidelines as appropriate
- Determine priorities and follow through
- Triage information efficiently
- Use resources and equipment efficiently
- Treat others with courtesy and respect
- Interact positively to resolve workplace human relations issues
- Demonstrate MATC core abilities

Career Outlook
The employment outlook is favorable. Job responsibilities may include serving as liaison between a healthcare facility and the community, assisting with academic research, preparing electronic medical records, or processing insurance claims and patient statements.

Added Career Value
Students can earn the Medical Billing diploma while completing this degree program.

Program Learning Outcomes
- Compose and prepare accurate medical documents and presentations using business software
- Use medical terminology and English language correctly in oral and written messages
- Abstract patient information accurately
- Create, maintain records using medical-specific software
- Demonstrate knowledge of insurance-related practices
- Apply HIPAA guidelines as appropriate
- Determine priorities and follow through
- Triage information efficiently
- Use resources and equipment efficiently
- Treat others with courtesy and respect
- Interact positively to resolve workplace human relations issues
- Demonstrate MATC core abilities

Admission Requirements
- A high school diploma or GED
- Course placement assessment of basic skills proficiency

Employers and intern sponsors may require background checks, drug testing and inoculations as well as signed statements of confidentiality.

Possible Careers: Insurance Specialist, Medical Billing, Medical Office Coordinator, Medical Transcription

<table>
<thead>
<tr>
<th>TECHNICAL STUDIES</th>
<th>Credits</th>
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<tr>
<td>OFTECH-122</td>
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# Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Medical Billing diploma program.
( ) = Semester order for full-time students.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-29-MATC

Possible Careers: Insurance Specialist, Medical Billing, Medical Office Coordinator, Medical Transcription
Medical Billing

TECHNICAL DIPLOMA  Program Code: 31-106-5  West Allis Campus

To perform the essential functions of healthcare administration, you will need a background that includes knowledge of office accounting, medical insurance and terminology, efficient office practices and basic human anatomy. This program covers this unique, broad spectrum.

Career Outlook
The employment outlook is favorable in the medical billing field. In addition to healthcare facilities, medical billers also work in medical schools and government agencies.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Medical Administrative Specialist associate degree program.

Program Learning Outcomes
Employers will expect graduates to:
• Demonstrate knowledge of insurance-related practices
• Demonstrate understanding of documents used in healthcare billing
• Demonstrate understanding of interpreting various insurance carriers’ EOB (Explanation of Benefits), EOR (Explanation of Review) or RA (Remittance Advice)
• Manage client information
• Communicate professionally in the healthcare environment
• Maintain patient confidentiality
• Determine priorities and follow through
• Treat everyone with courtesy
• Demonstrate MATC core abilities

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Program
Medical Administrative Specialist

SIXTEEN-WEEK TERMS

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<tr>
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<td>Medical Office Terminology 1</td>
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<td>RBUS-140</td>
<td>Medical Insurance Principles and Coding ‡</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-197</td>
<td>Medical Office Career Investigation ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Medical billing positions in hospitals, physicians’ offices, medical and diagnostic laboratories, and outpatient care centers
Meeting and Event Management

ASSOCIATE DEGREE  Program Code: 10-109-6  Downtown Milwaukee Campus

Build a dynamic career in event management, meeting planning, special event marketing, corporate and convention sales, or hotel marketing through this Associate in Applied Science degree program.

Dual Degree Option
Students can add courses to this program to earn associate degrees in both Hotel/Hospitality Management and Meeting and Event Management. See your advisor for information.

Career Outlook
Festivals and events are among the fastest-growing segments of the meeting industry; in addition, many associations and corporations hire people to plan and conduct meetings. Employment opportunities also exist in the convention industry, in tourism offices and at information centers.

Added Career Value
Earn the Special Event Management technical diploma while completing this degree.

Program Learning Outcomes
Employers expect graduates to:
• Develop meeting and event proposals
• Manage funding for on-site meetings
• Develop marketing budgets
• Recognize the different types of supplier contracts
• Identify legal issues concerning meetings and events
• Use good negotiation techniques in the meeting management environment

Admission Requirements
• A high school diploma or GED
• Typing proficiency of 30 words per minute or concurrent enrollment in OFTECH-103 Keyboard and Keypad
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Hotel/Hospitality Management, Marketing Management, Supervisory Management – Accelerated

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPSW-106</td>
<td>Introduction to MS Office</td>
<td>3</td>
</tr>
<tr>
<td>RBUS-111</td>
<td>Business Communications ‡</td>
<td>3</td>
</tr>
<tr>
<td>HOTEL-105</td>
<td>Hospitality Marketing and Sales ^</td>
<td>2</td>
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<tr>
<td>MEET-151</td>
<td>Introduction to Hospitality and Tourism ^</td>
<td>3</td>
</tr>
<tr>
<td>CULMGT-140</td>
<td>Food and Beverage Operations ^</td>
<td>3</td>
</tr>
<tr>
<td>CULMGT-117</td>
<td>Hospitality Law and Liability</td>
<td>3</td>
</tr>
<tr>
<td>HOTEL-122</td>
<td>Basic Hospitality Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HOTEL-133</td>
<td>Supervision in the Hospitality Industry</td>
<td>3</td>
</tr>
<tr>
<td>MEET-181</td>
<td>Exposition and Special Event Management ^</td>
<td>3</td>
</tr>
<tr>
<td>HOTEL-124</td>
<td>Managerial Accounting for the Hospitality Industry ‡</td>
<td>3</td>
</tr>
<tr>
<td>HOTEL-127</td>
<td>Catering Weddings, Convention Sales and Contracts ^</td>
<td>3</td>
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<tr>
<td>MEET-180</td>
<td>Registration and Housing Logistics</td>
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<tr>
<td>MEET-184</td>
<td>Negotiation and Risk Management ^</td>
<td>3</td>
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<tr>
<td>HOTEL-130</td>
<td>Internship in Hotel/Hospitality Management ^</td>
<td>3</td>
</tr>
<tr>
<td>MEET-178</td>
<td>Meeting and Convention Planning ^</td>
<td>3</td>
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</tbody>
</table>

GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series ECON course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENg-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
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<tr>
<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<tr>
<td>MATH-123</td>
<td>Math with Business Applications ‡</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series MATH course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATSCI-149</td>
<td>Introduction to Geographical Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series NATSCI course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series PSYCH course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series SOCSCI or HIST course</td>
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</tr>
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</table>

SUGGESTED ELECTIVES: SIX CREDITS NEEDED ........................................... 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FL ANg-117</td>
<td>Conversational Spanish for Service Occupations 1</td>
<td></td>
</tr>
<tr>
<td>MKTG-169</td>
<td>Destination and Attraction Marketing</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CREDITS:  70

# Prerequisite required.
Program curriculum requirements are subject to change.
^ Counts toward the Special Event Management diploma program.
() = Semester order for full-time students.

Possible Careers: Convention Services Manager, Corporate Travel Manager, Destination Wedding Planner, Special Events Coordinator
Office Technology Assistant

TECHNICAL DIPLOMA

Program Code: 31-106-1

Downtown Milwaukee and Oak Creek campuses

To boost your career, gain skills in the updated technology that today’s offices rely on every day. Coursework includes learning administrative office procedures, studying basic accounting, using the software prominent in office environments, and developing strong keyboarding skills.

Career Outlook
This occupation ranks among those with the largest number of job openings. Opportunities should be best for applicants with extensive knowledge of software applications.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Administrative Professional associate degree.

Program Learning Outcomes
Employers will expect graduates to:
• Apply technology skills to business and administrative tasks
• Demonstrate effective office/business communications
• Perform routine administrative office procedures
• Manage administrative projects
• Maintain business relationships
• Key at 55 to 60 words per minute
• Model professionalism in the office or business environment

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Administrative Professional, Bilingual Office Assistant, Legal Administrative Professional – Accelerated, Medical Administrative Specialist, Supply Management, Transportation – Logistics

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFTECH-101</td>
<td>Windows 7 and Word 2010 Keyboard Shortcuts</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-103</td>
<td>Keyboard and Keypad</td>
<td>1</td>
</tr>
<tr>
<td>OFTECH-119</td>
<td>Information Management</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-122</td>
<td>Business English Essentials</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-136</td>
<td>Keyboarding Skill Development 1 ‡</td>
<td>1</td>
</tr>
<tr>
<td>OFTECH-102</td>
<td>Office Technologies ‡</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-133</td>
<td>Business Document Production 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ACCTG-102</td>
<td>Basic Office Accounting</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-165</td>
<td>Administrative Office Procedures 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>OFTECH-184</td>
<td>MS Office: Word, Excel, Access and PowerPoint ‡</td>
<td>3</td>
</tr>
<tr>
<td>RBUS-180</td>
<td>Business Career Planning</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 27

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Administrative Assistant, Office Assistant, Office Support Receptionist

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Oak Creek Campus – 414-571-4500
Paralegal
ASSOCIATE DEGREE  Program Code: 10-110-1  Downtown Milwaukee Campus

With coursework focused on the practical aspects of law, this program provides a broad background and prepares students to work as a paralegal in the legal community, in government, or in business and industry. Courses in this Associate in Applied Science degree program are available days and evenings, and selected courses are offered online; students must earn at least 10 Legal Specialty credits (i.e., PLEGAL courses) via face-to-face instruction. Important to your success is the ability to work under pressure to meet deadlines. You should be well-groomed; typing skills and computer literacy are helpful. This program is approved by the American Bar Association.

Career Outlook
Although this is a growing profession, competition in the job market is keen. The use of paralegals permits more efficient and cost-effective use of an attorney’s time. Typical job duties include conducting client interviews, obtaining case information, performing legal research, preparing and filing legal documents and court papers. Paralegals are required to work under the supervision of an attorney to avoid the unauthorized practice of law.

Program Learning Outcomes
Employers expect graduates to:
• Apply ethical principles in a legal environment
• Process legal documents
• Perform legal research
• Apply critical thinking skills to address legal issues
• Demonstrate professionalism in a legal environment

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Business Management, Criminal Justice – Law Enforcement, Supervisory Management – Accelerated

Start Date: August
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Career: Paralegal

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) BADM-165</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>(1) COMPsw-106</td>
<td>Introduction to MS Office</td>
<td>3</td>
</tr>
<tr>
<td>(1) OFTECH-103</td>
<td>Keyboard and Keypad</td>
<td>1</td>
</tr>
<tr>
<td>(1) PLEGAL-101</td>
<td>Introduction to Paralegalism</td>
<td>3</td>
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<tr>
<td>(2) ACCTg-110</td>
<td>Financial Accounting</td>
<td>3</td>
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<tr>
<td>(2) PLEGAL-103</td>
<td>Legal Research ‡</td>
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<tr>
<td>(2) PLEGAL-105</td>
<td>Civil Procedure ‡</td>
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<td>(2) Select ONE course from the following:</td>
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<td>3</td>
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<tr>
<td>PLEGAL-116</td>
<td>Real Estate Law and Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-118</td>
<td>Criminal Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-127</td>
<td>Debtor-Creditor Law ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-140</td>
<td>Legal Interviewing/Investigation ‡</td>
<td></td>
</tr>
<tr>
<td>(3) PLEGAL-107</td>
<td>Legal Writing ‡</td>
<td>3</td>
</tr>
<tr>
<td>(3) PLEGAL-111</td>
<td>Litigation Practice Systems ‡</td>
<td>3</td>
</tr>
<tr>
<td>(3) PLEGAL-121</td>
<td>Domestic Relations and Divorce Practice Systems ‡</td>
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<tr>
<td>(3) Select ONE course from the following:</td>
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<tr>
<td>PLEGAL-114</td>
<td>Trusts and Estates – Probate Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-116</td>
<td>Real Estate Law and Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-118</td>
<td>Criminal Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-127</td>
<td>Debtor-Creditor Law ‡</td>
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</tr>
<tr>
<td>PLEGAL-140</td>
<td>Legal Interviewing/Investigation ‡</td>
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<td>(4) Select THREE courses from the following:</td>
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<tr>
<td>PLEGAL-114</td>
<td>Trusts and Estates – Probate Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-116</td>
<td>Real Estate Law and Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-118</td>
<td>Criminal Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-123</td>
<td>Corporate Practice Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-127</td>
<td>Debtor-Creditor Law ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-140</td>
<td>Legal Interviewing/Investigation ‡</td>
<td></td>
</tr>
</tbody>
</table>

GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>MATH-123</td>
<td>Math with Business Applications ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-167</td>
<td>Science of Technology</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 64

# Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
This Associate in Applied Science degree program prepares you for a wide range of careers in the real estate field. It is designed to familiarize you with numerous job opportunities, including sales and brokerage, property management, mortgage lending, investment, tax assessing, community building inspection, home inspection and others. The program includes broad training in the major areas of real estate, which can lead to sales and broker licenses, certifications for building inspection, licensed home inspector, or to one of several designations in property management. The Real Estate program is approved by the Wisconsin Department of Safety and Professional Services. Salesperson’s preparation courses (RLEST-180 and RLEST-182) and broker’s preparation courses (RLEST-183 and RLEST-187) are offered to meet minimum educational requirements to qualify for the state licensing exams.

Career Outlook
Opportunities in the different areas of real estate are available for well-trained professionals, as employees of real estate companies or as self-employed real estate specialists. Good people skills, math proficiency and a willingness to work evenings and weekends are important.

Program Learning Outcomes
Employers expect graduates to:
• Demonstrate knowledge of real estate law
• Calculate and communicate the financial aspects of a real estate transaction
• Process forms accurately and quickly
• Understand the fundamentals of construction
• Apply effective sales competencies
• Display a sound understanding of the concepts of real estate value
• Demonstrate sound interactive communication skills

Admission Requirements
• A high school diploma or GED
• Course placement assessment of basic skills proficiency

Related Programs
Business Management, Marketing Management, Supervisory Management – Accelerated

Start Dates: August/January

For Information
West Allis Campus – 414-456-5500

Possible Careers: Broker, Building Inspection, Property Management

TOTAL CREDITS: 63

# Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.
# Program Learning Outcomes

Employers will expect program graduates to:

- Demonstrate a working knowledge of computer software
- Utilize problem-solving and decision-making skills
- Understand business models and uses of social media
- Research business and consumer markets to create social media marketing strategies
- Analyze social media metrics/understand SEO techniques
- Design social media platforms including audience appropriate content
- Monitor and engage in social media/web communities
- Show knowledge of all major social media platforms
- Use project management techniques
- Research and monitor social media efforts for effectiveness
- Understand the uses of social media tools and concepts internal and external to the organization
- Develop a web/social media marketing strategy
- Provide web customer service

## Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Basic computer skills are highly recommended

## SIXTEEN-WEEK TERMS Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBUS-118</td>
<td>Social Media Technologies</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-150</td>
<td>Introduction to Digital Media</td>
<td>3</td>
</tr>
<tr>
<td>EBUS-165</td>
<td>Web and Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-128</td>
<td>Web Development with HTML/CSS</td>
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<tr>
<td>EBUS-191</td>
<td>eBusiness Relationship Management</td>
<td>3</td>
</tr>
<tr>
<td>VICOM-124</td>
<td>Content Management Systems ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 18

‡ Prerequisite required.

Program curriculum requirements are subject to change.

## Start Dates: August/January

**For Information**
Downtown Milwaukee Campus – 414-297-MATC
Put your creativity and planning skills to work and begin a career in event management. Prior to graduation, you will gain experience through the program’s 16-week internship. Effective communications skills, strong human relations abilities and problem-solving skills will contribute to your success in the program and on the job.

Career Outlook
Many associations and corporations are hiring people to arrange, plan and conduct special events in a wide range of venues. In this field there is a high demand for skilled, customer service-focused employees.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Meeting and Event Management degree program.

Program Learning Outcomes
Employers will expect graduates to:
• Develop meeting and event proposals
• Manage funding for on-site meetings
• Create program planning outlines
• Learn how to develop a volunteer management program
• Recognize the different types of supplier contracts
• Use good negotiation techniques in the event management environment
• Apply your business computer skills
• Develop a realistic and comprehensive marketing budget
• Understand the role of a convention and visitors bureau
• Identify legal issues concerning meetings and events
• Describe food and beverage needs for events
• Identify the factors for set-up of meeting spaces
• Understand the importance of planning for on-site emergencies

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Typing proficiency of 30 words per minute or concurrent enrollment in OFTECH-103 Keyboard and Keypad

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Activity Director, Corporate Travel Manager, Destination Wedding Planner, Meeting Planner, Special Event Coordinator
Supervisory Management – Accelerated

ASSOCIATE DEGREE Program Code: 10-196-1.AA
Mequon, Oak Creek and West Allis campuses

Designed for working adults, the program’s Accelerated format allows you to finish your Associate in Applied Science degree in less than two and one-half years by taking classes one evening per week, or on Saturday morning, year-round. This program is designed for people who are currently employed in leadership and management positions, or people who aspire to move into such positions. The curriculum focuses on developing a wide range of supervisory skills.

Career Outlook
Leadership skills are essential to be successful in all areas of business and industry. Program graduates typically are supervisors, group leaders and managers.

Program Learning Outcomes
Employers expect graduates to:
- Understand the supervisor’s role in planning, organizing, staffing and leading a work group
- Demonstrate leadership, team-building and communication skills
- Demonstrate human resource skills in selecting, evaluating, training and disciplining employees
- Understand the legal issues that supervisors face
- Design, implement and evaluate formal projects and budgets
- Use data, problem-solving skills and processes to analyze and improve quality

Admission Requirements
- High school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Two or more years of work experience
- An interview with the program chairperson

Related Programs
Business Management, Human Resources, Marketing Management

Start Date: January

For Information
Mequon Campus – 262-238-2200, 262-238-2282
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

TECHNICAL STUDIES Credits
(1) COMPSW-106 Introduction to MS Office............................................3
(or) COMPSW-137 & COMPSW-138
(and) OFTECH-128 or OFTECH-129
(1) BADM-134 Business Organization and Management....................3
(1) RBUS-102 Mathematics of Business.............................................3
(1) MGTDEV-164 Personal Skills for Supervisors...............................3
(2) MGTDEV-191 Supervision ...............................................................3
(2) HRMGT-193 Human Resource Management...............................3
(2) MGTDEV-134 Legal Issues for Supervisors...................................3
(2) MGTDEV-189 Team Building and Problem-Solving.......................3
(5) HRMGT-169 Diversity and Change Management............................3
(3) MGTDEV-190 Leadership Development........................................3
(3) MGTDEV-195 Managerial Communications.................................3
(3) HRMGT-136 Safety in the Workplace............................................3
(3) ACCTG-126 Accounting for Managers..........................................3
(4) MGTDEV-188 Project Management.............................................3
(4) MGTDEV-192 Managing for Quality............................................3

GENERAL STUDIES
ECON-195 Economics ........................................................................3
(or) Any 200-series ECON course*
ENG-151 Communication Skills 1 ‡ ....................................................3
(8) ENG-152 Communication Skills 2 ‡ .............................................3
(or) ENG-201 and any 200-series ENG or SPEECH course*
MATH-107 College Mathematics ‡ ......................................................3
(or) Any 200-series MATH course *
NATSCI-167 Science of Technology .....................................................3
(or) Any 200-series NATSCI course *
PSYCH-199 Psychology of Human Relations ....................................3
(or) PSYCH-231 Introductory Psychology *
SOCSCI-197 Contemporary American Society ..................................3
(or) SOCSCI-203 Introduction to Sociology *

SUGGESTED ELECTIVES: THREE CREDITS NEEDED .........................3
LOGMG-146 Operations Management
BADM-104 Business Statistics ‡
QETECH-132 Six Sigma Green Belt 1
HRMGT-198 Business Ethics

TOTAL CREDITS: 69

‡ Prerequisite required. S = Summer
Program curriculum requirements are subject to change.
* Students who plan to transfer MATC credits to four-year universities should take 200-series courses in General Studies.
() = Sequence for Accelerated Studies.

Possible Careers: Team Leader, Director, Manager, Supervisor

Page 75
Supply Chain Management
ASSOCIATE DEGREE  Program Code: 10-182-1  Mequon and Oak Creek campuses

If you want to pursue a career in logistics, transportation, distribution, purchasing, production or inventory control, this Associate in Applied Science degree program will interest you. The program's Logistics courses develop skills needed for a successful career in transportation or distribution; Materials Management courses prepare you for purchasing, inventory or production control positions; and Quality Management coursework provides instruction in Six Sigma Green Belt. Core skills include conceptual ability, problem-solving, organizational skills and the ability to meet deadlines.

Career Outlook
The projected employment outlook in the field of supply chain management is very optimistic. Working conditions vary in this career area, and responsibilities may involve pressure to meet precise deadlines. Shift work and overtime are often required.

Added Career Value
Earn the Supply Management or Transportation – Logistics diploma while completing this degree.

Program Learning Outcomes
Employers expect graduates to:
• Demonstrate problem-solving and decision-making skills
• Demonstrate an overall knowledge of logistics in the areas of marketing, transportation, purchasing and customer service
• Apply computer technology to assist in identifying logistics solutions
• Exhibit effective communication skills, both written and oral

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

Start Dates: August/January

For Information
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500

Possible Careers: Buyer, Inventory Supervisor, Production Planner

### TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) COMPSW-106</td>
<td>Introduction to MS Office</td>
<td>3</td>
</tr>
<tr>
<td>(1) LOGMGT-164</td>
<td>Supply Chain Management ^ *</td>
<td>3</td>
</tr>
<tr>
<td>(1) MKTG-102</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>(1) MKTG-107</td>
<td>Customer Service Management ^</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(or MKTG-104 Selling Principles)</td>
<td></td>
</tr>
<tr>
<td>(2) LOGMGT-190</td>
<td>Transportation *</td>
<td>3</td>
</tr>
<tr>
<td>(2) BADM-165</td>
<td>Legal Environment of Business *</td>
<td>3</td>
</tr>
<tr>
<td>(3) MGTDEV-192</td>
<td>Managing for Quality ^</td>
<td>3</td>
</tr>
<tr>
<td>(3) MKTG-185</td>
<td>Negotiation Skills for Business ^</td>
<td>3</td>
</tr>
<tr>
<td>(3) MGTDEV-189</td>
<td>Team Building and Problem-Solving</td>
<td>3</td>
</tr>
<tr>
<td>(3) BADM-104</td>
<td>Business Statistics ^</td>
<td>3</td>
</tr>
<tr>
<td>(3) ACCTG-110</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(or ACCTG-126 Accounting for Managers)</td>
<td></td>
</tr>
<tr>
<td>(4) LOGMGT-170</td>
<td>Purchasing ^</td>
<td>3</td>
</tr>
<tr>
<td>(4) LOGMGT-184</td>
<td>International Logistics – Transportation/Documentation *</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one area of emphasis from these three options:

**MATERIALS MANAGEMENT EMPHASIS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) LOGMGT-144</td>
<td>Production Planning and Inventory Control ^</td>
<td>3</td>
</tr>
<tr>
<td>(4) &amp; LOGMGT-146</td>
<td>Operations Management ^</td>
<td>3</td>
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</table>

**LOGISTICS EMPHASIS**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>(4) LOGMGT-192</td>
<td>Transportation Pricing ^</td>
<td>3</td>
</tr>
<tr>
<td>(4) &amp; LOGMGT-195</td>
<td>Freight Claims ^</td>
<td>3</td>
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**QUALITY MANAGEMENT EMPHASIS**

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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>(4) QETECH-132</td>
<td>Six Sigma Green Belt 1 ^</td>
<td>3</td>
</tr>
<tr>
<td>(4) &amp; QETECH-134</td>
<td>Six Sigma Green Belt 2 ^</td>
<td>3</td>
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</tbody>
</table>

**GENERAL STUDIES**

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series ECON course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ^</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENG-152</td>
<td>Communication Skills 2 ^</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-123</td>
<td>Math with Business Applications ^</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series MATH course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATSCI-149</td>
<td>Introduction to Geographical Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series NATSCI course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series PSYCH course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCSAI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series SOCSAI or HIST course</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUGGESTED ELECTIVES: THREE CREDITS NEEDED**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGTDEV-191</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MKTG-168</td>
<td>Pricing Strategies ^</td>
<td></td>
</tr>
<tr>
<td>QETECH-142</td>
<td>Six Sigma Green Belt Project</td>
<td></td>
</tr>
<tr>
<td>HRMGT-198</td>
<td>Business Ethics</td>
<td></td>
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</tbody>
</table>

**TOTAL CREDITS:** 69

^ Applies toward Transportation-Logistics diploma program.
* Applies toward Supply Management diploma program.
(1) = Sequence for full-time students.
Supply Management

TECHNICAL DIPLOMA Program Code: 30-182-1

All campuses; also offered entirely online

Geared toward providing entry-level employment, this two-semester program provides instruction in the skills and competencies for jobs in supply chain management, purchasing and materials management. Aptitudes that will contribute to your success include the ability to arrive at logical conclusions by relying upon facts and reason, effective interpersonal skills, and the ability to work as a member of a team.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Supply Chain Management associate degree.

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Basic computer skills

Related Programs
Supply Chain Management, Transportation – Logistics, Truck Driving, Marketing Management, Fashion/Retail Marketing, Social Media Strategist

Online Option
This program is offered entirely online or classes may be taken on campus.

Career Outlook
Employment of purchasing managers, buyers and purchasing agents is expected to increase as these workers will be needed to buy goods and services for business operations or for resale to customers.

Program Learning Outcomes
Employers will expect graduates to:
• Represent companies in negotiating contracts and formulating policies with suppliers
• Direct and coordinate activities of personnel engaged in buying, selling, and distributing materials, equipment, machinery and supplies
• Interview and hire staff, and oversee staff training
• Locate vendors of materials, equipment or supplies, and interview them to determine product availability and terms of sales
• Prepare and process requisitions and purchase orders for supplies and equipment
• Develop and implement purchasing and contract management instructions, policies and procedures
• Maintain records of goods ordered and received
• Participate in the development of specifications for equipment, products or substitute materials
• Analyze market and delivery systems to assess present and future material availability
• Resolve vendor or contractor grievances, and claims against suppliers

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>LOGMGT-164</td>
<td>Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>LOGMGT-144</td>
<td>Production Planning and Inventory Control</td>
<td>3</td>
</tr>
<tr>
<td>LOGMGT-146</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>MGTDEV-192</td>
<td>Managing for Quality</td>
<td>3</td>
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<tr>
<td>LOGMGT-170</td>
<td>Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG-185</td>
<td>Negotiation Skills for Business</td>
<td>3</td>
</tr>
<tr>
<td>MKTG-107</td>
<td>Customer Service Management</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 21

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC or 414-297-4500

Possible Careers: Buyer, Procurement Specialist, Material Services Clerk, Buyer/Planner, Inventory Control Clerk, Materials Operations Coordinator
This two-semester program is geared toward providing entry-level employment skills and competencies for jobs in the transportation and logistics industry. Important aptitudes for success include the ability to arrive at logical conclusions by relying upon facts and reason, effective interpersonal skills, and the ability to work as a member of a team.

Online Option
This program is offered entirely online or classes may be taken on campus.

Program Learning Outcomes
Employers will expect graduates to:
• Resolve problems concerning transportation, logistics systems, imports or exports, or customer issues
• Collaborate with other departments to integrate logistics with business systems or processes, such as customer sales, order management, accounting, or shipping
• Maintain metrics, reports, process documentation, customer service logs, or training or safety records.
• Supervise the work of logistics specialists, planners, or schedulers
• Direct inbound or outbound logistics operations, such as transportation or warehouse activities, safety performance, or logistics quality management
• Direct or coordinate comprehensive logistical or reverse logistical functions for product life cycles, including acquisition, distribution, internal allocation, delivery, recycling, reuse or final disposal of resources
• Negotiate with suppliers or customers to improve supply chain efficiency or sustainability
• Direct distribution center operation to ensure achievement of cost, productivity, accuracy or timeliness objectives
• Negotiate transportation rates or services
• Analyze the financial impact of proposed logistics changes, such as routing, shipping modes, product volumes or mixes, or carriers

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Basic computer skills

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC or 414-297-4500

Possible Careers: Logistics Planner, Logistics Coordinator, Logistics Manager, Transportation Coordinator, Import/Export Coordinator
Barber/Cosmetologist Instructor
Downtown Milwaukee Campus
Develop the knowledge and skills required to teach barbering and cosmetology, manicuring or esthetician to new students entering the field. You must hold a Wisconsin license in Barber/Cosmetology and have completed two years of work experience in the profession.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>BARCOS-333</td>
<td></td>
</tr>
<tr>
<td>Barber/Cosmetologist Instructor Techniques – Part 1 ‡ ....</td>
<td>3</td>
</tr>
<tr>
<td>BARCOS-334</td>
<td></td>
</tr>
<tr>
<td>Barber/Cosmetologist Instructor Techniques – Part 2 ‡ ....</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>6</strong></td>
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</tbody>
</table>

Barber/Cosmetologist Manager
Downtown Milwaukee Campus
Students will study principles of marketing, retail management, advertising, workplace communications and more. You must be a Wisconsin-licensed barber/cosmetologist to enter this program.

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>BARCOS-331</td>
<td></td>
</tr>
<tr>
<td>Business Management – Barber/Cosmetologist Manager ‡ ....</td>
<td>3</td>
</tr>
<tr>
<td>BARCOS-332</td>
<td></td>
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<tr>
<td>Communications – Barber/Cosmetologist Manager ‡ ....</td>
<td>3</td>
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<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>6</strong></td>
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</table>

Cisco Internetworking (CCNA)
All Campuses
Become certified and enhance your marketable skills. The Cisco Internetworking certificate includes four courses that prepare you for the Cisco Certified Networking Associate (CCNA) exam. The coursework provides classroom and laboratory experience in current and emerging networking technology.

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>ITNET-131</td>
<td></td>
</tr>
<tr>
<td>Introduction to Networks (Cisco 1) ..................................</td>
<td>3</td>
</tr>
<tr>
<td>ITNET-132</td>
<td></td>
</tr>
<tr>
<td>Routing/Switching Essentials (Cisco 2) ‡ ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITNET-133</td>
<td></td>
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<tr>
<td>Scaling Networks (Cisco 3) ‡ ...............</td>
<td>3</td>
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<tr>
<td>ITNET-134</td>
<td></td>
</tr>
<tr>
<td>Connecting Networks (Cisco 4) ‡ ..........</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>12</strong></td>
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</table>

Information Security Fundamentals
Mequon Campus
Strengthen the skills that are in demand today. This certificate provides students the general body of knowledge of IT security. Topics covered include the 10 domains of information security, fundamentals of networking and network security.

<table>
<thead>
<tr>
<th>COURSES</th>
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</thead>
<tbody>
<tr>
<td>ITNET-101</td>
<td></td>
</tr>
<tr>
<td>Network Communications (Network+) ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITSEC-114</td>
<td></td>
</tr>
<tr>
<td>Information Security Principles ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITSEC-120</td>
<td></td>
</tr>
<tr>
<td>Security Policies and Procedures ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITSEC-124</td>
<td></td>
</tr>
<tr>
<td>Network Security (Security+) ..........................</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>12</strong></td>
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</tbody>
</table>

Infrastructure Security
Mequon Campus
Learn about security of the infrastructure and backbones of the internet. Topics covered include router setup and security, perimeter security, wireless security, information systems security and evaluations.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>TSEC-140</td>
<td></td>
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<tr>
<td>Router Security ..........................</td>
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<tr>
<td>ITSEC-145</td>
<td></td>
</tr>
<tr>
<td>Perimeter Security ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITSEC-146</td>
<td></td>
</tr>
<tr>
<td>Security Measures and Intrusion Detection ..........................</td>
<td>3</td>
</tr>
<tr>
<td>ITSEC-148</td>
<td></td>
</tr>
<tr>
<td>Wireless Security ..........................</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDITS:</strong></td>
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</tr>
</tbody>
</table>

IT Security Auditing
Mequon Campus
This certificate is designed to educate students about IT auditing in general as well as security auditing and testing. Topics covered include pen-test, ethical hacking, security policy and procedures, and application security.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSEC-122</td>
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</tr>
<tr>
<td>Web/Application Security ..........................</td>
<td>3</td>
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<tr>
<td>ITSEC-126</td>
<td></td>
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<tr>
<td>Computer Forensics ..........................</td>
<td>3</td>
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<tr>
<td>ITSEC-146</td>
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</tr>
<tr>
<td>Security Measures and Intrusion Detection ..........................</td>
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<tr>
<td>ITSEC-151</td>
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<tr>
<td>IT – Auditing ..........................</td>
<td>3</td>
</tr>
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<td>ITSEC-152</td>
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<tr>
<td>Information Security Risk Management ..........................</td>
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<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

Nail Technician
Downtown Milwaukee Campus
Learn the skills and knowledge needed to qualify to take the state manicurist license examination, and develop professional skills in a salon-like setting working 16 weeks at 24 hours per week. In addition to tuition and textbooks, students must purchase a tool/equipment kit.

<table>
<thead>
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<tr>
<td>BARCOS-340</td>
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<td>Manicuring Theory ..........................</td>
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<tr>
<td>BARCOS-342</td>
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<tr>
<td>Manicuring Practicum 1 ..........................</td>
<td>4</td>
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<tr>
<td>BARCOS-343</td>
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<tr>
<td>Manicuring Practicum 2 ..........................</td>
<td>4</td>
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<tr>
<td><strong>TOTAL CREDITS:</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Program curriculum requirements are subject to change. ‡ Prerequisite required.
All credits in a certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.

For more information: matc.edu or 414-297-MATC. Page 79
Paralegal
Downtown Milwaukee Campus

This certificate is approved by the American Bar Association (ABA) and is designed for students who already have completed a bachelor’s degree, with at least 18 credits in Liberal Arts courses. After completing this certificate program, students are prepared for employment as a paralegal in the legal community, government, business, and industry; students are required to work under the supervision of an attorney to avoid the unauthorized practice of law.

• Interested students are required to submit an MATC Admissions Application ($30 application fee) online at matc.edu. The program code is 00-110-1.
• Applicants should submit an official college transcript to the Downtown Milwaukee Campus Admissions Office.
• Students admitted to the certificate program can register for paralegal specialty (PLEGAL) courses concurrently with PLEGAL-101 (Introduction to Paralegalism). Certificate students must request prerequisite waivers for the courses they wish to take via their INFOnline account.
• Upon completion of the certificate, students must initiate a request for the certificate from the Downtown Milwaukee Campus. Online classes are available; at least 10 credits of PLEGAL courses must be taken via face-to-face instruction.

A minimum of 18 credits of legal specialty courses at MATC must be completed. Classes are offered face to face at the Downtown Milwaukee Campus. Online classes are available; at least 10 credits of PLEGAL courses must be taken via face-to-face instruction.

<table>
<thead>
<tr>
<th>COURSES</th>
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<tr>
<td>PLEGAL-101 Introduction to Paralegalism</td>
<td>3</td>
</tr>
<tr>
<td>PLEGAL-103 Legal Research ‡</td>
<td>3</td>
</tr>
<tr>
<td>PLEGAL-105 Civil Procedure ‡</td>
<td>3</td>
</tr>
<tr>
<td>PLEGAL-107 Legal Writing ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELECTIVES: Select at least six credits from the following courses: .... 6</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-111 Litigation Practice Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-114 Trusts and Estates – Probate ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-116 Real Estate Law and Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-118 Criminal Practice ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-121 Domestic Relations and Divorce – Practice Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-123 Corporate Practice Systems ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-127 Debtor-Creditor Law ‡</td>
<td></td>
</tr>
<tr>
<td>PLEGAL-140 Legal Interviewing/Investigation ‡</td>
<td></td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
<td>18</td>
</tr>
</tbody>
</table>

Supervisory Management
Mequon and Oak Creek campuses

Learn proven supervisory skills and become a better leader. Three required courses and your choice of electives are offered. Courses may be applied to relevant associate degree programs.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGTDEV-190 Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MGTDEV-191 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HRMGT-193 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>ELECTIVE: Select one of the following courses: .... 3</td>
<td></td>
</tr>
<tr>
<td>MGTDEV-189 Team Building and Problem-Solving</td>
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</tr>
<tr>
<td>MGTDEV-164 Personal Skills for Supervisors</td>
<td></td>
</tr>
<tr>
<td>HRMGT-169 Diversity and Change Management</td>
<td></td>
</tr>
<tr>
<td>MGTDEV-195 Managerial Communications</td>
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</tr>
<tr>
<td>TOTAL CREDITS:</td>
<td>12</td>
</tr>
</tbody>
</table>

System Administration and Security
Mequon Campus

Students learn how to administer Windows servers as well as Linux servers. The emphasis is not only on administration, but also on configuring a secure operating system.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>CREDITS</th>
</tr>
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<tbody>
<tr>
<td>ITNET-112 MS Server Administration 1</td>
<td>3</td>
</tr>
<tr>
<td>ITNET-111 MS Server Administration 2</td>
<td>3</td>
</tr>
<tr>
<td>ITNET-161 Linux Overview</td>
<td>2</td>
</tr>
<tr>
<td>ITSEC-136 Unix/Linux Administration and Security</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
<td>11</td>
</tr>
</tbody>
</table>

Water Technician
Mequon Campus

Gain the core skills recognized by the water industry for an entry-level position. The water technician performs basic, hands-on technical work, and this program is intended to be the first step of a career pathway in the industry. Attaining this certificate also enhances employment opportunities in the water sector for individuals with a college degree. Courses in this program count toward the completion of MATC’s Environmental Health and Water Quality Technology associate degree program. A high school diploma or GED and one semester of high school-level algebra are required for taking this program.

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>ENVHEL-109 Applied Environmental Chemistry</td>
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<td>ENVHEL-142 Principles of Water Resources</td>
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<tr>
<td>MATH-107 College Mathematics ‡</td>
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<td>(or) MATH-115 (or) Any 200-series MATH course</td>
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<tr>
<td>ENG-151 Communication Skills 1 ‡</td>
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<td>(or) Any 200-series ENG course</td>
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<tr>
<td>NATSCI-137 Comprehensive Technical Physics...</td>
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<td>TOTAL CREDITS:</td>
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</table>

Program curriculum requirements are subject to change. ‡ Prerequisite required.
All credits in a certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.

For more information: matc.edu or 414-297-MATC. Page 80
MATC graduates serve the community in a variety of healthcare settings. With hands-on training in the school’s innovative labs and at off-campus clinical sites, MATC’s programs emphasize learning the latest technology associated with these occupations.

**Petition Process**
Most programs in the School of Health Sciences admit students through a petition selection process. The program’s web page on matc.edu has details on the petition process, including residency criteria.

For all degree programs, students who have not been accepted, or have not decided on a program, may begin with General Studies courses if course prerequisites have been met.

**Requirements for School of Health Sciences Programs**
Students must achieve the minimum required grades as specified for the program. All School of Health Sciences students are required to complete and submit a health record profile. Clinical/field placement will not be made if the student fails to meet health and criminal background check documentation requirements.

**Start Your Four-Year Degree at MATC**
Associate degree programs will transfer to one or more four-year colleges or universities. If you are interested in pursuing a bachelor’s degree upon completion of an MATC associate degree program, check with your advisor and the institution you plan to attend regarding the transfer of MATC credits.

**Health Education Center (HEC)**
When you register for classes, note that some courses are taught at the Downtown Milwaukee Campus Health Education Center, 1311 North Sixth Street (Sixth Street and McKinley Avenue).

For class times and locations or to register online, visit INFOline at matc.edu.

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**Cardiovascular Technology**
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Technical Diploma, page 84

**Dental Hygiene**
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Technical Diploma, page 86

**Dietetic Technician**
Associate in Applied Science Degree, page 87

**Funeral Service**
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**Health Information Technology**
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Technical Diploma, page 90

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**Medical Coding Specialist**
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**Medical Interpreter**
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**Medical Laboratory Technician**
(Formerly Clinical Laboratory Technician)
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**Phlebotomy**
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**Surgical Technology**
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**CERTIFICATE PROGRAMS**, page 109

**Dietary Manager**

**Healthcare Customer Service**
Program Learning Outcomes

Employers will expect program graduates to:

• Assist the anesthesiologist with patient care
• Exhibit patient care skills and monitor patients
• Provide psychological support and explain procedures to patients
• Work under minimum supervision
• Perform lifting and transferring duties
• Understand basic anatomy, physiology and surgical procedures
• Apply aseptic techniques in preparing and handling instruments and supplies

Admission Requirements

This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology, chemistry and algebra; and course placement assessment of basic skills proficiency.

Related Programs

Cardiovascular Technology, Surgical Technology

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Anesthesia Technician, Lead Anesthesia Technician, Anesthesia Technician Supervisor

TOTAL CREDITS: 66

# Prerequisite required.
Program curriculum requirements are subject to change.
S = Summer.
() = Semester order for full-time students.
Required Health (HEALTH) and Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.
Applicants to this Associate in Applied Science degree program must specify either the invasive CVT (Cardiac Cath Lab) or noninvasive CVT (Echocardiography) subspecialty. You will learn theoretical concepts and clinical applications of procedures used to diagnose and relieve the symptoms of various cardiac pathologies. The program begins with one year of general CVT coursework, then each subspecialty will focus on its unique curriculum. Hands-on instruction occurs in MATC’s on-campus laboratories and Sim-labs, as well as in Cath Labs and in Echocardiography departments of area hospitals. Clinical externships will include assignments in various local hospitals under the direction of an experienced CVT. The Commission on Accreditation of Allied Health Education Programs accredited both the invasive and echocardiography portions of this program in cooperation with the Joint Review Committee (JRC-CVT).

Successful completion fulfills necessary prerequisites to take Registered Cardiovascular Invasive Specialist exam or Registered Cardiac Sonographer (CCS) or Registered Diagnostic Cardiac Sonographer (ARDMS) exam.

**Career Outlook**
Continuing demand for CVTs indicates exceptional employment possibilities. For career information regarding Cath Lab, visit cathlabdigest.com or sicp.com; for career information regarding Echocardiography, see asecho.org.

**Program Learning Outcomes**
- Exhibit patient care skills
- Explain diagnostic procedures and provide support to patients
- Work independently
- Understand basic anatomy, physiology and operative procedures
- Apply aseptic techniques in preparing and handling instruments
- Work as a member of a healthcare team

**Admission Requirements**
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology, chemistry and algebra; and course placement assessment of basic skills proficiency.

### Start Date: January

**For Information**
Downtown Milwaukee Campus – 414-297-MATC

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**Possible Careers:** Cath Lab Technologist, Echocardiographer

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**TECHNICAL STUDIES**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>(2) CVTECH-102</td>
<td>Introduction to Cardiovascular Technology ‡</td>
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<tr>
<td>(2) CVTECH-110</td>
<td>EKG Analysis ‡</td>
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<tr>
<td>(2) CVTECH-115</td>
<td>Essentials of Cardiovascular Care 1 ‡</td>
<td>4</td>
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<tr>
<td>(2) CVTECH-117</td>
<td>Invasive CVT Fundamentals 1 ‡</td>
<td>4</td>
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<tr>
<td>(2) CVTECH-118</td>
<td>Introduction to Echocardiography ‡</td>
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**INVASIVE (10-521-1.A)**

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<td>Invasive CVT Clinical Procedures ‡</td>
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<tr>
<td>(3) CVTECH-132</td>
<td>Physics of Medicine ‡</td>
<td>3</td>
</tr>
<tr>
<td>(3) CVTECH-134</td>
<td>Cardiovascular Hemodynamics ‡</td>
<td>3</td>
</tr>
<tr>
<td>(3) CVTECH-135</td>
<td>Essentials of Cardiovascular Care 2 ‡</td>
<td>4</td>
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<tr>
<td>(3) CVTECH-137</td>
<td>Invasive CVT Fundamentals 2 ‡</td>
<td>4</td>
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<td>(3) CVTECH-139</td>
<td>Invasive CVT Clinical Experience 1 ‡</td>
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<td>(4) CVTECH-133</td>
<td>Cardiovascular Agents ‡</td>
<td>3</td>
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<tr>
<td>(4) CVTECH-185</td>
<td>Invasive CVT Clinical Seminar ‡</td>
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<td>(4) CVTECH-186</td>
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<td>(4) CVTECH-187</td>
<td>Invasive CVT Clinical Experience 3 ‡</td>
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**ECHOCARDIOGRAPHY (10-521-1.B)**

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<tbody>
<tr>
<td>(5) CVTECH-121</td>
<td>Echocardiography Clinical Procedures ‡</td>
<td>2</td>
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<tr>
<td>(3) CVTECH-142</td>
<td>Echocardiography Case Review ‡</td>
<td>3</td>
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<tr>
<td>(3) CVTECH-140</td>
<td>Echocardiography Instrumentation ‡</td>
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<tr>
<td>(3) CVTECH-144</td>
<td>Advanced Echocardiography Practicum ‡</td>
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<td>(3) CVTECH-145</td>
<td>Echocardiography Fundamentals ‡</td>
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<td>(3) CVTECH-149</td>
<td>Echocardiography Clinical Experience 1 ‡</td>
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<td>(4) CVTECH-143</td>
<td>Ultrasound Principles and Physics ‡</td>
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<td>(4) CVTECH-195</td>
<td>Echocardiography Clinical Seminar ‡</td>
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<td>(4) CVTECH-196</td>
<td>Echocardiography Clinical Experience 2 ‡</td>
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<td>(4) CVTECH-197</td>
<td>Echocardiography Clinical Experience 3 ‡</td>
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**GENERAL STUDIES**

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<tr>
<td>ECON-195</td>
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<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<td>(or) ENG-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
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<tr>
<td>MATH-189</td>
<td>Introductory Statistics ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-197</td>
<td>Microbiology*</td>
<td>4</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<tr>
<td>(or) SOCSCI-210 Death and Dying</td>
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**SUGGESTED ELECTIVES: TWO CREDITS NEEDED**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HEALTH-101</td>
<td>Medical Terminology</td>
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<tr>
<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare</td>
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</tr>
<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
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</table>

### TOTAL CREDITS: 70

* CVT students are not required to take NATSCI-177/179 or 201/202 as prerequisite to NATSCI-197; go to INFOOnline and submit a waiver indicating you are a CVT student.  () = Semester order for full-time students.

S = Summer. Program curriculum requirements are subject to change.

Required Mathematics (MATH) and Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.
Dental Assistant

TECHNICAL DIPLOMA  Program Code: 30-508-2  Downtown Milwaukee Campus

Through this one-semester program, students learn and perform a variety of patient care techniques done under the supervision of the dentist during examination and treatment of patients. Other duties typically performed by a dental assistant include preparing patients for treatment, exposing and processing radiographs, assisting with dental procedures and obtaining dental records. Courses in the curriculum blend both academic and clinical competencies. The student will practice these skills during 128 hours of clinical experience in a dental practice. Attributes that will contribute to your success include a neat and well-groomed appearance, conscientious work habits and good interpersonal skills.

Career Outlook
Employment opportunities for trained dental assistants are plentiful in private offices, hospitals and clinic settings. For more information, visit the Dental Assisting National Board, danb.org or the American Dental Association, ada.org.

Program Learning Outcomes
• Relate dental anatomy and terminology to dental procedures
• Recognize the importance of proper infection control and instrument and equipment sterilization
• Demonstrate proper techniques for exposing, processing and mounting dental x-ray films
• Provide the dentist with accurate patient records
• Provide patients with oral hygiene instruction
• Perform expanded duties such as temporary crown fabrication and coronal polishing
• Prepare treatment rooms for dental procedures
• Demonstrate professionalism, communication and human relation skills, and ethical/legal practices

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu to view the petition process. In addition, one year of high school-level biology or chemistry is helpful for this program.

Related Programs
Dental Hygiene, Dental Technician

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code/Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DENHYG-101 Dental Health Safety ‡</td>
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<td>DENHYG-113 Dental Materials ‡</td>
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<tr>
<td>DENAST-302 Dental Chairside ‡</td>
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<tr>
<td>DENAST-304 Dental and General Anatomy ‡</td>
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<tr>
<td>DENAST-305 Applied Dental Radiography ‡</td>
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<tr>
<td>DENAST-306 Dental Assistant – Clinical ‡</td>
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<tr>
<td>DENAST-307 Dental Assistant Professionalism ‡</td>
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</table>

TOTAL CREDITS: 16

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Career: Dental Assistant
Dental Hygiene

ASSOCIATE DEGREE Program Code: 10-508-1 Downtown Milwaukee Campus

This Associate in Applied Science degree program blends academic and clinical courses. Clinical experience is acquired in the dental hygiene clinic at MATC and several external sites. Upon program completion, you will be eligible to write the National Board of Dental Hygiene examination, and state or regional practical examinations. Licensure is required to work as a dental hygienist. The American Dental Hygienists Association website provides additional professional information at adha.org. This program is accredited with reporting by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the U.S. Department of Education.

Career Outlook
Positions may be found in private dental offices, nursing homes, school settings and private enterprise. The clinical practice includes administering oral prophylaxis, fluoride and local anesthetic; exposing and processing dental x-ray films; and dental health counseling.

Program Learning Outcomes
• Model dental hygiene professional code of ethics
• Counsel patients/clients to reduce health risks
• Provide community oral health services in a variety of settings
• Manage infection and hazard control
• Assess data on all aspects of patient/client health using methods consistent with dental hygienist scope of practice and legal principles
• Formulate a comprehensive dental hygiene care plan in collaboration with the patient/client and other health professionals
• Provide preventive and therapeutic services that promote oral health according to the needs of the patient/client
• Evaluate the effectiveness of the implemented patient/client dental hygiene care plan

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs
Dental Assistant, Dental Technician

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Career: Dental Hygienist

<table>
<thead>
<tr>
<th>TECHNICAL STUDIES</th>
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<tbody>
<tr>
<td>(1) DENHYG-101 Dental Health Safety* ‡</td>
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<td>(1) DENHYG-102 Oral Anatomy, Embryology and Histology ‡</td>
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<td>(1) DENHYG-103 Dental Radiography ‡</td>
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<td>(1) DENHYG-105 Dental Hygiene Process 1 ‡</td>
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<td>(2) DENHYG-106 Dental Hygiene Process 2 ‡</td>
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<td>(2) DENHYG-107 Dental Hygiene Ethics and Professionalism ‡</td>
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<tr>
<td>(2) DENHYG-108 Periodontology ‡</td>
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<tr>
<td>(2) DENHYG-109 Cariology ‡</td>
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<td>(2) DENHYG-110 Nutrition and Oral Health ‡</td>
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<td>(2) DENHYG-111 General and Oral Pathology ‡</td>
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<td>(3) DENHYG-112 Dental Hygiene Process 3 ‡</td>
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<td>(3) DENHYG-114 Dental Pharmacology ‡</td>
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<td>(3) DENHYG-115 Community Dental Health ‡</td>
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<td>(3) DENHYG-116 Dental Pain Management ‡</td>
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<td>(4) DENHYG-117 Dental Hygiene Process 4 ‡</td>
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<td>(or) Any 200-series ECON course</td>
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<td>ENG-151 Communication Skills 1 ‡ .................................. 3</td>
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<tr>
<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<tr>
<td>ENG-152 Communication Skills 2 ‡ .................................. 3</td>
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<tr>
<td>NATSCI-177 General Anatomy and Physiology ‡ .................. 4</td>
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<td>(or) NATSCI-201 and NATSCI-202 Anatomy &amp; Physiology 1 and 2</td>
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<td>NATSCI-186 Introductory Biochemistry ‡ .......................... 4</td>
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<tr>
<td>(or) NATSCI-209 Chemistry for Health Sciences</td>
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<td>NATSCI-197 Microbiology ‡ ............................................. 4</td>
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<td>PSYCH-199 Psychology of Human Relations ....................... 3</td>
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<tr>
<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td>SOCSCI-197 Contemporary American Society ...................... 3</td>
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<tr>
<td>(or) Any 200-series HIST or SOCSCI course</td>
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SUGGESTED ELECTIVES: TWO CREDITS NEEDED .......................... 2
DENHYG-130 Transitions to Dental Practice
DENHYG-165 Clinical Dental Hygiene Practicum
HRMG-169 Diversity and Change Management
PHYED-210 An Active Approach to Wellness and Fitness

TOTAL CREDITS: 70

* Prerequisite required. () = Semester order for full-time students.
Program curriculum requirements are subject to change.
* Take this course prior to starting the Technical Studies courses.
Required Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.
All Liberal Arts and Sciences and elective courses required for the program must be completed with a grade of C or better.
Dental Technician

TECHNICAL DIPLOMA  Program Code: 30-507-1  Downtown Milwaukee Campus

Through this two-semester diploma program, you will gain the knowledge and learn skills to fabricate dental restorations, including metal and ceramic crowns and bridges and complete dentures. The curriculum also includes dental terminology, dental anatomy and occlusion. Students will acquire laboratory skills through hands-on experience in a well-equipped dental laboratory on the MATC campus. Important skills include hand/eye coordination, manual dexterity, and ability to use small hand instruments with precision. You also will need to be an independent worker. After completing a work experience requirement, you may apply for certification by the National Board of Certification.

Career Outlook
An increasing demand for aesthetic dentistry and the aging population are creating a growing demand for dental technicians. Opportunities exist in commercial dental laboratories, and laboratories in dental offices and clinics. Dental technicians also are employed as sales or manufacturers' representatives. For career information, visit National Association of Dental Laboratories at nadl.org or American Dental Association at ada.org.

Program Learning Outcomes
Employers will expect program graduates to:
• Relate concepts of oral anatomy, morphology and occlusion to dental laboratory procedures
• Competently perform laboratory techniques and procedures
• Observe proper infection control procedures
• Use dental terminology appropriately
• Utilize dental materials with consideration of their chemical and physical properties
• Assume the role of the dental laboratory technician as a member of the dental healthcare team

Admission Requirements
This program admits students through a petition selection process; see this program's web page at matc.edu. Also required for admission: High school diploma or GED, and course placement assessment of basic skills proficiency.

Related Programs
Dental Assistant, Dental Hygiene

SIXTEEN-WEEK TERMS  Credits
DLABT-102  Dental Anatomy ‡ ..................................................... 4
DLABT-121  Introduction to Crown and Bridge ‡ ........................... 5
DLABT-111  Introduction to Complete Dentures ‡ ......................... 4
DLABT-128  Dental Ceramics ‡ ..................................................... 5

TOTAL CREDITS:  18

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Dental Ceramicist, Dental Laboratory Technician, Dental Technician, Laboratory Manager
Dietetics is the science of managing food and nutrition to promote health. This Associate in Applied Science degree program provides theoretical instruction, supervised clinical experience and field experience. It is granted accreditation status by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995; 312-899-0040. As a graduate, you are eligible for technician membership in the Academy of Nutrition and Dietetics and will receive the title Dietetic Technician Registered (DTR), signifying professional competence, upon successful completion of the national registration exam. DTRs must complete a Professional Development Portfolio every five years to maintain this credential. You may join a variety of professional organizations, including the Academy of Nutrition and Dietetics, American Dietetics Association and the American Heart Association.

Career Outlook
A dietetic technician typically works as a member of the food service or healthcare team, employed by hospitals, public health nutrition programs, school lunch programs, nutrition programs for the elderly and food service management firms. For career information, visit eatright.org.

Program Learning Outcomes
- Employ effective communication skills (writing, speaking and listening) and use various communication channels
- Perform some of the steps in the Nutrition Care Process in a variety of settings
- Demonstrate effective management skills and behavior
- Demonstrate skills necessary to collaborate effectively with the management team and offering food to clients that is safe, high quality, meets budget, is aesthetically pleasing, and reflects current nutrition practices
- Model professional skills and behaviors (ethical practice, commitment to lifelong learning, collaborate and work well with others)
- Demonstrate the ability to think critically

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Start Date: August
For Information
West Allis Campus – 414-456-5500

### TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>(1) DIETNT-106</td>
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<td>(1) DIETNT-107</td>
<td>Food Science</td>
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<td>(1) DIETNT-123</td>
<td>Dietetic Technician Orientation</td>
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<td>Nutrition for Dietetics</td>
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<td>Medical Terminology for the Dietetic Technician</td>
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<td>Food Service Management 1 ‡</td>
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<td>Medical Nutrition Therapy 1 ‡</td>
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<td>(2) DIETNT-134</td>
<td>Medical Nutrition Therapy 1: Coordinated Practice ‡</td>
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<td>Physiology for Dietetics ‡</td>
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<td>Medical Nutrition Therapy 2: Coordinated Practice ‡</td>
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<td>(4) DIETNT-127</td>
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<td>(4) DIETNT-136</td>
<td>Medical Nutrition Therapy Field Experience ‡</td>
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<td>(4) DIETNT-146</td>
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<td>(4) DIETNT-170</td>
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### GENERAL STUDIES

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<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<td>ENG-152</td>
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<td>MATH-107</td>
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<td>NATSCI-172</td>
<td>Basic Nutritional Science</td>
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<td>(or) NATSCI-200 Introduction to Nutritional Science</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<td>(or) Any 200-series HIST or SOCSCI course</td>
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### SUGGESTED ELECTIVES: THREE CREDITS NEEDED

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<tr>
<td>FLANG-117</td>
<td>Conversational Spanish for Service Occupations 1</td>
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<tr>
<td>SOCSCH-210</td>
<td>Death and Dying</td>
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</table>

TOTAL CREDITS: 70

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Required Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.

Possible Careers: Dietetic Technician, Dietary Manager, Nutrition Counselor, Food Service Manager
Funeral Service

ASSOCIATE DEGREE Program Code: 10-528-1 West Allis Campus

Funeral Service is an associate degree program that prepares you for a career as a licensed funeral director and embalmer. A one-year apprenticeship must be served before or after the Funeral Service program. The Associate in Applied Science degree in the Funeral Service program at Milwaukee Area Technical College is accredited by the American Board of Funeral Service Education (ABFSE), 3414 Ashland Avenue, Suite G, St. Joseph, Missouri 64506; (816) 233-3747; www.ABFSE.org and is recognized by the Wisconsin Funeral Directors Examining Board. This program offers on-campus laboratories fully equipped with state-of-the-art equipment. The curriculum develops skills in arrangement interviewing, merchandising and conducting of funerals. The Funeral Service Internship (FUNERL-105) is required. The annual passage rate of first-time takers of the National Board Examination (NBE) for the most recent three-year period for this institution and all ABFSE-accredited funeral service education programs is posted on the ABFSE website, www.ABFSE.org.

There continues to be high demand for licensed funeral directors and embalmers. For career information, visit www.wfda.org, www.wlda.org or www.ABFSE.org.

Mortuary Science Program Aims
The MATC Funeral Service program has as its central aim recognition of the importance of funeral service personnel as:

- Members of a human services profession;
- Members of the community in which they serve;
- Participants in the relationship between bereaved families and those engaged in the funeral service profession;
- Professionals knowledgeable of and compliant with federal, state and local regulatory guidelines, as well as;
- Professionals sensitive to the responsibility for public health, safety and welfare in caring for human remains.

Mortuary Science Program Objectives
The Mortuary Science Program Objectives are:

- To enlarge the background and knowledge of students about the funeral service profession;
- To educate students in every phase of funeral service, and to help them to develop proficiency and skills necessary for the profession, as defined in the Preamble of the American Board of Funeral Service Education (ABFSE) Standards for accreditation;
- To educate students concerning the responsibilities of the funeral service profession to the community at large;
- To emphasize high standards of ethical and moral conduct;
- To provide a curriculum at the postsecondary level of instruction;
- To encourage student and faculty research in the field of funeral service;
- To qualify students for professional licensure examination.

Program Learning Outcomes
- Prepare the dead human body for viewing, including case analysis, embalming, cosmetizing and restorations
- Comply with OSHA Bloodborne Pathogen Standards
- Demonstrate the abilities to coordinate people and activities
- Anticipate and meet the needs of mourners in a tactful, discreet and compassionate manner
- Apply counseling skills to the arrangement of funerals
- Be familiar with the burial rituals of various religious faiths and fraternal organizations

Admission Requirements – This program admits students through a petition selection process; go to matc.edu and visit this program’s web page to view the petition process, including the residency criteria. This program requires a minimum cumulative GPA of 2.5 to petition.

Special Admission Requirement – A minimum of 57 college credits, in areas specified by the State Board of Examiners, with a grade of C or better, are required for admission into the Funeral Service program.

**TECHNICAL STUDIES**

<table>
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<tr>
<th>Course Code</th>
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<td>Funeral Service Law ‡ ............................................. 2</td>
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<td>FUNERL-112</td>
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<td>FUNERL-113</td>
<td>Embalming 1 ‡ ...................................................... 4</td>
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<td>NATSCI-107</td>
<td>Pathology ‡ .......................................................... 2</td>
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<td>FUNERL-117</td>
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<td>FUNERL-132</td>
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<td>FUNERL-153</td>
<td>Psychology of Funeral Service ‡ ............................... 3</td>
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<td>FUNERL-105</td>
<td>Funeral Service Internship/Embalming ‡ .................... 5</td>
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**GENERAL STUDIES**

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<td>NATSCI-177</td>
<td>General Anatomy and Physiology ‡ ............................ 4</td>
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<td>Microbiology ‡ .................................................... 4</td>
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**SUGGESTED ELECTIVES: SIX CREDITS NEEDED ......................... 6**

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<td>Medical Terminology</td>
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<td>SOCSCI-210</td>
<td>Death and Dying</td>
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**TOTAL CREDITS: 69**

( ) = Semester order for full-time students. ‡ Prerequisite required. Program curriculum requirements are subject to change.
Using the latest technology, health information technicians collect, analyze and report healthcare data while protecting the integrity and confidentiality of patient health information. The health information technician requires knowledge of diseases and treatments, computer systems, regulatory and ethical issues, as well as management and organizational skills. Graduating with this Associate in Applied Science degree, you may work in a variety of healthcare settings such as hospitals, clinics, ambulatory surgery centers, long-term care facilities, in addition to government agencies, insurance companies and IT software companies.

**Career Outlook**
The U.S. Bureau of Labor and Statistics cites health information technology as one of the fastest growing occupational areas in the nation. In the workplace, you also will be introduced to the role of health information manager who is responsible for planning, organizing, controlling, coordinating and following up on all activities in the health information management department.

**Added Career Value**
You can earn the Medical Coding Specialist diploma on your way to completing this associate degree.

**Program Learning Outcomes**
Employers will expect program graduates to:
- Manage health data
- Apply coding and reimbursement systems
- Model professional behavior and ethics
- Maintain electronic applications to manage health information
- Apply organizational management techniques

**Admission Requirements**
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level chemistry; and course placement assessment of basic skills proficiency.

**Related Programs**
Healthcare Services Management, Medical Administrative Specialist, Medical Coding Specialist

**Start Date: August**

For Information
Downtown Milwaukee Campus – 414-297-MATC

### TECHNICAL STUDIES

<table>
<thead>
<tr>
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<td>(1) HIT-182</td>
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<td>ICD Diagnosis Coding ▲</td>
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<td>Introduction to Computing for Healthcare ▲</td>
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<td>(2) HIT-176</td>
<td>Healthcare Data Management ▼ ▲</td>
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<td>(2) HIT-184</td>
<td>CPT Coding ▲</td>
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<td>Healthcare Reimbursement ▼ ▲</td>
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<td>Applied Coding ▲</td>
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<td>(3) HIT-178</td>
<td>Healthcare Law and Ethics ▼</td>
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<td>Professional Practice 1 ▼</td>
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<td>(4) HIT-161</td>
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<td>HIM Organizational Resources ▼</td>
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<td>Professional Practice 2 ▼</td>
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<td>General Anatomy and Physiology ▲</td>
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<td>Introduction to Diversity Studies</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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</table>

**TOTAL CREDITS: 66**

▲ Prerequisite required.
Program curriculum requirements are subject to change.

▼ Counts toward the Medical Coding Specialist diploma program.

( ) = Semester order for full-time students.

Possible Careers: Health Information Technician, Healthcare Office Manager
Health Unit Coordinator

TECHNICAL DIPLOMA Program Code: 30-510-2 Downtown Milwaukee Campus

This fast-paced diploma program prepares you to coordinate non-direct patient care tasks including order transcription, clerical support functions and customer service interactions, as well as taking direction from physicians, nurses and other health professionals. Personal attributes that will contribute to success include professional communication and interpersonal skills, conscientious work habits for punctuality and attendance, empathy, the ability to multitask, as well as work efficiently and accurately under pressure.

Career Outlook
Health unit coordinators are valued professionals on the healthcare team and the demand for this profession continues to grow. Graduates may be employed in hospitals, long-term care facilities or clinics. For career information, visit nahuc.org.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Healthcare Services Management degree program.

Program Learning Outcomes
Employers will expect program graduates to:
• Communicate professionally in the healthcare environment
• Coordinate health unit operations
• Integrate the role of the Health Unit Coordinator in the healthcare system
• Manage client information
• Transcribe medical orders

Related Programs
Healthcare Services Management, Health Information Technology, Registered Nursing

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu to view the petition process.
Demonstration of 30 WPM keyboarding skills with no more than three errors is a co-prerequisite to HUC-303.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Health Unit Coordinator, Nursing Unit Administrative Assistant, Unit Clerk/Secretary
Healthcare Services Management

ASSOCIATE DEGREE  Program Code: 10-530-3 Downtown Milwaukee Campus

This Associate in Applied Science degree program prepares you to demonstrate leadership skills, supervise support staff, and ensure that the healthcare facility’s workflow is running efficiently and according to prescribed quality standards.

Career Outlook
Because employers in healthcare systems seek individuals who can function in multiple capacities, the demand for this profession continues to grow. Graduates may be employed in hospitals, outpatient departments, physicians’ offices, clinics, laboratories and long-term care facilities.

Added Career Value
You can earn a Health Unit Coordinator diploma or Phlebotomy diploma on your way to completing this degree.

Program Learning Outcomes
Employers will expect program graduates to:
• Integrate the skills of healthcare services management within the designated healthcare workplace
• Employ continuous quality standards
• Communicate professionally in the healthcare environment
• Demonstrate leadership skills including multitasking, critical thinking, problem-solving/decision-making, diplomacy, prioritization and accuracy
• Employ a strong work ethic
• Maintain a safe work environment for support staff as well as external and internal customers
• Assist support medical staff as needed
• Assign and regulate support staff functions including delegating responsibility

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Students who seek diploma preparation opportunities before/while completing the requirements for Healthcare Services Management will choose either Career Path One or Career Path Two. Career Path Three is for students who have healthcare-related program preparation or a previously earned degree or diploma.

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Healthcare-related Manager, Supervisor, Lead Worker

TECHNICAL STUDIES

<table>
<thead>
<tr>
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<tbody>
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<td>HEALTH-101</td>
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<td>HEALTH-104</td>
<td>Healthcare Customer Service</td>
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<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare</td>
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<td>RBUS-102</td>
<td>Mathematics of Business</td>
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<td>BADM-155</td>
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<td>Legal Environment of Business</td>
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<td>Human Resource Management</td>
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<td>Introduction to the Business of Healthcare</td>
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<td>Healthcare Law, Ethics and Professional Standards</td>
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<td>HSM-146</td>
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<td>BADM-126</td>
<td>Business Finance</td>
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Career Path One (Diploma Preparation):
HEALTH UNIT COORDINATOR
(2) HSM-140 Health Unit Coordinator Procedures 1 ‡ .......................... 3
(3) HSM-141 Health Unit Coordinator Procedures 2 ‡ .......................... 3
(4) HSM-142 Health Unit Coordinator Clinical Externship ‡ .............. 3

Career Path Two (Diploma Preparation):
PHLEBOTOMY
(2) CLABT-110 Basic Lab Skills ‡ ............................................. 1
(2) CLABT-111 Phlebotomy ‡ .................................................. 2
(3) MLABT-161 Computer Applications for the Medical Lab ‡ .............. 1
(3) MLABT-166 Phlebotomy Clinical Experience ‡ .......................... 3
Two Credits of Electives ......................................................... 3

Career Path Three (Advanced):
HEALTH SCIENCES RELATED PREPARATION
Students who have healthcare-related program preparation or a previously earned diploma/degree are eligible to receive up to nine credits of Advanced Standing toward the Healthcare Services Management associate degree.

GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</table>
| ECON-195    | Economics .................................................................. 3
| ENG-151     | Communication Skills 1 ‡ ...................................... 3
| ENG-152     | Communication Skills 2 ‡ ...................................... 3
| MATH-107    | College Mathematics ‡ ......................................... 3
| NATSCI-189  | Basic Anatomy                                          | 3       |
| PSYCH-199   | Psychology of Human Relations                           | 3       |
| SOCSCE-197  | Contemporary American Society                           | 3       |

‡ Prerequisite required.
Program curriculum requirements are subject to change.
(1) = Semester order for full-time students.

TOTAL CREDITS: 69
Medical Assistant

Program Code: 31-509-1

Medical Assistant is a two-semester technical diploma program that emphasizes the skills and knowledge needed to obtain employment in doctors’ offices, clinics, hospitals and other medical facilities. During the Medical Assistant clinical course, you will have an opportunity to acquire experience in healthcare facilities. A healthcare provider Cardiopulmonary Resuscitation (CPR) certificate and a first aid certificate are prerequisites for entry into the first clinical course. As a graduate of the program, you will be eligible to write the AAMA exam to qualify as a Certified Medical Assistant.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (caahp.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB) Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL 33756; 727-210-2350.

Career Outlook

The demand for Certified Medical Assistants continues to grow. Graduates perform various functions such as drawing blood, administering EKGs and doing lab procedures. In some medical offices, medical assistants also serve as receptionists and billing clerks. For career information, visit aama-ntl.org.

Program Learning Outcomes

- Perform clerical functions
- Perform bookkeeping procedures
- Prepare special accounting entries
- Apply principles of medical asepsis
- Perform specimen collection
- Perform diagnostic testing
- Process insurance claims
- Provide patient care
- Communicate effectively
- Apply legal and ethical concepts
- Instruct patients
- Perform medical office operational functions
- Demonstrate professionalism in a healthcare setting

Related Programs

Health Unit Coordinator, Medical Administrative Specialist, Medical Coding Specialist

Admission Requirements

This program admits students through a petition selection process; see the program’s web page at matc.edu. Prior coursework in biology is recommended.

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>HEALTH-101</td>
<td>Medical Terminology*</td>
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<tr>
<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare*</td>
<td>2</td>
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<tr>
<td>MEDAST-301</td>
<td>Medical Assistant Administrative Procedures ‡</td>
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<tr>
<td>MEDAST-302</td>
<td>Human Body in Health and Disease* ‡</td>
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<td>MEDAST-303</td>
<td>Medical Assistant Lab Procedures 1 ‡</td>
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<td>MEDAST-304</td>
<td>Medical Assistant Clinical Procedures 1 ‡</td>
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<td>MEDAST-305</td>
<td>Medical Assistant Laboratory Procedures 2 ‡</td>
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<tr>
<td>MEDAST-306</td>
<td>Medical Assistant Clinical Procedures 2** ‡</td>
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<td>MEDAST-307</td>
<td>Medical Office Insurance and Finance ‡</td>
<td>2</td>
</tr>
<tr>
<td>HEALTH-308</td>
<td>Pharmacology for Allied Health ‡</td>
<td>2</td>
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<tr>
<td>MEDAST-309</td>
<td>Medical Law, Ethics and Professionalism</td>
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<tr>
<td>MEDAST-310</td>
<td>Medical Assistant Practicum** ‡</td>
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<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
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</tbody>
</table>

TOTAL CREDITS: 33

* May be taken prior to entering the program.
** MEDAST-306 and MEDAST-310 must be taken in the same semester.

All MEDAST courses must be completed within 18 months of starting technical courses in the program.

Possible Careers: Medical Assistant, Certified Medical Assistant (CMA), Office Manager

Start Dates: August/January

For Information

Downtown Milwaukee Campus – 414-297-MATC

Milwaukee Area Technical College

School of Health Sciences
Medical Coding Specialist
TECHNICAL DIPLOMA Program Code: 31-530-2 Downtown Milwaukee Campus

The Medical Coding Specialist program prepares students for employment as entry-level coding specialists in a variety of healthcare settings. Students learn to assign diagnosis and procedure codes using two different coding systems. These codes are taken from patient records and physician documentation. The codes are used for billing and reimbursement purposes, as well as data collection and medical research.

Career Outlook
Graduates of this program can become certified through the American Health Information Management Association and the American Academy of Professional Coders. The employment outlook is favorable.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Health Information Technology degree program.

Program Learning Outcomes
Employers will expect program graduates to:
• Classify medical data from patient records
• Review patients’ records and assign numeric codes for each diagnosis and procedure
• Have expertise in the various coding systems
• Work with detailed data quickly and accurately
• Demonstrate professionalism in a healthcare setting
• Be an integral member of the healthcare team
• Communicate effectively

Admission Requirements
This program admits students through a petition selection process; see this program's web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level chemistry; and course placement assessment of basic skills proficiency.

Related Programs
Health Information Technology, Medical Administrative Specialist

SIXTEEN-WEEK TERMS Credits
HEALTH-101 Medical Terminology ................................................................. 3
HIT-181 Introduction to the Health Record ‡ ........................................ 1
NATSCI-177 General Anatomy/Physiology ............................................. 4
HIT-182 Human Disease for Health Professions ‡ ................................ 3
HEALTH-107 Introduction to Computing for Healthcare ....................... 2
HIT-197 ICD Diagnosis Coding ................................................................. 3
HIT-199 ICD Procedure Coding ................................................................. 2
HIT-184 CPT Coding ‡ ........................................................................... 3
HIT-185 Healthcare Reimbursement ‡ .................................................. 2
HIT-195 Applied Coding ‡ ........................................................ ............... 2
HIT-176 Healthcare Data Management ‡ ............................................. 2

TOTAL CREDITS: 27

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Date: August
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Career: Medical Coder
Medical Interpreter

**TECHNICAL DIPLOMA** Program Code: 30-538-1 Downtown Milwaukee Campus

This two-semester program prepares you for employment to facilitate communication between medical personnel and patients with limited English proficiency. It will enhance your nonverbal communication, knowledge of regional language variations and cultural nuances required for effective medical interpretation. Personal attributes that will contribute to success as a medical interpreter include: Spanish/English proficiency, effective communication and interpersonal skills, conscientious work habits as related to punctuality and attendance, empathy to work with patients with limited English proficiency, and the ability to perform efficiently and accurately under pressure.

**Career Outlook**
This program prepares you to provide interpretation services for patients with limited English proficiency and families whose primary language is Spanish. The increasing need for professionals within this growing field is due to our changing demographics, the need to provide quality of care through effective communication, the demands of cost efficiency, patient satisfaction and federal laws requiring language assistive services. For additional career information, visit ncihc.org or imiaweb.org.

**Program Learning Outcomes**
Employers will expect program graduates to:
- Aurally comprehend spoken English and Spanish
- Construct syntactically correct sentences (oral and written) in Spanish and English
- Correctly utilize medical terminology in English and Spanish
- Comprehend written materials in English and Spanish
- Render sight translations from either English to Spanish or Spanish to English

**Admission Requirements**
This program admits students through a petition selection process. Please see this program’s web page at matc.edu to view the petition process.

**Related Programs**
Health Unit Coordinator, Medical Assistant, Practical Nursing

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**SIXTEEN-WEEK TERMS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDINT-107</td>
<td>Bilingual Medical Terminology</td>
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<tr>
<td>MEDINT-103</td>
<td>Introduction to Medical Interpretation ‡</td>
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</tr>
<tr>
<td>MEDINT-104</td>
<td>Applied Medical Interpretation 1</td>
<td>3</td>
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<tr>
<td>MEDINT-112</td>
<td>Dual Language Enhancement for Healthcare Providers ‡</td>
<td>3</td>
</tr>
<tr>
<td>MEDINT-108</td>
<td>Ethics and Standards for Medical Interpreters</td>
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<tr>
<td>MEDINT-101</td>
<td>Cultural Awareness</td>
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<tr>
<td>MEDINT-102</td>
<td>Spanish Regionalisms and English Variants</td>
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<tr>
<td>MEDINT-106</td>
<td>Introduction to Medical Translation</td>
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<td>MEDINT-110</td>
<td>Applied Medical Interpretation 2</td>
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<tr>
<td>MEDINT-111</td>
<td>Applied Medical Interpretation 3 ‡</td>
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</tbody>
</table>

**TOTAL CREDITS:** 24

‡ Prerequisite required.
Program curriculum requirements are subject to change.
All credits in this diploma must be earned at MATC with a 2.0 GPA or higher.

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**Possible Careers:** Medical Interpreter, Medical Translator

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC
ASSOCIATE DEGREE Program Code: 10-513-1 Downtown Milwaukee Campus

Medical Laboratory Technician

Formerly Clinical Laboratory Technician
Prepare for employment as a medical laboratory technician (MLT) or clinical laboratory technician (CLT) in hospitals, clinics and doctors’ offices through this Associate in Applied Science degree program. Opportunities also exist in commercial industries, scientific research and infection control. Students must be in attendance four to five days each week. Clinical experiences near the program’s end are arranged at clinical laboratories. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018; 312-714-8880. Upon completion of the program, you are eligible to write national certifying examinations.

Career Outlook
Currently the job market looks favorable. In the laboratory, the MLT and CLT perform analytical procedures under the supervision of a medical technologist or physician. For career information, visit ascp.org.

Program Learning Outcomes
- Apply modern clinical methodologies, including problem-solving and troubleshooting according to predetermined criteria
- Collect and process biological and other specimens
- Perform and report results of clinical laboratory tests
- Apply laboratory results to diagnosis of clinical conditions and/or diseases
- Participate in training peers on technical skills
- Monitor and evaluate quality control in the laboratory
- Practice laboratory safety and regulatory compliance
- Communicate with colleagues and patients in a professional manner
- Perform information processing in the clinical laboratory
- Model professional behavior, ethics and appearance

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level (or one semester of college-level) biology, chemistry and algebra; and course placement assessment of basic skills proficiency.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES Credits
(1) HEALTH-101 Medical Terminology ...........................................3
(2) CLABT-110 Basic Lab Skills .........................................................1
(2) CLABT-111 Phlebotomy ‡ .............................................................2
(3) CLABT-113 QA Lab Math ‡ ............................................................1
(3) CLABT-114 Urinalysis ‡ ...............................................................2
(3) CLABT-115 Basic Immunology Concepts ..................................2
(3) CLABT-120 Basic Hematology ‡ .................................................3
(3) CLABT-121 Coagulation ‡ ............................................................1
(3) CLABT-109 Blood Bank ‡ ......................................................... 4
(4) CLABT-130 Advanced Hematology ‡ .......................................2
(4) CLABT-131 Clinical Chemistry 1 ‡ ..........................................3
(4) CLABT-132 Clinical Chemistry 2 ‡ ............................................2
(4) CLABT-133 Clinical Microbiology ‡ .........................................4
(4) CLABT-140 Advanced Microbiology ‡ ....................................2
(4) CLABT-143 Seminar ‡ .................................................................1
(4) CLABT-151 Clinical Experience 1 ‡ .........................................3
(4) CLABT-152 Clinical Experience 2 ‡ .........................................4

GENERAL STUDIES
ECON-195 Economics .................................................................3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡ ............................................3
(8) ENG-152 Communication Skills 2 ‡ .......................................3
(or) ENG-201 and any 200-series ENG or SPEECH course
NATSCI-177 General Anatomy and Physiology ‡ ..................4
(or) NATSCI-201 and NATSCI-202 Anatomy & Physiology 1 and 2
NATSCI-186 Introductory Biochemistry ‡ ................................4
(or) NATSCI-209 Chemistry for the Health Sciences
NATSCI-197 Microbiology ‡ ..........................................................4
PSYCH-199 Psychology of Human Relations ............................3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society .........................3
(or) Any 200-series HIST or SOCSCI course

TOTAL CREDITS: 67

† Prerequisite required.
Program curriculum requirements are subject to change.
(8) = Semester order for full-time students.
Required Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.

Possible Careers: Clinical Laboratory Technician, Medical Laboratory Technician

Page 95
Nursing Assistant

TECHNICAL DIPLOMA  Program Code: 30-543-1  Downtown Milwaukee, Oak Creek and West Allis campuses

Nursing Assistant is a three-credit technical diploma program designed to prepare you for employment as an entry-level bedside caregiver in healthcare facilities such as hospitals and nursing homes, and home-health facilities. Students are instructed in English, but selected sections are specific for the bilingual learner with instruction given in English and Spanish or with Spanish-language support from the bilingual education center. The Nursing Assistant course focuses on introducing basic nursing skills and procedures needed to assist hospital clients, nursing home residents and home health clients with their daily living activities, specialized care and communication needs. Course curriculum and instruction focuses on preparation for the National Nurse Aide Assessment Program (NNAAP) and the state nurse aide curriculum. Graduates of the program are eligible to take part in NNAAP activities upon completion of the course; cost for this testing is not included in course fees or tuition.

Career Outlook
Employment opportunities are available through nursing homes, hospitals, home health agencies and private-duty practice settings. These positions work under the direction and supervision of licensed medical personnel, primarily registered nurses or licensed practical nurses.

Program Learning Outcomes
Employers will expect program graduates to:
• Provide safe, competent care to patients
• Practice principles of infection control
• Be able to identify and perform job-related procedures with attention to detail
• Work efficiently under pressure
• Possess good listening skills with an ability to follow instructions
• Demonstrate effective communication and observational skills
• Exercise tact and patience in interactions with others

Related Programs
Medical Assistant, Phlebotomy, Renal Dialysis Technician

Admission Requirements
Health requirements, criminal background check and additional documents are required for admission; see this program’s web page at matc.edu. A high school diploma or GED is recommended.
Success in the program is highly dependent on having a sincere concern for people; good physical and emotional health; excellent attendance record; an ability to communicate effectively with other healthcare personnel, patients and their families; and a neat, well-groomed appearance.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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<tr>
<td>NRSNA-300 Nursing Assistant ‡</td>
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</table>

TOTAL CREDITS: 3

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Nurse Aide, Nursing Assistant, Patient Care Assistant (PCA), Home Health Aide

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500
This Associate in Applied Science degree program prepares you to become a Certified Occupational Therapy Assistant (COTA), or for related employment. The COTA typically provides services under the supervision of an occupational therapist using goal-directed activities to prevent, lessen or overcome difficulty in attaining, maintaining or developing occupations: daily living skills, play, leisure and/or work skills. A healthcare provider Cardiopulmonary Resuscitation (CPR) certificate is a prerequisite for entry into fourth clinical course; OTA program must be completed within four years. This program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), c/o Accreditation Department, American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449; 301-652-2682; acoteonline.org. Program graduates will be able to write the National Certification Examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the exam, you will be a COTA. To practice as an OTA, a graduate must apply for licensure in the state of Wisconsin.

**Career Outlook**

Job placement is usually in hospitals, geriatric centers, schools and homes. See information at promoteot.org.

**Program Learning Outcomes**

- Adhere to the ethical standards, values and attitudes of the occupational therapy profession
- Practice within the distinct role and responsibility of the occupational therapy assistant
- Advocate for the profession and consumers
- Apply occupational therapy principles and intervention tools to achieve expected outcomes
- Serve a diverse population in a variety of systems that are consistent with entry-level practice
- Value lifelong learning and the need to keep current with best practices

**Admission Requirements**

This program admits students through a petition selection process; see this program's web page at matc.edu. Also required: High school diploma or GED; one year of high school-level or one semester of college-level algebra, biology and chemistry with a grade of C or better for each course; and course placement assessment of basic skills proficiency.

**Start Date: August**

**For Information**

Downtown Milwaukee Campus – 414-297-MATC

### TECHNICAL STUDIES

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>OTASST-171</td>
<td>Introduction to Occupational Therapy ‡</td>
<td>3</td>
</tr>
<tr>
<td>OTASST-172</td>
<td>Medical and Psychosocial Conditions # ‡</td>
<td>3</td>
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<tr>
<td>OTASST-173</td>
<td>Activity Analysis and Application ‡</td>
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<td>OTASST-174</td>
<td>OT Performance Skills ‡</td>
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<td>OTASST-176</td>
<td>OT Theory and Practice ‡</td>
<td>3</td>
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<tr>
<td>OTASST-177</td>
<td>Assistive Technology and Adaptations ‡</td>
<td>2</td>
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<tr>
<td>OTASST-178</td>
<td>Geriatric Practice ‡</td>
<td>3</td>
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<tr>
<td>OTASST-175</td>
<td>Psychosocial Practice ‡</td>
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<tr>
<td>OTASST-179</td>
<td>Community Practice ‡</td>
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<td>OTASST-182</td>
<td>Physical Rehabilitation Practice ‡</td>
<td>3</td>
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<td>OTASST-183</td>
<td>Pediatric Practice ‡</td>
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<td>OTASST-184</td>
<td>OTA Fieldwork ‡</td>
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<tr>
<td>OTASST-185</td>
<td>OT Practice and Management # ‡</td>
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<td>OTASST-186</td>
<td>OTA Fieldwork 2A* ‡</td>
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<tr>
<td>OTASST-187</td>
<td>OTA Fieldwork 2B* ‡</td>
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### GENERAL STUDIES

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<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<tr>
<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
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<tr>
<td>NATSCI-177</td>
<td>General Anatomy and Physiology ‡</td>
<td>4</td>
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<tr>
<td>PSYCH-159</td>
<td>Abnormal Psychology ‡</td>
<td>3</td>
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<tr>
<td>PSYCH-188</td>
<td>Developmental Psychology ‡</td>
<td>3</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations ‡</td>
<td>3</td>
</tr>
<tr>
<td>SOCSCI-172</td>
<td>Introduction to Diversity Studies ‡</td>
<td>3</td>
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### SUGGESTED ELECTIVES: THREE CREDITS NEEDED

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<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare</td>
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<td>HEALTH-160</td>
<td>Study Strategies for Health Occupations</td>
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<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
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<tr>
<td>SOCSSCI-210</td>
<td>Death and Dying</td>
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</table>

**TOTAL CREDITS: 70**

‡ Prerequisite required.

Program curriculum requirements are subject to change.

(1) = Semester order for full-time students.

# OTASST-172 and OTASST-185 are online courses.

* OTASST-186 and OTASST-187 must be completed within 18 months following academic coursework.

OTA program must be completed within four years.

Required Natural Science (NATSCI) courses must be completed with a grade of C or better in each course.

**Possible Careers:** Certified Occupational Therapy Assistant, Occupational Therapy Assistant
Optician – Vision Care

TECHNICAL DIPLOMA  Program Code: 31-516-3  Downtown Milwaukee Campus

Learn how to construct eyewear, take accurate measurements, fit and adjust glasses and assist patients in the selection of frames and lens materials. In addition, the program prepares you to perform preliminary eye examinations and educate patients about contact lens selection, use and care. In the second semester, students put their skills into practice working in the on-campus optical dispensary. Graduates can sit for the American Board of Opticianry competency examination and/or National Contact Lens Examination.

Career Outlook
Employment opportunities are expected to increase due to growth in public awareness of the importance of good eyesight, the availability of vision screening programs, and the aging population. For additional career information, visit bls.gov/ooh/healthcare/opticians-dispensing.htm.

Program Learning Outcomes
Employers will expect program graduates to:
• Lay out, grind, fine and polish ophthalmic lenses
• Machine and hand-edge lenses
• Tint lenses
• Insert lenses into a variety of frames
• Verify finished eyewear for accuracy
• Adjust, fit and repair ophthalmic frames
• Display knowledge of contact lens theory, design and use
• Perform preliminary examinations
• Demonstrate an understanding of optical business procedures
• Demonstrate knowledge of legal and ethical standards

Admission Requirements
This program admits students through a petition selection process. Please see this program’s web page at matc.edu to view the petition process.

Related Programs
Dental Technician, Practical Nursing

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OPTSCI-110</td>
<td>Optical Theory and Principles ‡</td>
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<td>OPTSCI-111</td>
<td>Orientation to Ophthalmic Dispensing ‡</td>
<td>3</td>
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<tr>
<td>OPTSCI-112</td>
<td>Ocular Anatomy and Physiology ‡</td>
<td>2</td>
</tr>
<tr>
<td>OPTSCI-113</td>
<td>Lab Procedures – Surfacing (8 weeks)</td>
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<tr>
<td>OPTSCI-114</td>
<td>Lab Procedures – Finishing ‡ (8 weeks)</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
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<tr>
<td>OPTSCI-115</td>
<td>Introduction to Contacts ‡</td>
<td>3</td>
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<tr>
<td>OPTSCI-116</td>
<td>Optical Business Management ‡</td>
<td>3</td>
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<tr>
<td>OPTSCI-117</td>
<td>Optical Clinic – Advanced Lab and Dispensary Techniques ‡</td>
<td>4</td>
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<tr>
<td>OPTSCI-119</td>
<td>ABO Certification Review ‡</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 27

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Career: Optical Technician
Program Learning Outcomes

• Select/prepare/package medications under the supervision of a registered pharmacist
• Label drugs, chemicals and other pharmaceutical preparations as directed
• Deliver medication orders accurately
• Prepare inventory and receive and place supplies in stock
• Compound pharmaceuticals pursuant to written protocol
• Understand and utilize the principles of aseptic technique for the preparation of sterile products
• Clean and sterilize equipment and work areas as directed
• Compute charges and perform basic record-keeping
• Demonstrate computer skills (word processing, spreadsheets and internet)
• Follow detailed procedures with accuracy
• Apply mathematical concepts to dosage calculations
• Communicate effectively with customers and members of the healthcare team
• Adhere to state and federal regulations governing the practice of pharmacy
• Abstract relevant information from references and medication labels
• Comprehend principles of basic pharmacology
• Exhibit a high standard of personal discipline

Career Outlook

Due to a shortage of registered pharmacists, changes related to the medication delivery system and the aging population, there is a need for trained pharmacy technicians.

This two-semester program provides students with the skills and knowledge needed to become a pharmacy technician in a variety of practice settings. Pharmacy technicians work under the supervision of a pharmacist in delivery of pharmaceutical care. During the clinical courses, students acquire experience in community and institutional pharmacies. This program may be taken on a part-time basis. All graduates must be 18 years of age or older. This program is accredited by the American Society of Health-System Pharmacists (ASHP).

Admission Requirements

This program admits students through a petition selection process; see this program’s web page at matc.edu. A working knowledge of mathematics, including elementary algebra, is strongly recommended.

SIXTEEN-WEEK TERMS Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ENG-151</td>
<td>Communication Skills †</td>
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<td>(or) ENG-201</td>
<td>English 1 †</td>
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<tr>
<td>HEALTH-101</td>
<td>Medical Terminology</td>
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<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare</td>
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<tr>
<td>OFTECH-103</td>
<td>Keyboard and Keypad*</td>
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<td>PHARMT-300</td>
<td>Orientation to Pharmacy Operations †</td>
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<td>PHARMT-302</td>
<td>Pharmaceutical Calculations †</td>
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<td>PHARMT-303</td>
<td>Introduction to Drug Classification †</td>
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<td>PHARMT-306</td>
<td>Pharmacy Clinical Experience 1 †</td>
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<td>Federal Laws, Ethics and Customer Service †</td>
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<td>PHARMT-310</td>
<td>Institutional Pharmacy Practice †</td>
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<td>PHARMT-311</td>
<td>Orientation to Sterile Solutions †</td>
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<td>Applied Pharmaceutical Calculations †</td>
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<td>Psychology of Human Relations</td>
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<td>(or) PSYCH-231</td>
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</table>

TOTAL CREDITS: 29

† Prerequisite required.
Program curriculum requirements are subject to change.
* This requirement may be satisfied with an acceptable score on the Challenge Exam through the School of Business.
Phlebotomy

**Program Learning Outcomes**

- Collect, transport, handle and process blood specimens for analysis
- Recognize the importance of specimen collection in the overall patient care system
- Relate the anatomy and physiology of body systems and anatomic terminology to the major areas of the clinical laboratory, and to general pathologic conditions associated with body systems
- Identify and select equipment, supplies and additives used in blood collection
- Recognize factors that affect specimen collection procedures and test results, and take appropriate actions within predetermined limits, when applicable
- Recognize and adhere to infection control and safety policies and procedures; monitor quality control within predetermined limits
- Recognize the various components of the healthcare delivery system; recognize the responsibilities of other laboratory and healthcare personnel and interact with them with respect for their jobs and patient care
- Demonstrate professional conduct, stress management, interpersonal and communication skills with patients, peers and other healthcare personnel
- Demonstrate an understanding of requisitioning and the legal implications of the work environment
- Apply basic principles in learning new techniques
- Recognize and act upon individual needs for continuing education as a function of growth and maintenance of professional competence
- Upon graduation and initial employment, the phlebotomist will be able to demonstrate entry-level competencies in the above areas of professional practice. Refer to the NAACLS Phlebotomist Competencies.

**Admission Requirements**

This program admits students through a petition selection process; see this program’s web page at matc.edu.

**Added Career Value**

After earning this diploma, the credits can be applied toward completing the Healthcare Services Management degree.

**Related Programs**

Health Unit Coordinator, Medical Assistant, Medical Laboratory Technician, Pharmacy Technician

**SIXTEEN-WEEK TERMS**

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>Basic Lab Skills</td>
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<td>Phlebotomy</td>
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<td>ENG-151</td>
<td>Communication Skills ‡</td>
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<tr>
<td>HEALTH-101</td>
<td>Medical Terminology*</td>
<td>3</td>
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<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare*</td>
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<tr>
<td>MLABT-161</td>
<td>Computer Applications for the Medical Laboratory ‡</td>
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<td>MLABT-166</td>
<td>Phlebotomy Clinical Experiences ‡</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations*</td>
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**TOTAL CREDITS:** 18

‡ Prerequisite required.
Program curriculum requirements are subject to change.
* May be taken prior to entering the program.
CLABT-110, CLABT-111 and MLABT-161 are co-requisites. Students need to have the knowledge base of CLABT-110 and CLABT-111 to take MLABT-161.

**Start Dates:** August/January

**For Information**

Downtown Milwaukee Campus – 414-297-MATC
West Allis Campus – 414-456-5500

**Milwaukee Area Technical College**
School of HEALTH SCIENCES

**Possible Careers:** Laboratory Assistant, Medical Laboratory Technology, Phlebotomist
Prepare for a career as a physical therapist assistant, working in a hospital, nursing home, rehabilitation center, school, private clinic or other healthcare setting, through this Associate in Applied Science degree program. Under the supervision of a physical therapist, duties include implementing treatment programs, teaching patients to perform exercises and daily living activities, conducting treatments using special equipment, and reporting the patient's progress to the physical therapist. The program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, VA 22314; 703-706-3245; accreditation@apta.org; capteonline.org.

Career Outlook
The need for physical therapist assistants is projected to grow due to increases in the geriatric population. Wisconsin requires licensure before the physical therapist assistant may practice in this state.

Program Learning Outcomes
• Exhibit behaviors and conduct that reflect respect and sensitivity according to physical therapy practice standards
• Demonstrate critical thinking skills to implement and adjust a plan of care under the direction and supervision of a physical therapist
• Produce documentation to support the delivery of physical therapy services
• Function under the supervision of a physical therapist in a safe, legal, ethical manner
• Demonstrate effective communication with patients, families and the healthcare team
• Perform technically competent physical therapy interventions under the direction and supervision of a physical therapist
• Educate patients, families and other health providers
• Integrate components of administrative, operational and fiscal practices of physical therapy service in a variety of settings
• Implement a self-directed plan for career development, credentialing and lifelong learning

Related Programs
Occupational Therapy Assistant, Practical Nursing, Registered Nursing

Start Date: January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Admission Requirements
This program admits students through a petition selection process; see this program's web page at matc.edu. Also required: High school diploma or GED; one year of high school-level algebra, biology, chemistry or physics; and course placement assessment of basic skills proficiency.

**TECHNICAL STUDIES**

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<tr>
<th>Course Code</th>
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<td>PTASST-138</td>
<td>PTA Kinesiology 1 ‡</td>
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<td>PTASST-139</td>
<td>PTA Patient Interventions ‡</td>
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<td>PTASST-140</td>
<td>PTA Professional Issues 1 ‡</td>
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<td>PTASST-141</td>
<td>PTA Kinesiology 2 ‡</td>
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<td>PTASST-142</td>
<td>PTA Therapeutic Exercise ‡</td>
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<tr>
<td>PTASST-143</td>
<td>PTA Therapeutic Modalities ‡</td>
<td>4</td>
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<tr>
<td>PTASST-145</td>
<td>PTA Principles of Musculoskeletal Rehabilitation ‡</td>
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<tr>
<td>PTASST-144</td>
<td>PTA Principles of Neuromuscular Rehabilitation ‡</td>
<td>4</td>
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<tr>
<td>PTASST-146</td>
<td>PTA Management of Cardiopulmonary and Integumentary Conditions ‡</td>
<td>3</td>
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<tr>
<td>PTASST-147</td>
<td>PTA Clinical Practice 1 ‡</td>
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<td>PTASST-148</td>
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<td>Professional Issues 2 ‡</td>
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<td>PTA Clinical Practice 3 ‡</td>
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**GENERAL STUDIES**

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<td>Communication Skills 1 ‡</td>
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<td>MATH-107</td>
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<tr>
<td>NATSCI-177</td>
<td>General Anatomy and Physiology ‡</td>
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<td>PSYCH-159</td>
<td>Abnormal Psychology</td>
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<td>PSYCH-199</td>
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<td>SOCSCE-172</td>
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**SUGGESTED ELECTIVES: THREE CREDITS NEEDED** 3

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<td>An Active Approach to Wellness and Fitness</td>
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<td>HEALTH-101</td>
<td>Medical Terminology</td>
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<td>PSYCH-240</td>
<td>Health Psychology ‡</td>
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<tr>
<td>OFTECH-103</td>
<td>Keyboard and Keypad</td>
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**TOTAL CREDITS:** 70

‡ Prerequisite required. () = Semester order for full-time students. Program curriculum requirements are subject to change. Required Natural Science (NATSCI) courses must be completed with grade of B- or better in each course.
In just two semesters, the Practical Nursing program exposes you to a variety of classroom and clinical experiences to prepare you for employment in nursing homes, hospitals and other healthcare settings. The curriculum features a variety of teaching/learning methods, hands-on skills practice in the college’s well-equipped nursing laboratory, and supervised patient care in nursing homes and hospitals. Keys to success in the program are being able to think critically and communicate effectively. This program is accredited by the Accreditation Commission for Education in Nursing. Upon program completion, you will be eligible to take the Licensure Exam for Practical Nurses (NCLEX-PN). After earning this diploma, you may pursue your RN degree through MATC’s LPN-RN Educational Progression.

Career Outlook
Licensed practical nurses are in high demand. Typical job duties include observing and reporting physical symptoms in patients, administering and recording medications, assisting the physician with treatments and examinations, orienting and training unlicensed personnel, and helping patients with activities of daily living.

Program Learning Outcomes
- Adhere to professional standards of practice for LPNs
- Use effective communication skills
- Assist with the health assessment of individuals, families and groups
- Participate in clinical decision-making within the LPN scope of practice
- Provide safe, caring interventions with diverse populations
- Use principles of teaching and learning processes to reinforce teaching plans
- Work cooperatively with other health professionals
- Under supervision, manage and direct care within healthcare settings according to established protocols

Related Programs
Practical Nursing LPN-RN Educational Progression, Registered Nursing

Admission Requirements
This program admits students through a petition selection process; see this program's web page at matc.edu.
Nursing Assistant training required.

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
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<td>NRSPN-301</td>
<td>Nursing Fundamentals</td>
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<td>NRSPN-302</td>
<td>Nursing Skills ‡</td>
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<td>Nursing: Pharmacology</td>
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<td>PSYCH-188</td>
<td>Developmental Psychology ‡</td>
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<td>NRSPN-305</td>
<td>Nursing: Health Alterations ‡</td>
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<td>NRSPN-306</td>
<td>Nursing: Health Promotion ‡</td>
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<td>NRSPN-307</td>
<td>Nursing: Clinical Care Across the Lifespan ‡</td>
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<td>NRSPN-308</td>
<td>Nursing: Introduction to Clinical Management ‡</td>
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TOTAL CREDITS: 32

# Prerequisite required.
Program curriculum requirements are subject to change.

All Natural Science (NATSCI) courses and Nursing (NRSPN) courses must be completed with a grade of B- or higher in each course. All other courses must be completed with a grade of C or higher.

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Career: Licensed Practical Nurse
Program Learning Outcomes

Employers will expect program graduates to:

• Adhere to professional standards of practice for RNs
• Use effective communication skills
• Assess the health of individuals, families and groups within the context of community
• Make clinical decisions to assure effective nursing care
• Provide safe, caring interventions with diverse populations
• Collaborate with other health professionals
• Manage care to facilitate continuity within and across healthcare settings
• Use teaching and learning processes to promote and restore health throughout the lifespan

Admission Requirements

This program admits students through a petition selection process; see this program's web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs

Practical Nursing, Registered Nursing

Career Outlook

Licensed practical nurses who become registered nurses increase their employment options with higher salaries.

Program Learning Outcomes

Employers will expect program graduates to:

• Adhere to professional standards of practice for RNs
• Use effective communication skills
• Assess the health of individuals, families and groups within the context of community
• Make clinical decisions to assure effective nursing care
• Provide safe, caring interventions with diverse populations
• Collaborate with other health professionals
• Manage care to facilitate continuity within and across healthcare settings
• Use teaching and learning processes to promote and restore health throughout the lifespan

Admission Requirements

This program admits students through a petition selection process; see this program's web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs

Practical Nursing, Registered Nursing

Start Dates: August/January

For Information

Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200

TECHNICAL STUDIES

<table>
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<tr>
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<td>Nursing: Clinical Skill Development ‡</td>
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<td>Nursing: Mental Health Community Concepts ‡</td>
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<td>Nursing: Complex Health Alterations 2 ‡</td>
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GENERAL STUDIES

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<td>ENG-152</td>
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<td>NATSCI-186</td>
<td>Introductory Biochemistry ‡</td>
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<td>(or) NATSCI-209 Chemistry for Health Sciences</td>
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<td>NATSCI-197</td>
<td>Microbiology ‡</td>
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<td>PSYCH-188</td>
<td>Developmental Psychology ‡</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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SUGGESTED ELECTIVES: TWO CREDITS NEEDED………………… 2

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<td>NATSCI-237</td>
<td>Introduction to Biotechnology ‡</td>
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<td>NURSAD-160</td>
<td>Study Strategies for Health Occupations</td>
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<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
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</table>

TOTAL CREDITS: 53

# Prerequisite required.
Program curriculum requirements are subject to change.

Required Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.

All Liberal Arts and Sciences and elective courses required for the program must be completed with a grade of C or better.

Possible Careers: Registered Nurse, Head Nurse
Prepare for employment in x-ray departments associated with hospitals, medical clinics and private offices. This Associate in Applied Science degree is a full-time program with course sequencing encompassing four semesters, a six-week summer session and a six-week externship. The curriculum focuses on theoretical aspects of radiography, and applied clinical experiences in radiography departments. Radiation safety is practiced at all times. When you graduate, you become eligible to take the American Registry Examination for Radiologic Technology in Radiography. The program is accredited by the Joint Review Committee on Education in Radiologic Technology.

Career Outlook
Typical emphases in the field include diagnostic radiology, bedside and trauma procedures, and pediatric radiography. For additional career information, visit asrt.org

Program Learning Outcomes
Employers will expect program graduates to:
• Carry out the production and evaluation of radiographic images
• Practice radiation safety principles
• Adhere to quality management processes in radiography
• Provide quality patient care
• Apply computer skills in the radiographic clinical setting
• Apply critical thinking and problem-solving skills in the practice of diagnostic radiography
• Carry out the production and evaluation of radiographic images

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs
Respiratory Therapist, Surgical Technology

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC
Registered Nursing

ASSOCIATE DEGREE  
Program Code: 10-543-1  
Downtown Milwaukee and Mequon campuses

(Official WTCS title: Nursing Associate Degree)
Accredited by the Accreditation Commission for Education in Nursing, this Associate in Applied Science degree program prepares students for employment in a variety of healthcare settings. College laboratory experiences provide opportunities to practice technical skills. Clinical experiences allow participation in supervised patient care activities in a variety of local healthcare settings. Upon graduation you will be eligible to take the RN licensure exam (NCLEX-RN). Students who complete the first-year courses are eligible to take the Practical Nursing licensure exam (NCLEX-PN).

Career Outlook
Graduates can apply for positions at the staff nurse level. Additional education enhances potential for advancement to coordinator/head nurse and clinical specialist positions.

Program Learning Outcomes
- Adhere to professional standards of practice for RNs
- Use effective communication skills
- Assess the health of individuals, families and groups within the context of community
- Make clinical decisions to assure effective nursing care
- Provide safe, caring interventions with diverse populations
- Collaborate with other health professionals
- Manage care to facilitate continuity within and across healthcare settings
- Use teaching and learning processes to promote and restore health throughout the lifespan

Admission Requirements
This program admits students through a petition selection process; see this program's web page at matc.edu. Nursing Assistant training required. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs
Practical Nursing, Practical Nursing LPN-RN Educational Progression

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200

Possible Careers: Registered Nurse, Head Nurse

### TECHNICAL STUDIES

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<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<td>Nursing: Pharmacology ‡</td>
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</tr>
<tr>
<td>NRSAD-104</td>
<td>Nursing: Introduction to Nursing Practice ‡</td>
<td>2</td>
</tr>
<tr>
<td>NRSAD-105</td>
<td>Nursing: Health Alterations ‡</td>
<td>3</td>
</tr>
<tr>
<td>NRSAD-106</td>
<td>Nursing: Health Promotion ‡</td>
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</tr>
<tr>
<td>NRSAD-107</td>
<td>Nursing: Clinical Care Across the Lifespan ‡</td>
<td>2</td>
</tr>
<tr>
<td>NRSAD-108</td>
<td>Nursing: Introduction to Clinical Management ‡</td>
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</tr>
<tr>
<td>NRSAD-109</td>
<td>Nursing: Complex Health Alterations 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>NRSAD-110</td>
<td>Nursing: Mental Health Community Concepts ‡</td>
<td>2</td>
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<tr>
<td>NRSAD-111</td>
<td>Nursing: Intermediate Clinical Practice ‡</td>
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<tr>
<td>NRSAD-112</td>
<td>Nursing: Advanced Skills ‡</td>
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<tr>
<td>NRSAD-113</td>
<td>Nursing: Complex Health Alterations 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>NRSAD-114</td>
<td>Nursing: Management Concepts ‡</td>
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<tr>
<td>NRSAD-115</td>
<td>Nursing: Advanced Clinical Practice ‡</td>
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<tr>
<td>NRSAD-116</td>
<td>Nursing: Clinical Transition ‡</td>
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</table>

### GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-195</td>
<td>Economics ................................................</td>
<td>3</td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communications Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>(&amp; ENG-152)</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-177</td>
<td>General Anatomy and Physiology ‡</td>
<td>4</td>
</tr>
<tr>
<td>(&amp; NATSCI-179)</td>
<td>Advanced Anatomy and Physiology ‡</td>
<td>4</td>
</tr>
<tr>
<td>NATSCI-186</td>
<td>Introductory Biochemistry ‡</td>
<td>4</td>
</tr>
<tr>
<td>NATSCI-197</td>
<td>Microbiology ‡</td>
<td>4</td>
</tr>
<tr>
<td>PSYCH-188</td>
<td>Developmental Psychology ‡</td>
<td>3</td>
</tr>
<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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</table>

### SUGGESTED ELECTIVES: ONE CREDIT NEEDED

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLANG-105</td>
<td>Spanish for Nursing</td>
<td></td>
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<tr>
<td>NATSCI-237</td>
<td>Introduction to Biotechnology ‡</td>
<td></td>
</tr>
<tr>
<td>NRSAD-160</td>
<td>Study Strategies for Health Occupations</td>
<td></td>
</tr>
<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 70

‡ Prerequisite required. ( ) = Semester order for full-time students.
Program curriculum requirements are subject to change.

Required Natural Science (NATSCI) courses must be completed with a grade of B- or better in each course.

All Liberal Arts and Sciences and elective courses required for the program must be completed with a grade of C or better.
Renal Dialysis Technician

TECHNICAL DIPLOMA Program Code: 31-517-1 Downtown Milwaukee Campus

This two-semester program will prepare you for employment as a renal dialysis technician (RDT). Under the direct supervision of a registered nurse, RDTs are responsible for setting up equipment, preparing dialysate solutions, performing venipuncture, and monitoring patient responses during the procedure. In addition, RDTs are responsible for quality control and maintenance of dialysis equipment. Be aware that this program and occupational field have potential for exposure to blood; job-related duties require manual dexterity, and physical strength and endurance to perform a variety of lifting and transferring tasks related to patient care treatments.

Career Outlook
In the health field, RDTs are in demand and find employment in hospitals and in freestanding dialysis centers. For career information, visit kidney.org.

Program Learning Outcomes
Employers will expect program graduates to:
• Initiate, monitor and complete dialysis procedures
• Monitor vital signs, prepare and administer medications, and maintain reports and records
• Maintain equipment and supplies
• Provide psychological support to clients with end-stage renal disease who are undergoing dialysis procedures

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu to view the petition process.

Related Programs
Medical Assistant, Medical Laboratory Technician, Phlebotomy, Practical Nursing

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENG-347</td>
<td>Communications 2*</td>
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<tr>
<td>(or) ENG-151 or ENG-201</td>
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<tr>
<td>HEALTH-101</td>
<td>Medical Terminology*</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations*</td>
<td>3</td>
</tr>
<tr>
<td>(or) PSYCH-231 Introductory Psychology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RDIAT-320</td>
<td>Introduction to Renal Dialysis ‡</td>
<td>3</td>
</tr>
<tr>
<td>RDIAT-321</td>
<td>Principles of Renal Dialysis 1 ‡</td>
<td>4</td>
</tr>
<tr>
<td>RDIAT-302</td>
<td>Renal Failure and Support Therapies ‡</td>
<td>3</td>
</tr>
<tr>
<td>RDIAT-304</td>
<td>Hemodialysis Laboratory Procedures ‡</td>
<td>1</td>
</tr>
<tr>
<td>RDIAT-322</td>
<td>Principles of Renal Dialysis 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>RDIAT-323</td>
<td>Clinical Practicum 1 ‡</td>
<td>2</td>
</tr>
<tr>
<td>RDIAT-324</td>
<td>Clinical Practicum 2 ‡</td>
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</tr>
</tbody>
</table>

TOTAL CREDITS: 26

# Prerequisite required.
Program curriculum requirements are subject to change.
* It is strongly recommended that these courses be completed prior to entering the program.

Page 106
Respiratory Therapist

ASSOCIATE DEGREE Program Code: 10-515-1 Downtown Milwaukee Campus

Enhance patient care by evaluating, treating and caring for people with lung and heart disease. Through this Associate in Applied Science degree program, clinical experiences are gained in a variety of healthcare settings. Selected first semester courses may be taken on a part-time basis. Program graduates are qualified to sit for the National Board for Respiratory Care (NBRC) examinations. This program is fully accredited by the Commission on Accreditation for Respiratory Care (COARC) through 2022. Successful completion of the program and the NBRC Certified Respiratory Therapist examination provides an opportunity to obtain a certificate as a Respiratory Care Practitioner granted by the Wisconsin Department of Safety and Professional Services. NBRC examinations leading to qualification as a Registered Respiratory Therapist (RRT) as well as advanced credentials in pulmonary function (CPFT and RPFT) and perinatal/pediatrics are available.

Career Outlook
Respiratory therapists work in acute and subacute hospitals, diagnostic laboratories, rehabilitation facilities, clinics and home care. They administer treatments, recommend therapeutic interventions, operate life support systems, perform CPR and airway management, provide patient education and conduct cardiopulmonary testing. For additional career information, visit aarc.org.

Program Learning Outcomes
Employers will expect program graduates to:
• Apply respiratory therapy concepts to patient care situations
• Demonstrate technical proficiency required to fulfill the role of a respiratory therapist
• Practice respiratory therapy according to established professional and ethical standards

Admission Requirements
This program admits students through a petition selection process; see this program’s web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level biology and chemistry; and course placement assessment of basic skills proficiency.

Related Programs
Anesthesia Technology, Cardiovascular Technology, Radiography, Registered Nursing, Surgical Technology

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES Credits
(1) HEALTH-101 Medical Terminology .................................................3
(1) RESPC-111 Respiratory Survey ‡ ...............................................3
(1) RESPC-171 Respiratory Therapeutics 1 ‡ ...................................3
(2) RESPC-172 Respiratory Therapeutics 2 ‡ ...................................3
(2) RESPC-112 Respiratory Airways Management ‡ ......................2
(2) RESPC-173 Respiratory Pharmacology ‡ .................................3
(2) RESPC-174 Respiratory Cardiac Physiology ‡ .........................3
(5) RESPC-175 Respiratory Clinical 1 ‡ .........................................2
(3) RESPC-176 Respiratory Disease ‡ ............................................2
(3) RESPC-113 Respiratory Life Support ‡ ....................................3
(3) RESPC-178 Respiratory Clinical 2 ‡ .........................................3
(3) RESPC-179 Respiratory Clinical 3 ‡ .........................................3
(3) RESPC-180 Respiratory Neonatal and Pediatric Care ‡ ............2
(4) RESPC-181 Respiratory and Cardio Diagnostics ‡ ...................3
(4) RESPC-182 Respiratory Clinical 4 ‡ .........................................3
(4) RESPC-183 Respiratory Clinical 5 ‡ .........................................3

GENERAL STUDIES
ECON-195 Economics ..............................................................3
(4) RESPC-184 Respiratory Clinical 5 ‡ .........................................3
(4) RESPC-185 Respiratory Clinical 5 ‡ .........................................3
(4) RESPC-186 Respiratory Clinical 5 ‡ .........................................3
(4) RESPC-187 Respiratory Clinical 5 ‡ .........................................3

SUGGESTED ELECTIVES: TWO CREDITS NEEDED .....................2

Possible Careers: Certified Respiratory Therapist (CRT), Registered Respiratory Therapist (RRT)

TOTAL CREDITS: 70

# Prerequisite required.
Program curriculum requirements are subject to change.
(1) = Semester order for full-time students.  S = Summer.
All Natural Science (NATSCI) courses must be completed with a grade of C or better.
Surgical Technology

ASSOCIATE DEGREE  Program Code: 10-512-1  Downtown Milwaukee Campus

Surgical technologists are allied health professionals who are part of a medical practitioners team providing surgical care to patients. Surgical technologists work under medical supervision to facilitate the safe and effective completion of invasive surgical procedures. They work to ensure that the operating room environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety. Surgical technologists possess expertise in the theory and application of sterile and aseptic technique, and combine the knowledge of human anatomy, surgical procedures, and implementation tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures. Upon completion of this Associate in Applied Science degree program, you are eligible to write the certification examination given by the National Board of Surgical Technology and Surgical Assisting to become a Certified Surgical Technologist.

Career Outlook

Entry-level positions are available in operating rooms and ambulatory surgery facilities. For career information, see arcstsa.org.

Program Learning Outcomes

- Apply health sciences principles to the peri-operative environment
- Apply principles of disinfection and sterilization to the surgical environment, equipment and instrumentation
- Maintain principles of sterile technique in the surgical environment
- Prepare operating room by gathering equipment and supplies
- Pass instruments, equipment and supplies in a safe and efficient manner
- Provide a safe, efficient and supportive environment for the peri-operative patient
- Anticipate the sequence of events in surgical procedures
- Demonstrate safe practice with medications, solutions
- Function as an ethical, legal and professional member of the healthcare team within the surgical technologists' scope of practice
- Demonstrate proficiency on the comprehensive surgical technologist exam as specified by NBSTSA

Admission Requirements

This program admits students through a petition selection process; see this program's web page at matc.edu. Also required for admission: High school diploma or GED; one year of high school-level algebra, biology and chemistry (or equivalent college courses); and course placement assessment of basic skills proficiency.

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HEALTH-101</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>SURGT-125</td>
<td>Introduction to Surgical Technology †</td>
<td>4</td>
</tr>
<tr>
<td>SURGT-126</td>
<td>Surgical Tech Fundamentals 1 †</td>
<td>4</td>
</tr>
<tr>
<td>SURGT-127</td>
<td>Exploring Surgical Issues †</td>
<td>2</td>
</tr>
<tr>
<td>SURGT-128</td>
<td>Surgical Tech Fundamentals 2 †</td>
<td>4</td>
</tr>
<tr>
<td>SURGT-129</td>
<td>Surgical Pharmacology †</td>
<td>2</td>
</tr>
<tr>
<td>SURGT-130</td>
<td>Surgical Skills Application †</td>
<td>2</td>
</tr>
<tr>
<td>SURGT-137</td>
<td>Surgical Tech Clinical Practice 1 †</td>
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<tr>
<td>SURGT-140</td>
<td>Surgical Interventions 1A †</td>
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<tr>
<td>SURGT-138</td>
<td>Surgical Tech Clinical Practice 2 †</td>
<td>4</td>
</tr>
<tr>
<td>SURGT-139</td>
<td>Surgical Tech Clinical Practice 3 †</td>
<td>4</td>
</tr>
<tr>
<td>SURGT-141</td>
<td>Surgical Interventions 1B †</td>
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</tr>
<tr>
<td>SURGT-142</td>
<td>Surgical Interventions II †</td>
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GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 †</td>
<td>3</td>
</tr>
<tr>
<td>ENG-152</td>
<td>Communication Skills 2 †</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-177</td>
<td>General Anatomy and Physiology †</td>
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</tr>
<tr>
<td>NATSCI-179</td>
<td>Advanced Anatomy and Physiology †</td>
<td>4</td>
</tr>
<tr>
<td>NATSCI-197</td>
<td>Microbiology †</td>
<td>4</td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED ............................ 3

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<tr>
<th>Course Code</th>
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<tr>
<td>HEALTH-107</td>
<td>Introduction to Computing for Healthcare</td>
</tr>
<tr>
<td>NATSCI-241</td>
<td>Pathophysiology: Disease Process †</td>
</tr>
<tr>
<td>RADT-165</td>
<td>Applied Cross-Sectional Anatomy †</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 68

# Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Required Natural Science (NATSCI) courses must be completed with a grade of C+ or better.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Surgical Assistant, Certified Surgical Technologist, Surgical Technician, Surgical Technologist
Students enrolled in the Dietetic Technician associate degree program will complete all of these required courses as part of their program. Students who are interested only in becoming eligible to sit for the Association of Food and Nutrition Professionals Certified Dietary Manager examination may enroll in just these required classes and earn the Dietary Manager Certificate from MATC.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DIETNT-151</td>
<td>Nutrition for Dietetics .......................................... 4</td>
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<tr>
<td>CULMGT-112</td>
<td>Food Service Sanitation .......................................... 1</td>
</tr>
<tr>
<td>(or) DIETNT-106</td>
<td>Food Service Sanitation .......................................... 1</td>
</tr>
<tr>
<td>DIETNT-108</td>
<td>Food Service Management 1 ‡ ..................................... 3</td>
</tr>
<tr>
<td>DIETNT-118</td>
<td>Food Service Management Coordinated Practice 1 ‡ .......... 1</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 9

‡ Prerequisite required.
Program curriculum requirements are subject to change.

All credits in this certificate must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.

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**Start Dates: August/January**

**For Information**
West Allis Campus – 414-456-5500

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### Healthcare Customer Service

**CERTIFICATE** Downtown Milwaukee Campus; also offered entirely online

This certificate includes instruction in medical terminology, healthcare computing and the customer service skills related to working in a healthcare setting. Students earning this certificate will be prepared for entry-level customer service positions in the healthcare industry. Credits earned can be applied toward completing the Health Unit Coordinator technical diploma and the Healthcare Services Management associate degree.

<table>
<thead>
<tr>
<th>COURSES</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HEALTH-101</td>
<td>Medical Terminology ............................................. 3</td>
</tr>
<tr>
<td>HEALTH-104</td>
<td>Healthcare Customer Service ................................. 2</td>
</tr>
<tr>
<td>HEALTH-107</td>
<td>Introduction to Healthcare Computing ........................ 2</td>
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</tbody>
</table>

**TOTAL CREDITS:** 7

Program curriculum requirements are subject to change.
All credits in this certificate must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.
Enter a high-demand career program or complete the first two years of a bachelor’s degree through MATC’s School of Liberal Arts and Sciences.

You can earn the first two years of a bachelor’s degree at MATC. Through our articulation agreements with four-year colleges and universities, the Associate in Arts and Associate in Science degree credits (200-level) transfer to four-year institutions, including the University of Wisconsin System, private colleges/universities in Wisconsin and many four-year schools throughout the country. Students planning to transfer must check with the school they plan to transfer to for detailed credit transfer information. If you are interested in pursuing a bachelor’s degree, see MATC’s four-year college transfer information at matc.edu.

For all degree programs, students who have not been accepted, or have not decided on a program, may begin with General Studies courses if course prerequisites have been met.

For class times and locations or to register online, visit INFOline at matc.edu.

**Associate in Arts**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 111

**Associate in Arts Online – Accelerated**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 112

**Associate in Arts: Educational Foundations Track**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 113

**Associate in Science**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 114

**Associate in Science: Biotechnology Track**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 115

**Associate in Science: Chemical Technology Track**
- Liberal Arts and Sciences
- Four-Year College Transfer Degree, page 116

**Chemical Technician**
- Associate in Applied Science Degree, page 117

**Early Childhood Education**
- Associate in Applied Science Degree, page 118

**Early Childhood Education**
- Technical Diploma, page 119

**Human Service Associate**
- Associate in Applied Science Degree, page 120

**Interpreter Technician**
- Associate in Applied Science Degree, page 121

**CERTIFICATE PROGRAMS,** page 122
- AODA Substance Abuse Counselor
- Biotechnology

**NEW PROGRAMS UNDER DEVELOPMENT:** The following programs are planned to debut in the 2014-15 school year. Check matc.edu for information.

**Technical Diploma:** Early Childhood Education Administration

**Certificates:** Infant and Toddler Certificate Program, Preschool Certificate Program
The Associate in Arts (A.A.) degree provides students with the first two years of bachelor’s degree credit courses that will transfer to four-year colleges and universities. The courses emphasize the humanities and allow students many options to analyze information, think critically and creatively, respect diversity and collaborate with others. Students who plan to transfer should consult with the four-year university regarding specific requirements for a major and the credit transfer details. See the Four-Year College Transfer section of this catalog or matc.edu.

Successful completion of the Associate in Arts degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

**Accelerated and Online Options**

Students may choose to complete this degree online and in an Accelerated format; on-campus testing and meetings may be required. See the Associate in Arts Online – Accelerated page for information.

**Program Learning Outcomes**

- Communicate effectively
- Collaborate with others
- Respect diversity
- Demonstrate responsibility
- Think critically and creatively
- Utilize technology
- Apply math and science
- Demonstrate environmental responsibility
- Embrace change

**Admission Requirements**

- A high school diploma or GED
- ACT score 18, ACT Math score 20
- Accuplacer score of at least:
  - Reading 67, Sentence Skills 76, Elementary Algebra 73

**Related Programs**

Associate in Arts Online — Accelerated,
Associate in Arts — Educational Foundations Track

**Start Dates:** August/January

**For Information**

Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

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**CURRICULUM**

<table>
<thead>
<tr>
<th>ENGLISH – 6 CREDITS REQUIRED</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-201 English 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-202 English 2 ‡</td>
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</tr>
</tbody>
</table>

In addition select any 3-credit 200-series ENG course for Humanities requirement.

<table>
<thead>
<tr>
<th>SPEECH – 3 CREDITS REQUIRED</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEECH-201 Elements of Speech (or) SPEECH-203 Interpersonal Communication (or) SPEECH-206 Intercultural Communication</td>
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<table>
<thead>
<tr>
<th>HUMANITIES – 15 CREDITS REQUIRED</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select credits from 200-series courses in the humanities (such as English, music, speech, art, foreign language). Examples: SPEECH-212, FLANG-214.</td>
<td></td>
</tr>
<tr>
<td>Three credits must be in 200-level diversity/ethnic studies courses.</td>
<td></td>
</tr>
<tr>
<td>Three credits must be in 200-level fine arts courses. Examples: MUSIC-205, ART-201.</td>
<td></td>
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<table>
<thead>
<tr>
<th>SOCIAL SCIENCES – 15 CREDITS REQUIRED</th>
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</tr>
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<tbody>
<tr>
<td>Select from at least three of the following:</td>
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</tr>
<tr>
<td>1. ECON-201 Principles of Microeconomics (or) ECON-202 Principles of Macroeconomics</td>
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</tr>
<tr>
<td>2. SOCSCI-203 Introduction to Sociology</td>
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</tr>
<tr>
<td>3. PSYCH-231 Introductory Psychology</td>
<td></td>
</tr>
<tr>
<td>4. SOCSCI-221 American National Government and Politics Today (or) SOCSCI-222 American State and Local Government</td>
<td></td>
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<tr>
<td>5. Any 200-level HIST course</td>
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<table>
<thead>
<tr>
<th>WORLD/FOREIGN LANGUAGE – 4 CREDITS REQUIRED</th>
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</thead>
<tbody>
<tr>
<td>Students may earn retroactive credit and credit by exam. Strongly recommended: Take two semesters of the same language if not already taken in high school.</td>
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</table>

<table>
<thead>
<tr>
<th>MATHEMATICS – 4 CREDITS REQUIRED</th>
<th>4</th>
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<tbody>
<tr>
<td>Select any 200-series MATH courses, except MATH-260.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NATURAL SCIENCE – 7 CREDITS REQUIRED</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select any 200-series NATSCI courses. Four credits must be in a laboratory science.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHYSICAL EDUCATION – 3 CREDITS REQUIRED</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select any 200-series PHYED course.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDITIONAL ELECTIVES – 7 CREDITS REQUIRED</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose primarily from 200-series courses. A maximum of six credits of 100-series courses may be selected as electives. Additional foreign language is not required but is recommended.</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 64

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Note: It is important to consult the four-year institution regarding transferability of your selected courses.
This Accelerated degree program provides students with the first two years of bachelor’s degree credit courses that will transfer to four-year colleges and universities. You can complete this degree entirely online and in one year of full-time study through five eight-week sessions. The degree also can be completed in more time, per your schedule.

Successful completion of this Accelerated degree requires a grade-point average of 2.0 or higher.

Students who plan to transfer are advised to consult with the four-year university regarding specific requirements for a major.

The Associate in Arts degree is also offered in a non-accelerated on-campus format.

Program Learning Outcomes
• Communicate effectively
• Collaborate with others
• Respect diversity
• Demonstrate responsibility
• Think critically and creatively
• Utilize technology
• Apply math and science
• Demonstrate environmental responsibility
• Embrace change

Admission Requirements
• A high school diploma or GED
• ACT English, Math and Reading scores of 20; or MATC’s Accuplacer assessment scores of at least: Reading 72; Sentence Skills 80; Elementary Algebra 73
• Online skills assessment, orientation and interview

Related Programs
Associate in Arts (A.A.) Liberal Arts and Sciences Four-Year College Transfer, Associate in Arts – Educational Foundations Track, Associate in Science (A.S.) Liberal Arts and Sciences Four-Year College Transfer

CURRICULUM

<table>
<thead>
<tr>
<th>QUIN 1: FALL TERM, FIRST 8-WEEK SESSION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-201 English 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>PHYED-210 An Active Approach to Wellness and Fitness</td>
<td>3</td>
</tr>
<tr>
<td>ECON-201 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-211 America Through 1877</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUIN 2: FALL TERM, SECOND 8-WEEK SESSION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCS-201 Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SPEECH-201 Elements of Speech</td>
<td>3</td>
</tr>
<tr>
<td>ECON-202 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-231 Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUIN 3: SPRING TERM, THIRD 8-WEEK SESSION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-202 English 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>MATH-200 Intermediate Algebra ‡</td>
<td>4</td>
</tr>
<tr>
<td>FLANG-202 Spanish 1</td>
<td>4</td>
</tr>
<tr>
<td>HIST-212 America Since 1877</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUIN 4: SPRING TERM, FOURTH 8-WEEK SESSION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCS-221 American National Government and Politics Today</td>
<td>3</td>
</tr>
<tr>
<td>ART-201 Understanding Art</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-232 Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-234 Earth Science Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>SOCS-217 Valuing Diversity</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUMMER TERM: FIFTH 8-WEEK SESSION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose any 200-level Natural Sciences (NATSCI) course</td>
<td>3</td>
</tr>
</tbody>
</table>

ADDITIONAL ELECTIVES – 9 CREDITS REQUIRED……………………………….. 9

Choose from School of Liberal Arts and Sciences 200-series courses; consult with your program advisor regarding course selections

TOTAL CREDITS: 63

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Note: It is important to consult the four-year college or university you plan to attend regarding transferability of your selected courses.
ASSOCIATE DEGREE Program Code: 20-800-1.CU

LEARNING GOALS AND CURRICULUM REQUIREMENTS
The 64-credit curriculum includes four courses focused on the historical, cultural, sociological and philosophical foundations of urban education:
- **EDF-249**: Orientation to Urban Teaching (2 credits)
- **EDF-253**: Issues in Urban Teaching (3 credits)
- **EDF-254**: Field Experience in Urban K-12 Classrooms (2 credits)
- **EDF-255**: Introduction to Teaching (3 credits)

Students complete observational and participatory experiences with Milwaukee Public Schools.

Students attain the remaining credits through General Education requirements for admission to four-year college partners.

Some of the colleges and universities to which MATC students can transfer to pursue careers in teaching include:
- Alverno College
- Cardinal Stritch University
- Carroll University
- Lakeland College
- Marquette University
- Mount Mary University
- UW-Milwaukee
- UW-Oshkosh
- UW-Whitewater

See a MATC advisor for more information.

Paraprofessional Track (K-12 Classroom)
MATC students have the opportunity to enter the school paraprofessional field through the Paraprofessional Track (K-12 Classroom) of the Individualized Technical Studies Associate in Applied Science degree program. Classroom paraprofessionals provide instructional and clerical support for classroom teachers, allowing teachers more time for lesson planning and teaching. They assist children in learning class material, providing students with individualized attention. They also supervise students in the cafeteria, schoolyard or on field trips. Many work extensively with special education students. They also provide personal attention to students with other special needs, such as those who speak English as a second language. Graduation requires the completion of a 66-credit curriculum consisting of courses taken in the Early Childhood Education program in addition to a 21-credit core of Liberal Arts and Sciences/General Education courses. Students may also choose to complete a nine-credit emphasis area consisting of courses in World Language (including American Sign Language), Special Needs Education, Office Technology or Music. Contact an MATC advisor for information.
The Associate in Science degree provides students with the first two years of bachelor’s degree credit courses that will transfer to four-year colleges and universities. The courses in this degree emphasize the sciences and allow students many options to analyze information, think critically and creatively, respect diversity and collaborate with others. Students who plan to transfer should consult with the four-year university regarding specific requirements for a major and the credit transfer details. See the Four-Year College Transfer section of this catalog or matc.edu.

Successful completion of the Associate in Science degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

Program Learning Outcomes

• Communicate effectively
• Collaborate with others
• Respect diversity
• Demonstrate responsibility
• Think critically and creatively
• Utilize technology
• Apply math and science
• Demonstrate environmental responsibility
• Embrace change

Admission Requirements

• A high school diploma or GED
• ACT score 18, ACT Math score 20
• Accuplacer score of at least: Reading 67, Sentence Skills 76, College Math 43

Related Programs

Associate in Arts Online – Accelerated, Associate in Science – Biotechnology Track, Associate in Science – Chemical Technology Track

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

CURRICULUM

<table>
<thead>
<tr>
<th>Credits</th>
<th>ENGLISH – 6 CREDITS REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENG-201 English 1 ‡</td>
</tr>
<tr>
<td></td>
<td>ENG-202 English 2 ‡</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEECH – 3 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Speech-201 Elements of Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech-203 Interpersonal Communication (or Speech-206 Intercultural Communication)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HUMANITIES – 9 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Select credits from 200-series courses in the humanities (such as English, art, foreign language, music, speech). Examples: Speech-212, Flang-214. |
| Three credits must be in 200-level diversity/ethnic studies courses. |
| Three credits must be in 200-level fine arts courses. Examples: Music-205, Art-201. |

<table>
<thead>
<tr>
<th>SOCIAL SCIENCES – 9 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Select from at least three of the following: |
| Econom-201 Principles of Microeconomics (or Econom-202 Principles of Macroeconomics) |
| Socsci-203 Introduction to Sociology |
| Psych-231 Introductory Psychology |
| Socsci-221 American National Government and Politics Today (or Socsci-222 American State and Local Government) |
| Any 200-level Hist course |

<table>
<thead>
<tr>
<th>WORLD/FOREIGN LANGUAGE – 4 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Students may earn retroactive credit and credit by exam. Strongly recommended: Take two semesters of the same language if not already taken in high school. |

<table>
<thead>
<tr>
<th>MATHEMATICS – 5 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| MATH-231 Analytic Geometry and Calculus 1 ‡ |

<table>
<thead>
<tr>
<th>NATURAL SCIENCE – 8 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Select at least one 200-series course with laboratory from each of two areas of Natsci: chemistry, biology, earth sciences and physics. |

<table>
<thead>
<tr>
<th>MATHEMATICS OR NATURAL SCIENCE EMPHASIS – 12 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Select additional (optional) mathematics credits from the following courses only: |
| Math-232 Analytic Geometry and Calculus 2 ‡; Math-233 Analytic Geometry and Calculus 3 ‡; Math-234 Differential Equations/Linear Algebra ‡ (AND/OR) |
| Any 200-series Natsci courses |

<table>
<thead>
<tr>
<th>PHYSICAL EDUCATION – 3 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Select any 200-series Phyed course. |

<table>
<thead>
<tr>
<th>ADDITIONAL ELECTIVES – 5 CREDITS REQUIRED</th>
</tr>
</thead>
</table>

| Take five elective credits from 200- or 100-level courses. A maximum of six credits of 100-level courses may be selected as electives. Additional foreign language is not required but is recommended. |

TOTAL CREDITS: 64

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Note: It is important to consult the four-year institution regarding transferability of your selected courses.
The Associate in Science degree with Biotechnology emphasis provides the first two years of bachelor’s degree credit courses that will transfer to four-year colleges and universities. Courses emphasize biology, microbiology and genetics, and prepare students for transfer to a four-year degree in the biomedical sciences. Summer research/internship opportunities are also available. MATC’s state-of-the-art labs give students a competitive advantage as they prepare for bachelor’s degree studies and the workforce. Students who plan to transfer should consult with the four-year university regarding specific requirements for a major and credit transfer. See the Four-Year College Transfer section of this catalog or matc.edu.

Successful completion of the Associate in Science degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

### Program Learning Outcomes
- Communicate effectively
- Collaborate with others
- Respect diversity
- Demonstrate responsibility
- Think critically and creatively
- Utilize technology
- Apply math and science
- Demonstrate environmental responsibility
- Embrace change

### Admission Requirements
- A high school diploma or GED
- ACT score 18, ACT Math score 20
- Accuplacer score of at least: Reading 67, Sentence Skills 76, College Math 43

### Related Programs
- Associate in Science – Chemical Technology Track, Environmental Health and Water Quality Technology

### CURRICULUM

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-201</td>
<td>English 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-202</td>
<td>English 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>SPEECH-201</td>
<td>Elements of Speech</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(or SPEECH-203 Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(or SPEECH-206 Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td>HUMANITIES</td>
<td>– 9 CREDITS REQUIRED</td>
<td>9</td>
</tr>
<tr>
<td>SOCIAL SCIENCES</td>
<td>– 9 CREDITS REQUIRED</td>
<td>9</td>
</tr>
<tr>
<td>NATURAL SCIENCE</td>
<td>– 20 CREDITS REQUIRED</td>
<td>20</td>
</tr>
<tr>
<td>MATH-231</td>
<td>Analytic Geometry and Calculus 1 ‡</td>
<td>5</td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td>– 3 CREDITS REQUIRED</td>
<td>3</td>
</tr>
<tr>
<td>ADDITIONAL ELECTIVES</td>
<td>– 8 CREDITS REQUIRED</td>
<td>8</td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
<td></td>
<td>67</td>
</tr>
</tbody>
</table>

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Note: It is important to consult the four-year institution regarding transferability of your selected courses.
Associate in Science: Chemical Technology Track  
Four-Year College Transfer

**ASSOCIATE DEGREE**  
Program Code: 20-800-2.C  
Downtown Milwaukee Campus

The Associate in Science degree with Chemical Technology emphasis provides the first two years of bachelor's degree credit courses that will transfer to four-year colleges and universities. MATC’s state-of-the-art labs give students an advantage as they prepare for bachelor’s degree studies and the workforce. Courses emphasize chemistry and prepare students for both transfer to a four-year chemistry degree program and to begin work in an industrial chemistry lab. Summer research/internship opportunities are available. Students who plan to transfer should consult with the four-year university regarding specific requirements for a major and credit transfer. See the Four-Year College Transfer section of this catalog or matc.edu.

Successful completion of the Associate in Science degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

**Program Learning Outcomes**
- Communicate effectively
- Collaborate with others
- Respect diversity
- Demonstrate responsibility
- Think critically and creatively
- Utilize technology
- Apply math and science
- Demonstrate environmental responsibility
- Embrace change

**Admission Requirements**
- A high school diploma or GED
- ACT score 18, ACT Math score 20
- Accuplacer score of at least: Reading 67, Sentence Skills 76, College Math 43

**Related Programs**
Associate in Science – Biotechnology Track, Chemical Technician

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**CURRICULUM**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-201</td>
<td>English 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-202</td>
<td>English 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>SPEECH-201</td>
<td>Elements of Speech</td>
<td>3</td>
</tr>
<tr>
<td>SPEECH-203</td>
<td>Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>SPEECH-206</td>
<td>Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td>NATSCI-211</td>
<td>Chemistry 1 ‡</td>
<td>5</td>
</tr>
<tr>
<td>NATSCI-212</td>
<td>Chemistry 2 ‡</td>
<td>5</td>
</tr>
<tr>
<td>NATSCI-215</td>
<td>Quantitative Analysis ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-217</td>
<td>Organic Chemistry 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-219</td>
<td>Organic Chemistry Lab ‡</td>
<td>2</td>
</tr>
<tr>
<td>MATH-231</td>
<td>Analytic Geometry and Calculus 1 ‡</td>
<td></td>
</tr>
<tr>
<td>PHYS-233</td>
<td>Physical Education 3 ‡</td>
<td></td>
</tr>
<tr>
<td>CHEMT-103</td>
<td>Introduction to Chemical Technology (2 credits)</td>
<td></td>
</tr>
<tr>
<td>CHEMT-107</td>
<td>Industrial Methods of Analysis ‡ (2 credits)</td>
<td></td>
</tr>
<tr>
<td>CHEMT-109</td>
<td>Chemical Processes ‡ (3 credits)</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 66

‡ Prerequisite required.  
Program curriculum requirements are subject to change.  
Note: It is important to consult the four-year institution regarding transferability of your selected courses.

---

**Summer research/internship opportunities are available.**  
**Students who plan to transfer should consult with the four-year university regarding specific requirements for a major and credit transfer.**  
See the Four-Year College Transfer section of this catalog or matc.edu.
Chemical technicians assure the quality of the products made in the manufacturing, chemical and allied industries. This Associate in Applied Science degree program trains you to perform as an analyst or chemist’s assistant in paint, plastics, polymer, solvent, electric power, and manufacturing companies. Most graduates work in labs, in research and development, or in technical assistance.

Career Outlook
Employment prospects for program graduates are exceptional, locally and nationally. Success in this occupation requires the ability to work independently and accurately, with a minimum level of supervision.

Program Learning Outcomes
Employers expect graduates to:
• Apply knowledge of chemical apparatus, equipment and procedures in various production, research and control operations
• Work precisely in solution making, with measuring devices, data handling and instrument operation
• Demonstrate initiative and willingness to learn and grow in responsibility on the job
• Communicate and receive precise chemical data and procedures
• Understand and practice laboratory safety procedures, and understand and use material safety data sheets, etc.
• Use software for instrument operation and data handling

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• One year of high school-level chemistry, and advanced algebra or one semester of College Technical Mathematics 2 (MATH-116)

Related Programs
Associate in Science – Chemical Technology Track, Environmental Health and Water Quality Technology, Medical Laboratory Technician

Start Date: August
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Chemical Technician, Chemist’s Assistant, Laboratory Assistant
Pursue a career in child care or exceptional education settings for young children and have a positive impact on a child's life. This Associate in Applied Science degree program offers a comprehensive course of study covering healthcare, nutrition, literature and language arts, creative activities, communication skills and supervised experience in licensed child care centers. Program requirements include the completion of four practicum experiences. All courses are offered in English; a bilingual mode is offered at the West Allis Campus.

**Career Outlook**
Opportunities exist in group child care settings, family child care, or working with exceptional-needs children.

**Added Career Value**
Earn the Early Childhood Education diploma on your way to completing this associate degree.

**Program Learning Outcomes**
- Plan daily/weekly schedules of developmentally appropriate activities
- Understand and apply knowledge of child development and how children learn
- Have knowledge of and promote health and safety in children’s programs
- Understand and utilize appropriate techniques for guiding child behavior
- Prepare written plans, progress records, parent communications and reports
- Work cooperatively with other staff members, parents and community resource people

**Admission Requirements**
- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- Good health as evidenced by a medical exam and proper immunizations
- Documentation of compliance with Wisconsin’s Caregiver Law

**Related Programs**
Associate in Arts – Educational Foundations Track, Human Service Associate

| Start Dates: August/January |

**For Information**
Downtown Milwaukee Campus – 414-297-MATC
West Allis Campus – 414-456-5500

**Technical Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHILDD-148</td>
<td>ECE: Foundations of Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-151</td>
<td>ECE: Infant and Toddler Development</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-167</td>
<td>ECE: Health, Safety and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-174</td>
<td>ECE: Practicum 1</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-178</td>
<td>ECE: Art, Music and Language Arts</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-179</td>
<td>ECE: Child Development</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-188</td>
<td>ECE: Guiding Child Behavior</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-192</td>
<td>ECE: Practicum 2</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-194</td>
<td>ECE: Math, Science and Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-166</td>
<td>ECE: Curriculum Planning</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-187</td>
<td>ECE: Children with Differing Abilities</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-195</td>
<td>ECE: Family and Community Relationships</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-197</td>
<td>ECE: Practicum 3</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-198</td>
<td>ECE: Administering an Early Childhood Program</td>
<td>3</td>
</tr>
<tr>
<td>CHILDD-199</td>
<td>ECE: Practicum 4</td>
<td>3</td>
</tr>
</tbody>
</table>

**General Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1</td>
<td>3</td>
</tr>
<tr>
<td>ENG-152</td>
<td>Communication Skills 2</td>
<td>3</td>
</tr>
<tr>
<td>NATSCI-172</td>
<td>Basic Nutritional Science</td>
<td>3</td>
</tr>
<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOCSCI-172</td>
<td>Introduction to Diversity Studies</td>
<td>3</td>
</tr>
<tr>
<td>MATH-107</td>
<td>College Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
</tr>
</tbody>
</table>

**Suggested Electives: Three Credits Needed**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHILDD-168</td>
<td>Group Programming for Infants</td>
<td>3</td>
</tr>
<tr>
<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 69

# Prerequisite required.

Program curriculum requirements are subject to change.

() = Semester order for full-time students.

^ Counts toward the Early Childhood Education diploma program.

You must earn a grade of C or higher in all Early Childhood Education (CHILDD) courses in order to pass those courses.

Possible Careers: Child Care Services, Child Care Teacher, Exceptional Education Paraprofessional
Early Childhood Education

TECHNICAL DIPLOMA Program Code: 30-307-5 Downtown Milwaukee and West Allis campuses

Child development, nutrition, creative activities, guidance techniques and practical experience with young children are emphasized. Students are given experience with young children in a child care facility. You may enroll full time or part time; the program is designed for students entering the workforce after earning this diploma and for students continuing their education. Bilingual courses are available at the West Allis Campus.

Career Outlook
Trends indicate a steady growth in the child care field. Graduates are prepared for positions as early childhood teachers or assistant teachers in child care centers.

Added Career Value
After earning this diploma, the credits can be applied toward completing the Early Childhood Education associate degree program.

Program Learning Outcomes
Employers expect graduates to:
- Plan daily/weekly schedules of developmentally appropriate activities
- Understand and apply knowledge of child development and how children learn
- Work cooperatively with other staff members, parents and community resource people
- Have knowledge of and promote health and safety in children's programs
- Understand and utilize appropriate techniques for guiding child behavior

Admission Requirements
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Proper immunizations, medical records and criminal background check

Related Programs
Associate in Arts – Educational Foundations Track, Early Childhood Education Degree

SIXTEEN-WEEK TERMS Credits
CHILDD-151 ECE: Infant and Toddler Development ........................................... 3
CHILDD-167 ECE: Health, Safety and Nutrition ............................................. 3
CHILDD-174 ECE: Practicum 1 ........................................................................ 3
CHILDD-178 ECE: Art, Music and Language Arts ........................................... 3
CHILDD-179 ECE: Child Development ............................................................ 3
CHILDD-188 ECE: Guiding Child Behavior .................................................... 3

TOTAL CREDITS: 18

Possible Careers: Child Care Services, Child Care Teacher, Exceptional Education Paraprofessional

Milwaukee Area Technical College
School of LIBERAL ARTS and SCIENCES

Page 119
Human Service Associate

ASSOCIATE DEGREE Program Code: 10-520-3 Downtown Milwaukee Campus

Real-world experience will be part of your studies as you prepare for employment as a social service worker. Students can pursue special-interest areas such as working with youths, the elderly or people with disabilities or addictions. This program requires an early field experience, as well as the completion of an advanced field placement experience in the final semester of the program. The program is endorsed for substance abuse training. Students who complete this Associate in Applied Science degree with specific elective choices also complete all the education hours needed for certification as a substance abuse counselor. Additional work experience and testing is required for certification.

Core skills include cultural awareness and an understanding of diverse cultural groups, a responsible attitude and commitment to serve others. You should be a good listener and communicator.

Career Outlook

Human service associates find careers with a range of agencies and programs that help people. Graduates work in community outreach programs, social agencies, counseling centers, educational institutions or correctional facilities.

Program Learning Outcomes

Employers expect graduates to demonstrate:

• Recordkeeping and interviewing skills, including the preparation of clinical records, assessments, and interim notes and development of service plans
• Capabilities in group leadership, and the ability to effectively perform critical listening, observation, and engagement skills with individuals and groups
• Cultural awareness and skills in relating to diverse cultural, ethnic and racial groups

Admission Requirements

• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Documentation of compliance with Wisconsin’s Caregiver Law

Related Programs

Associate in Arts – Educational Foundations Track, Early Childhood Education, Interpreter Technician

Start Dates: August/January

For Information

Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Case Manager, Community Outreach Worker, Corrections Counselor, Substance Abuse Counselor, Youth Care Specialist

<table>
<thead>
<tr>
<th>TECHNICAL STUDIES</th>
<th>Credits</th>
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<tbody>
<tr>
<td>(1) HUMSVC-101 Introduction to Human Services ‡</td>
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<td>(1) HUMSVC-144 Ethics in the Human Service Professions ‡</td>
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<td>(1) AODA-109 Drug Use and Abuse</td>
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<tr>
<td>(2) HUMSVC-102 Interviewing Skills ‡</td>
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<td>(2) HUMSVC-103 Group Work Skills ‡</td>
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<tr>
<td>(2) HUMSVC-113 Documentation and Recordkeeping ‡</td>
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<td>(2) HUMSVC-118 Introduction to Gerontology ‡</td>
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<tr>
<td>(3) HUMSVC-142 Multicultural Competence in the Human Service Profession ‡</td>
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<td>(3) HUMSVC-104 Field Preparation ‡</td>
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<td>(3) HUMSVC-115 Methods of Social Casework ‡</td>
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<td>(3) HUMSVC-127 Disabilities and the Helping Profession</td>
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<td>(4) HUMSVC-106 Advanced Field Experience ‡</td>
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<td>(4) HUMSVC-107 Field Experience Seminar ‡</td>
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<td>(4) HUMSVC-121 Family Issues and Interventions ‡</td>
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<th>GENERAL STUDIES</th>
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<tr>
<td>ENG-151 Communication Skills 1 ‡</td>
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<tr>
<td>(8) ENG-152 Communication Skills 2 ‡</td>
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<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<td>NATSCI-172 Basic Nutritional Science</td>
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<td>PSYCH-199 Psychology of Human Relations</td>
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<tr>
<td>(or) PSYCH-231 Introductory Psychology</td>
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<tr>
<td>SOCSCI-197 Contemporary American Society</td>
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<tr>
<td>(or) SOCSCI-203 Introduction to Sociology</td>
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<th>SELECT TWO COURSES; ONE EACH FROM TWO GROUPS:</th>
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<td>#2 ECON-195 Economics</td>
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<td>#3 PSYCH-188 Developmental Psychology</td>
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<td>(or) PSYCH-238 Life-Span Psychology</td>
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<th>SUGGESTED ELECTIVES: THREE CREDITS NEEDED</th>
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<td>NATSCI-261 Introduction to Pharmacology</td>
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<td>AODA-151 Clinical Evaluation and Treatment Planning ‡</td>
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<tr>
<td>AODA-154 Counseling Skills Development</td>
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</table>

TOTAL CREDITS: 64

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
**Interpreter Technician**

**ASSOCIATE DEGREE Program Code: 10-533-2**

Prepare for entry-level employment as a sign language interpreter for deaf and hard-of-hearing persons. The coursework for this Associate in Applied Science degree prepares you to interpret the spoken English of hearing people and present it to deaf and hard-of-hearing people in American Sign Language. You will also be instructed in interpreting American Sign Language into spoken English, and develop knowledge of the culture of deaf people in America. Attributes that contribute to success include good vision, eye-hand coordination, motor coordination, firm grasp of the English language, fluent reading skills, and a broad vocabulary. One also needs the ability to sit and/or stand for extended periods. Upon successful completion of this program, you may take the Wisconsin Interpreter/Transliterator Assessment and/or the Registry of Interpreters for the Deaf, Inc., National Interpreter Certification written exam.

**Career Outlook**

Community agencies, organizations and service providers are hiring interpreters in conformance with federal regulations. Most full-time jobs are in the educational setting. Freelance opportunities are abundant. State and national tests may be taken to demonstrate skill.

**Program Learning Outcomes**

- Demonstrate proficiency in interpreting spoken English into American Sign Language, and American Sign Language into spoken English
- Reflect an understanding of the American deaf culture
- Exhibit strong interpersonal and communication skills
- Provide orientations on the appropriate use of American Sign Language interpreters to deaf, hard-of-hearing, and hearing consumers
- Maintain confidentiality and be guided by the Code of Ethics of the Registry of Interpreters of the Deaf, Inc.
- Demonstrate superior English language skills

**Admission Requirements**

- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- Completion of two years of ASL in high school, or MATC courses INTP-126 and INTP-127 American Sign Language 1 and 2, or the equivalent
- Completion of MATC’s Health Examination Packet and a criminal background check

**Start Date:** August

For Information

Downtown Milwaukee Campus – 414-297-MATC

**TECHNICAL STUDIES**

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>INTP-131</td>
<td>Interpreting 1 ‡</td>
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<tr>
<td>INTP-133</td>
<td>American Sign Language Linguistics ‡</td>
<td>3</td>
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<td>INTP-139</td>
<td>Orientation to Deafness</td>
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<td>INTP-143</td>
<td>Interpreting 2 ‡</td>
<td>5</td>
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<td>INTP-145</td>
<td>The Interpreting Process ‡</td>
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<td>INTP-147</td>
<td>Interpreting Ethics ‡</td>
<td>3</td>
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<tr>
<td>INTP-149</td>
<td>Social Aspects of Deafness ‡</td>
<td>3</td>
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<td>INTP-138</td>
<td>Interpreting 3 ‡</td>
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<td>INTP-151</td>
<td>Educational Interpreting: Theory and Function ‡</td>
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<td>INTP-144</td>
<td>Interpreting 4 ‡</td>
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<td>INTP-153</td>
<td>Occupational Experience ‡</td>
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<td>INTP-161</td>
<td>Employment Preparation for Interpreters ‡</td>
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**GENERAL STUDIES**

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<td>Communication Skills 1 ‡</td>
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<td>ENGT-152</td>
<td>Communication Skills 2 ‡</td>
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<td>MATH-107</td>
<td>College Mathematics</td>
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<td>NATSCI-167</td>
<td>Science of Technology</td>
<td>3</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<tr>
<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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**SUGGESTED ELECTIVES:** SIX CREDITS NEEDED

- INTP-135 Building Conversational Fluency ‡
- INTP-150 Oral Interpreting ‡
- PHYED-210 An Active Approach to Wellness and Fitness

**TOTAL CREDITS:** 70

# Prerequisite required.

Program curriculum requirements are subject to change.

( ) = Semester order for full-time students.

Possible Careers: Educational Interpreter, Communication Assistant, Freelance Interpreter, Staff Interpreter, Interpreter Referral Coordinator
AODA Substance Abuse Counselor

This certificate program provides students with the classroom education and training required for substance abuse counselors in Wisconsin. The program consists of courses in the areas of assessment, professional responsibilities, education, case management and counseling. Courses can be used for continuing education credits. This 360-hour program provides you with all the education hours needed for state certification as a substance abuse counselor in the state of Wisconsin. Additional supervised work experience (about 3,500 hours), additional written examinations, and an application portfolio must also be completed for state certification as a substance abuse counselor.

For details on state requirements, see Health Professions: Substance Abuse Counselor at dsps.wi.gov.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Milwaukee Area Technical College
School of LIBERAL ARTS and SCIENCES

COURSES Credits
AODA-151 Clinical Evaluation and Treatment Plan ‡ .................. 3
HUMSV-127 Disabilities and the Helping Profession...................... 3
AODA-154 Counseling Skills Development ‡ .............................. 3
AODA-161 Treatment Issues .................................................. 1
AODA-152 Service Coordination and Documentation ‡ ......... 3
AODA-162 Service Delivery Issues ........................................ 1
NATSCI-261 Introduction to Pharmacology .............................. 3
AODA-109 Drug Use and Abuse ............................................. 3
AODA-150 Professional Readiness and Ethical Response .......... 3
AODA-160 Ethical Dilemmas .................................................. 1

TOTAL CREDITS: 24

‡ Prerequisite required.
Program curriculum requirements are subject to change.
All credits in this certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of requirements. Certificate programs are not eligible for financial aid.

Biotechnology

The Biotechnology certificate program offers hands-on, competency-based instruction designed to prepare students for entry-level positions in the bio-manufacturing industry. The program provides scientific background while emphasizing practical applications. In the laboratory, students are trained in the actual techniques employed in the industry. Students are introduced to Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP) and related topics that emphasize the significance of maintaining quality in a biological research or production setting.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Milwaukee Area Technical College
School of LIBERAL ARTS and SCIENCES

COURSES Credits
NATSCI-197 Microbiology ‡ ................................................. 4
NATSCI-186 Biochemistry ‡ ................................................. 4
NATSCI-209 (or) NATSCI-209 Chemistry for Health Sciences .... 4
NATSCI-237 Introduction to Biotechnology ‡ ......................... 4
NATSCI-238 Molecular Biology Concepts ‡ ......................... 5
NATSCI-239 Genetics ‡ ..................................................... 5

TOTAL CREDITS: 22

‡ Prerequisite required.
Program curriculum requirements are subject to change.
All credits in this certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of requirements. Certificate programs are not eligible for financial aid.
Prepare for innovative, creative careers by mastering the key fundamental skills for the latest technologies. The School of Media and Creative Arts features engaging, digital-based teaching and learning. Students gain experience through hands-on work in MATC’s industry-standard labs and through internships; Television and Video Production students receive instruction at Milwaukee Public Television studios.

**Start Your Four-Year Degree at MATC:** If your goal is to earn a bachelor’s degree, you can transfer associate degree program credits to one or more four-year institutions. See four-year transfer information at matc.edu.

For all degree programs, students who have not decided on a program, or are awaiting acceptance into a program, may begin with General Studies courses if the course prerequisites have been met.

For class times and locations or to register online, visit INFOline at matc.edu.

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**Audio Production**  
Associate in Applied Science Degree, page 125

**Computer Simulation and Gaming**  
Associate in Applied Science Degree, page 126

**Creative Advertising Strategist**  
Associate in Applied Science Degree, page 127

**Digital Imaging**  
Technical Diploma, page 128

**eProduction**  
Associate in Applied Science Degree, page 129

**Graphic Design**  
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**Interactive Media**  
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**Mobile Application Designer**  
Technical Diploma, page 132

**Mobile Designer**  
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**Music Occupations**  
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**Photography**  
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**Television and Video Production**  
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**Web Designer**  
Technical Diploma, page 137

**CERTIFICATE PROGRAM**  
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**Advanced Television Post-Production**
MATC’s unique facilities, in combination with the program’s curriculum, offer students a comprehensive background in 3D animation through this Associate in Applied Science degree program. Coursework covers basic skills in drawing, traditional animation and the use of tools such as Photoshop and AfterEffects. The program also covers advanced skills in 3D modeling, lighting, texturing, and specialized skills such as lip sync and character animation.

Career Outlook
The career potential for animation is exceptional as 3D animation is being used in more industries. From visualization of architectural spaces to video games to effects in movies, animation is expanding.

Program Learning Outcomes
Employers expect graduates to possess skills in:
• Project planning
• Concept sketching
• Storyboarding
• 3D modeling techniques
• 3D animation
• Texture creation
• Lighting techniques
• Rendering techniques
• Practical systems knowledge

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Computer Simulation and Gaming, Graphic Design, Interactive Media, Television and Video Production

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Character Designer, Animator 2D/3D, Background Designer, Industrial Product Designer, 3D Modeling Specialist, Character Rigger

TECHNICAL STUDIES

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>(1) ANIM-101</td>
<td>Basic Animation</td>
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<tr>
<td>(1) ANIM-104</td>
<td>Principles of Character Development</td>
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<td>(1) ANIM-106</td>
<td>Principles of 3D Animation</td>
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<td>(1) AMIN-105</td>
<td>Texture and Material Editing</td>
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<td>(2) ANIM-120</td>
<td>Environment and Set Design ‡</td>
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<td>(2) ANIM-125</td>
<td>3D Modeling ‡</td>
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<td>(2) ANIM-180</td>
<td>Digital Cinematography ‡</td>
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<td>(3) ANIM-115</td>
<td>Refining the Character ‡</td>
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<td>(3) ANIM-130</td>
<td>3D Simulations and Illustrations ‡</td>
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<td>(3) ANIM-140</td>
<td>Timelines, Keyframes and Kinematics ‡</td>
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<tr>
<td>(4) ANIM-135</td>
<td>Character Expression and Lip Sync ‡</td>
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<td>(4) ANIM-150</td>
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<td>(4) ANIM-155</td>
<td>Animation Internship ‡</td>
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<td>(4) ANIM-160</td>
<td>Animation Portfolio ‡</td>
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<td>(4) ANIM-165</td>
<td>Digital Post-Production ‡</td>
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GENERAL STUDIES

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<td>ENG-151</td>
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<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
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<td>NATSCI-167</td>
<td>Science of Technology</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED .......... 3

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<td>ANIM-110</td>
<td>Digital Life Drawing</td>
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<td>ANIM-111</td>
<td>Intermediate Digital Life Drawing</td>
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<td>ANIM-156</td>
<td>Broadcast Animation</td>
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TOTAL CREDITS: 68

# Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Audio Production

ASSOCIATE DEGREE Program Code: 10-701-4 Downtown Milwaukee Campus

Combining creative and practical aspects of sound and music, this Associate in Applied Science degree program prepares you to enter the audio engineering field. Coursework covers working with live and recorded sound so graduates are ready for a range of employment options including working on television broadcasts, movie soundtracks, concerts and animation applications. Keys to success include creativity and abilities to problem solve and collaborate. Students should have normal hearing and visual abilities; and be able to work under stress and meet deadlines.

Career Outlook
The explosion of social media and web use for independent artists, plus the increase in affordable digital audio workstations, presents opportunities for audio engineers in live applications, commercial recording studios and home-recording production suites.

Program Learning Outcomes
When you graduate from this program, employers will expect you to possess the following skills:

- Project planning
- Audio recording
- Studio management
- Mastering
- Live mixing
- Communication skills
- Microphone selection and placement
- Post-production mixing

Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Demonstration of basic computer skills in operating systems, word processing and the internet

Related Program
Music Occupations

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Audio Engineer, Live Sound Engineer, Music Tracking Engineer, Mixing Engineer, Mastering Engineer, Recording Studio Manager

<table>
<thead>
<tr>
<th>TECHNICAL STUDIES</th>
<th>Credits</th>
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<td>(1) MUSIC-148 Music Fundamentals 1 .................................................... 2</td>
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<td>(1) AUDIO-100 Introduction to Music Software ...................................... 1</td>
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<td>(1) AUDIO-102 Techniques of Sound Recording ........................................ 3</td>
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<td>(1) AUDIO-103 Recording Live Concerts ............................................... 3</td>
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<td>(1) MUSIC-189 Voice Lab 1 ....................................................................... 1</td>
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<td>(2) MUSIC-177 Piano Lab 1 ..................................................................... 1</td>
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<td>(4) AUDIO-126 Electronics for Audio Engineers ....................................... 2</td>
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SUGGESTED ELECTIVES: SIX CREDITS NEEDED .......................... 6

MUSIC-206 History of Rock and Pop |
MUSIC-210 World Music Sound and Structure

TOTAL CREDITS: 66

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Computer Simulation and Gaming

ASSOCIATE DEGREE  Program Code: 10-153-1  Downtown Milwaukee Campus

This Associate in Applied Science degree program prepares students for a career in animation and gaming, however the skills obtained in this degree are transferable to other industries such as computer programming, multimedia development and film production. This cross-discipline program is designed to create a work-like environment while teaching planning, design, development and testing of computer simulation and gaming products. Students choose one of three emphases as shown in the righthand column: Programming, Design or Animation.

Career Outlook
Testers, designers and producers are needed as the use of this technology increases rapidly. Computer simulations are used as educational and training tools in schools and businesses.

Program Learning Outcomes
Employers will expect graduates to:
• Test simulations and games
• Design an architecture
• Lead a team or project
• Create a working game module
• Communicate in a team environment
• Create 3D animations (Animation Emphasis)
• Create 3D models (Animation Emphasis)
• Design characters (Animation Emphasis)
• Storyboard your concepts (Animation Emphasis)
• Create environments (Animation Emphasis)
• Analyze, design and implement solutions (Programming or Design Emphasis)
• Apply system software principles (Programming)
• Convert logic concepts into OOP code (Programming)
• Manage assets and revision control (Programming)
• Apply artificial intelligence principles (Programming or Design Emphasis)
• Design games (Design Emphasis)
• Create interactive displays (Design Emphasis)

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Demonstration of basic computer skills in OS, word processing and the internet
• Completion of CSG-100 Pre-Entry Evaluation

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers:
Animator, Game Designer, Game Programmer, Producer

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<tr>
<th>TECHNICAL STUDIES</th>
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<td>Introduction to OOP Programming ..................................... 3</td>
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<td>(2) ITDEV-115</td>
<td>Intermediate OOP Programming ...................................... 3</td>
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<td>(2) CSG-118</td>
<td>Game Engine Scripting ‡ ........................................ 3</td>
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<td>Artificial Intelligence ‡ ........................................... 3</td>
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<td>Texture and Material Editing ........................................ 3</td>
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<td>(1) ANIM-106</td>
<td>Principles of 3D Animation ........................................... 3</td>
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<td>Environment and Set Design ‡ ..................................... 3</td>
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<td>Timeline Key Frames and Kinematics ‡ ............................. 4</td>
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<td>(3) ANIM-115</td>
<td>Refining the Character ‡ ........................................... 3</td>
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<td>(4) ANIM-133</td>
<td>Character Expression and Lip Sync ‡ .............................. 3</td>
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GENERAL STUDIES
ECON-195  Economics (or) Any 200-series ECON course .......... 3
ENG-151  Communication Skills † ........................................... 3
& ENG-152  Communication Skills ‡ ........................................... 3
(or) ENG-201 and any 200-series ENG or SPEECH course
MATH-107  College Mathematics ‡ ........................................... 3
(or) Any 200-series MATH course
NATSCI-167  Science of Technology ........................................... 3
(or) Any 200-series NATSCI course
PSYCH-199  Psychology of Human Relations ......................... 3
(or) Any 200-series PSYCH course
SOCSCI-197  Contemporary American Society ....................... 3
(or) Any 200-series HIST or SOCSCI course

SUGGESTED ELECTIVES: THREE CREDITS NEEDED  ................. 3
ITDEV-121  Advanced Programming with C++ ‡
VICOM-137  Interactive Video ‡
ANIM-157  Intermediate 3D Animation ‡

TOTAL CREDITS: 69

# Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.
Using case studies and projects, students in this Associate in Applied Science program study the creative strategies behind promotional campaigns, with a focus on the importance of precision demographics. Coursework in concept and project development, social and viral communication methods, media planning and digital graphics prepares you to enter the advertising and communications fields. A well-developed imagination and talent for visual problem-solving, plus computer and math skills, will enhance your success.

**Career Outlook**

In the digital world, employees with skills in new methods of implementing advertising strategies are in demand.

**Program Learning Outcomes**

- Demonstrate creative skills with regard to concept and project development
- Demonstrate strong visualization skills with regard to project development
- Understand/demonstrate the practice of thorough concept development
- Utilize marketing research to implement creative project strategies
- Execute design/project solutions using all the principles of design
- Execute concept layouts in stages ranging from rough concept to final comprehensive
- Prepare final design concepts for correct digital application
- Appropriately use computer design hardware and software, including basic file management and network communications
- Execute a professional portfolio highlighting industry-relative skills

**Admission Requirements**

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

**Related Programs**

Animation, Computer Simulation and Gaming, Graphic Design, Interactive Media, Mobile Design, Photography, Television and Video Production, Web Design

### TECHNICAL STUDIES

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<th>Course</th>
<th>Credits</th>
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<td>CAS-126</td>
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### GENERAL STUDIES

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<td>SOCSCI-197</td>
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</table>

### ELECTIVES: THREE CREDITS NEEDED

TOTAL CREDITS: 69

‡ Prerequisite required.

Program curriculum requirements are subject to change.

( ) = Semester order for full-time students.

**Possible Careers:** Art Director, Advertising Strategist, Content Strategist, Creative Strategist, Brand Strategist, Graphic Artist, Graphic Designer
Program Learning Outcomes

Employers expect graduates to:
• Be technically and artistically prepared for entry-level employment in the photographic industry
• Demonstrate Core Abilities (critical thinking, communication, work habits, using technology)
• Demonstrate digital photography fundamentals and skills
• Investigate, communicate and manipulate captured images

Admission Requirements

• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

Creative Advertising Strategist, eProduction, Graphic Design, Interactive Media, Photography, Television and Video Production

Possible Careers: Second Assistant (Advertising, Wedding and Portrait, Video Photography), Entry-Level Digital Lab Technician, Photojournalism Stringer
Start a career in the fast-growing world of on-demand visual media content through this Associate in Applied Science program. Coursework prepares you to produce and distribute high-quality electronic video content for the internet, smartphones and other emerging, interactive technologies. Students learn how to acquire, edit and recode media for multiple delivery platforms. Convergence of digital video technologies and consumers’ desire to access visual media virtually everywhere are resulting in opportunities for businesses to distribute content once limited to over-the-air broadcast, in ways frequently reimagined. Students gain real-world experiences at Milwaukee Public Television studios and working with other professionals in visual media programming.

Career Outlook
The need for employees skilled in the electronic production of content on-demand is growing as businesses strive to reach consumers via new technologies.

Program Learning Outcomes
• Demonstrate acute creative skills with regard to video and eproduction
• Demonstrate strong visualization skills with regard to a multitude of media delivery methods
• Understand/demonstrate practice of thorough concept development and media creation
• Use research to implement creative project strategies and applications
• Execute design/project solutions using principles of design, television/video and multimedia
• Execute solutions in data asset management and file coding for various delivery options
• Prepare final design concepts for correct digital application
• Appropriately use computer design hardware and software, including nonlinear editing platforms and other visual media tools
• Execute a professional portfolio of industry-relative skills

Admission Requirements
• A high school diploma or GED
• Course placement assessment of basic skills proficiency

Related Programs
Animation, Computer Simulation and Gaming, Interactive Media, Mobile Designer, Television and Video Production

TOTAL CREDITS:  68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Graphic Design

ASSOCIATE DEGREE  Program Code: 10-201-1  Downtown Milwaukee Campus

To prepare for a graphic design career, this Associate in Applied Science degree program will introduce you to a variety of work-related disciplines: design of print- and computer-generated graphics for books, technical manuals, newspapers, magazines, web applications and advertising/marketing materials; and additional design applications for promotional pieces, point-of-purchase, packaging and outdoor advertising. Students will produce a portfolio for seeking employment. A well-developed imagination, talent for visual problem-solving, and also computer, math and communication skills will enhance your success.

Career Outlook

Today’s digital world reduces the geographic limits for finding clients, which expands work opportunities for graphic designers. Typical job duties include illustration, layout and design, signage, corporate identity, 3D and multimedia design.

Program Learning Outcomes

Employers will expect graduates to:

- Demonstrate strong visual skills in two- and three-dimensional design concepts
- Execute design solutions using principles of balance, composition, color, light, texture, line and form
- Have knowledge and skill in typography
- Create illustrations using various styles
- Execute layouts from rough concept to comprehensive
- Prepare camera-ready artwork or press-ready electronic files
- Intelligently use computer design hardware and software, including basic file management and network communication

Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- A portfolio with 10 examples of art and related media

Related Programs

Animation, Computer Simulation and Gaming, Creative Advertising Strategist, Interactive Media, Photography, Television and Video Production, Web Designer

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES

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<td>Digital Imaging: Adobe Photoshop</td>
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<td>(1) COMART-115</td>
<td>Typography 1</td>
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<td>Design Research and Conception ‡</td>
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<td>Graphic Design Trends ‡</td>
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<td>Publication Design Using Adobe InDesign ‡</td>
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<td>Packaging and Exhibition Design ‡</td>
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SUGGESTED ELECTIVES: SIX CREDITS NEEDED

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<td>PHYED-210</td>
<td>An Active Approach to Wellness and Fitness</td>
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TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

Possible Careers: Art Director, Creative Director, Digital Media Specialist, Graphic Artist, Graphic Designer
MATC's unique facilities and the coursework in animation, digital audio/video, interface design, website design and website development offer a comprehensive background in interactive media. In this Associate in Applied Science degree program, portfolio and internship courses are included to help you prepare samples of your work and initiate a job search. Core abilities include good vision and hearing, normal color and depth perception, and a talent for visual problem-solving. Also contributing to your success in the program are abilities to work as part of a team, to work under stress and to meet deadlines.

Career Outlook
Individuals possessing skills in multimedia and web production are in demand to fill positions as media specialists, multimedia authors, multimedia programmers, interface designers and web designers.

Program Learning Outcomes
Employers expect program graduates to possess the following skills:
• Project planning
• Interactive interface design
• Multimedia authoring
• Animation
• Web page design
• Web page scripting
• Photography
• Digital audio/video production

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Demonstration of basic computer skills in operating systems, word processing and the internet

Related Programs
Animation, eBusiness Technology Analyst, Graphic Design, Mobile Application Designer, Photography, Television and Video Production, Web Designer

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers:
3D Digital Artist, Web Designer, Multimedia Developer

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<td>(1) VICOM-108</td>
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<td>(1) VICOM-154</td>
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<td>Visual Communications Portfolio ‡…………3</td>
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Select nine credits from the following three-credit courses: 9
VICOM-136 Advanced Multimedia Techniques ‡
VICOM-135 Interactive Multimedia Systems ‡
VICOM-162 Database-Driven Web Design ‡
VICOM-124 Content Management Systems ‡
VICOM-125 Advanced Website Development ‡
VICOM-126 Mobile Web Development ‡
EBUS-118 Social Media Technologies
PHOTO-101 Digital Fundamental Photography
COMART-182 Graphic Arts Business Skills
CAS-143 User Experience — UE 2.0

GENERAL STUDIES
ECON-195 Economics…………………………………3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡…………………3
(&) ENG-152 Communication Skills 2 ‡………………3
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(or) Any 200-series MATH course
NATSCI-167 Science of Technology…………………3
(or) Any 200-series NATSCI course
PSYCH-199 Psychology of Human Relations…………3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society…………3
(or) Any 200-series SOCSCI or HIST course

SUGGESTED ELECTIVES: THREE CREDITS NEEDED………………3
ANIM-106 Principles of 3D Animation
PHYED-210 An Active Approach to Wellness and Fitness
VICOM-127 Illustrated Storytelling

TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.
Mobile Application Designer

TECHNICAL DIPLOMA  Program Code: 31-206-2  Downtown Milwaukee Campus

Combining coursework in mobile application design, web development and social media marketing, this program prepares students to work with the latest technology. Students plan, design and publish websites; design mobile applications and apply multiple web development languages to mobile and desktop internet platforms.

Important to success are abilities to work as part of a team, to work under stress and to meet deadlines. You should have a well-developed imagination, talent for visual problem-solving, and good hearing and vision with normal color and depth perception.

Career Outlook
The demand for mobile application designers is increasing as more businesses and organizations update their communication strategies to evolve with new technology.

Added Career Value
After earning this diploma, credits can be applied toward completing the Mobile Designer degree program.

Program Learning Outcomes
Employers expect program graduates to:
• Design mobile applications
• Demonstrate responsive web design
• Design and develop websites using industry-leading web authoring software
• Develop websites using up-to-date languages
• Design interactive interfaces
• Use project planning techniques
• Develop social media strategies
• Demonstrate professionalism and good communication skills

Admission Requirements
• A high school diploma or GED
• Demonstration of basic skills through a course placement assessment
• Demonstration of basic computer skills in operating systems, word processing and the internet

Related Programs
eBusiness Technology Analyst, Interactive Media, IT Mobile Applications Developer, Web Designer

Sixteen-Week Terms

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
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<tr>
<td>ENG-151</td>
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<td>VICOM-123</td>
<td>Website Development ‡</td>
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<td>Web Development with HTML/CSS</td>
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<td>VICOM-150</td>
<td>Introduction to Digital Media</td>
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<tr>
<td>VICOM-124</td>
<td>Content Management Systems ‡</td>
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<td>VICOM-126</td>
<td>Mobile Web Development ‡</td>
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<tr>
<td>VICOM-162</td>
<td>Database-Driven Web Design ‡</td>
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<tr>
<td>VICOM-163</td>
<td>iPhone/iPad (iOS) Application Development ‡</td>
<td>3</td>
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<tr>
<td>VICOM-164</td>
<td>Android Application Development ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 31

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Mobile Application Designer, Mobile Web Designer, Web Developer, Web Designer, Front-End Designer
Geared toward front-end development, this Associate in Applied Science degree program prepares students for the mobile design field. Coursework covers skills in mobile application design, mobile web development, interface design and web development. Portfolio and internship courses are included so students can acquire real-world experience and compile samples of their work. Important to your success are the abilities to visualize solutions, use your imagination, work as part of a team, and be able to work under stress and meet deadlines; you should possess good hearing and vision, and normal color and depth perception.

**Career Outlook**
The rapid growth of internet-enabled mobile devices has led to an increased demand for skills in mobile application design and mobile web development.

**Program Learning Outcomes**
Employers will expect program graduates to possess the following skills:
- Mobile web development
- Mobile application design
- Web development
- Web design
- Website scripting
- Project planning
- Interactive interface design
- Professionalism and good communication skills

**Admission Requirements**
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Demonstration of basic computer skills in operating systems, word processing and the internet

**Related Programs**
eBusiness Technology Analyst, Interactive Media, IT Mobile Applications Developer, Mobile Application Designer, Web Designer

### TECHNICAL STUDIES

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>VICOM-128</td>
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<td>COMART-103</td>
<td>Design Elements and Principles</td>
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<td>iPhone/iPad (iOS) Application Development ‡</td>
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<td>Visual Communication Portfolio ‡</td>
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<td>ENG-151</td>
<td>Communication Skills †</td>
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<td>ENG-152</td>
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<td>MATH-107</td>
<td>College Mathematics ‡</td>
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<td>NATSCI-167</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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<td>VICOM-125</td>
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<td>Database-Driven Web Design ‡</td>
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**GENERAL STUDIES**

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**SUGGESTED ELECTIVES: THREE CREDITS NEEDED**

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**TOTAL CREDITS: 66**

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
Music Occupations

ASSOCIATE DEGREE  Program Code: 10-805-1  Downtown Milwaukee Campus

Prepare for a career in music by developing your skills as a well-rounded musician. In this Associate in Applied Science degree program, areas of study include theory fundamentals such as reading, analysis, composition, ear training and more. From the classics to jazz to today’s most popular styles, MATC’s curriculum is diverse. The performance classes offer on-stage experience. Working with professionals in the sound recording field enhances skills that will apply to opportunities as a sound support technician or owning a recording studio.

Career Outlook
By extending your musical skills, you increase your possibilities in the music industry. The courses are tailored to meet the needs of musicians working the real world of agents and gigs. Whether your interest is in front of the microphone or behind the mixing board, MATC can help you get started on your career path.

Program Learning Outcomes
Employers will expect graduates to:
• Read and notate music at a professional level
• Demonstrate professional work habits such as punctuality, organization, congeniality and reliability
• Successfully present a marketing plan for performing groups
• Display a working knowledge of current music technologies

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Program
Audio Production

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

**TECHNICAL STUDIES**

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<td>(3) MUSIC-152 Composition †</td>
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<td>(3) MUSIC-167 Improvisation 1 †</td>
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<td>(3) MUSIC-174 Ear Training 1 †</td>
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<td>(4) MUSIC-125 Music Studio Teaching Methods †</td>
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<td>(4) MUSIC-153 Music Technology †</td>
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<td>(4) MUSIC-184 Ear Training 2 †</td>
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**GENERAL STUDIES**

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<td>ENG-151 Communication Skills 1 †</td>
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<td>MATH-107 College Mathematics †</td>
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<td>MATH-123 Math with Business Applications †</td>
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<td>PSYCH-199 Psychology of Human Relations</td>
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<td>SOCSCI-197 Contemporary American Society</td>
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**SUGGESTED ELECTIVES: FOUR CREDITS NEEDED**

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<td>MUSIC-192 Performance Techniques 2 †</td>
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<td>MUSIC-205 Music Appreciation</td>
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**TOTAL CREDITS: 69**

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.
Photography

ASSOCIATE DEGREE  Program Code: 10-203-1 Downtown Milwaukee Campus

Through this Associate in Applied Science degree program, students learn to use professional equipment and methods to master the skills necessary for this highly visual, creative and exacting profession. MATC’s laboratory/studio areas are equipped with state-of-the-art traditional and digital cameras, lighting, processing and finishing equipment. Program requirements include an internship for real-world experience. You should have good color and depth perception, and a talent for visual problem-solving. Students are required to own a Canon or Nikon D-SLR camera with manual exposure controls, adjustable apertures and shutter speeds, and interchangeable lens capabilities in order to complete course requirements.

Career Outlook
Photographers are employed in the fields of commercial/advertising, industrial and portrait photography. Photojournalism is an option, as are jobs in photographic sales and as technical representatives. Graduates also may be hired for studio positions specializing in digital imaging applications.

Added Career Value
Earn the Digital Imaging technical diploma on the way to completing this degree program.

Program Learning Outcomes
• Graduates are technically and artistically prepared for entry-level employment in the photographic industry
• Upon completion of the program, the student will present a professional-quality portfolio
• Students demonstrate the Core Abilities (critical thinking, communication, work habits, using technology)
• Students will demonstrate digital photography skills learned throughout the program

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Digital Imaging, Graphic Design, Interactive Media, Television and Video Production

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES Credits
(1) PHOTO-101 Fundamental Photography ........................................ 3
(1) PHOTO-106 View Camera Techniques ‡ ^ ...................................... 3
(1) PHOTO-107 Photographic Trends ^ ............................................. 1
(2) PHOTO-108 Photographic Lighting ‡ ^ ........................................ 3
(2) PHOTO-130 Photographic Composition ^ ....................................... 3
(2) PHOTO-139 Measurement Techniques ^ ....................................... 3
(2) PHOTO-141 Color Photography 1 ‡ ^ ........................................... 3
(3) PHOTO-103 Digital Photography ‡ ............................................. 3
(3) PHOTO-121 Commercial Photography ‡ ....................................... 3
(3) PHOTO-124 Portraiture ‡ ............................................................ 3
(3) PHOTO-142 Color Photography 2 ‡ ............................................. 3
(4) PHOTO-114 Photographic Portfolio ‡ ......................................... 3
(4) PHOTO-166 Photographic Management ‡ .................................. 1
(4) PHOTO-173 Photo-Journalism ‡ ................................................ 3
(4) PHOTO-180 Industrial Photography ‡ ......................................... 3
(4) PHOTO-190 Photographic Internship ‡ ....................................... 1

GENERAL STUDIES
ECON-195 Economics................................................................. 3
(or Any 200-series ECON course)
ENG-151 Communication Skills 1 ‡ ^ ........................................... 3
(&) ENG-152 Communication Skills 2 ‡ ......................................... 3
(or ENG-201 and any 200-series ENG or SPEECH course)
MATH-107 College Mathematics ‡ .............................................. 3
(or Any 200-series MATH course)
MATH-123 Math with Business Applications ‡ ^ .............................. 3
(or Any 200-series MATH course)
PSYCH-199 Psychology of Human Relations .................................... 3
(or Any 200-series PSYCH course)
SOCSCI-197 Contemporary American Society ................................ 3
(or Any 200-series SOCSCI or HIST course)

SUGGESTED ELECTIVES: SIX CREDITS NEEDED ...................... 6
PHOTO-102 Introduction to Digital Photography
PHOTO-104 Digital Color Management for the Graphic Industry
PHOTO-115 Advanced Digital Photography ‡
PHOTO-126 Advanced Studio Lighting ‡
PHYED-210 An Active Approach to Wellness and Fitness

TOTAL CREDITS: 69

# Prerequisite required.  
Program curriculum requirements are subject to change.
^ = Counts toward the Digital Imaging diploma program.
() = Semester order for full-time students.

Possible Careers: Digital Media Technician, Digital Output Specialist, Photographer, Photojournalist, Wedding/Portrait Photographer
Prepare for a career in the production, operation and programming areas of broadcast television, cable, or corporate and commercial video through this Associate in Applied Science degree program. You will gain hands-on experience in the high-definition studios of Milwaukee Public Television, a leader in HDTV production. Capabilities necessary for success in the program are teamwork, cooperation, and an ability to accept direction and responsibility. You must be able to work under pressure. Manual dexterity is also needed.

Career Outlook
Graduates have an excellent entry-level employment history in a competitive field. Potential employers are TV stations, cable systems, advertising agencies, private industry, educational institutions and video production houses. Opportunities exist for freelance positions or for operating your own business.

Program Learning Outcomes
Employers expect graduates to have expertise in:
• Operation of television studio and control room equipment
• Film-style field acquisition and production including news gathering
• Linear and non-linear videotape editing and scripting techniques
• Utilization of electronic graphics, animation and computers
• Integration of digital and high-definition standards in production
• Remote production and setup
• Lighting, staging and set construction
• Understanding of the television process

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra
• Course placement assessment of basic skills proficiency
• Ability to work outside normal school hours

Related Programs
Animation, Electronic Engineering Technology, Electronic Technology, Graphic Design, Interactive Media

Start Date: August
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Associate Producer, Cameraperson, Floor Manager, Lighting Director, Linear or Non-Linear Editor, Production Assistant, Technical Director
Web Designer

TECHNICAL DIPLOMA Program Code: 31-206-1 Downtown Milwaukee Campus

To prepare for this field’s ever-changing technology, students learn and apply in-depth skills in web design, design tools and web development languages. Coursework includes social media marketing, and the designing and publishing of several websites using multiple web-development languages. The abilities to work as part of a team, to work under stress and to meet deadlines will contribute to your success. A well-developed imagination, talent for visual problem-solving, good hearing and vision, normal color and depth perception also are important.

Career Outlook
Demand for web designers and webmasters is growing steadily as more businesses and organizations rely on functional and flexible websites to attract and serve their customers.

Program Learning Outcomes
Employers will expect program graduates to possess the following skills:
• Web development
• Web page design
• Web page scripting
• Project planning
• Interactive interface design
• Social media marketing
• Professionalism and good communication skills

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• Demonstration of basic computer skills in operating systems, word processing and the internet

Related Programs
eBusiness Technology Analyst, Interactive Media, IT Mobile Applications Developer, Mobile Application Designer, Mobile Designer

SIXTEEN-WEEK TERMS Credits
EBUS-118 Social Media Technologies .............................................. 3
VICOM-108 Multimedia Scripting Basics ........................................... 1
VICOM-123 Website Development ‡ ................................................. 3
VICOM-128 Web Development with HTML/CSS ................................ 3
VICOM-150 Introduction to Digital Media .......................................... 3
ENG-151 Communication Skills 1 ‡ .................................................. 3
(or) Any 200-series ENG course
VICOM-162 Database-Driven Web Design ‡ ....................................... 3
VICOM-124 Content Management Systems ‡ ...................................... 3
(or) VICOM-105 Multimedia and Web Authoring
VICOM-125 Advanced Website Development ‡ .................................. 3
(or) VICOM-163 iPhone/iPad (iOS) Application Development
VICOM-126 Mobile Web Development ‡ ............................................. 3
VICOM-152 Interactive Design for Multimedia ‡ .................................. 3
(or) VICOM-164 Android Application Development

TOTAL CREDITS: 31

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Web Designer, Web Developer, Webmaster, Front-End Designer
Gain the skills to upgrade editing techniques through time-code, computer-based edit control systems and non-linear AVID editors. Techniques and practice include split editing, list management, setting transitions, edit/review, EDL management, NLE settings, timeline manipulations, and file/media management.

Coursework is conducted in the Milwaukee Public Television production facilities for hands-on experience.

Admission Requirements
Completion of an associate degree in Television and Video Production, a bachelor’s degree in the video field, or equivalent work experience as evaluated by the School of Media and Creative Arts is a requirement for admission.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

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<td>TV-132 Advanced Videotape Editing ‡</td>
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<td>TV-142 Non-Linear Video Editing and Authoring</td>
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**TOTAL CREDITS:** 9

‡ Prerequisite required.

Program curriculum requirements are subject to change.

All credits in a certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.
Attain the job-ready skills employers seek in high-demand and growing fields including sustainable facilities operations, advanced manufacturing, engineering construction, horticulture, protective services, automotive servicing and truck driving.

**Start Your Four-Year Degree at MATC:** Associate degree program credits can be transferred to one or more four-year institutions where you can pursue a bachelor’s degree. See four-year college transfer information at matc.edu.

For all degree programs, students who have not been accepted, or have not decided on a program, may begin with General Studies courses if course prerequisites have been met.

For class times and locations or to register online, visit INFOline at matc.edu.

When registering, note that some courses are now offered at the MATC Education Center at Walker’s Square, 816 West National Avenue, Milwaukee.

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- Energy Engineering Technology
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- Greenhouse Plant Production
- Industrial Electronics and Controls
- Land Surveying
- Landscape Design Technology – CAD
- Law Enforcement
- Lean
- Metallurgical Technician
- Native Landscape Plants
- Plant Health Care
- Six Sigma Black Belt
- Six Sigma Green Belt
- Sustainable Facilities Operations
Air Conditioning and Refrigeration Technology

ASSOCIATE DEGREE Program Code: 10-601-1 Oak Creek Campus

(Official WTCS title: Air Conditioning, Heating and Refrigeration Technology)

This Associate in Applied Science degree program is directed at meeting the need for technically trained personnel in sales, system design and layout, and supervision of equipment installation, maintenance and servicing. Students receive the necessary background in mathematics, drafting, electricity and thermodynamics. You may take portions of the technical course HVAC2-116 Refrigeration 2 off campus for co-op credit if employment opportunities arise and the employer and instructor agree. You should have a high mechanical aptitude and be able to work in enclosed areas. People skills, manual dexterity, and the ability to analyze equipment operation are also important. High school-level courses in mechanical drafting and electricity are desirable.

Career Outlook
There is steady demand for air conditioning and refrigeration systems, and trained technicians are sought to operate and maintain these systems. Graduates also may work as sales representatives for air conditioning and refrigeration equipment vendors. As a graduate of this program, you may wish to pursue a four-year degree in HVAC engineering, or become an apprentice in the refrigeration or HVAC fields.

Program Learning Outcomes
Employers expect graduates to:
• Read construction and mechanical drawings
• Know about air conditioning system operations
• Understand pneumatic and electrical control systems
• Troubleshoot refrigeration and air conditioning systems
• Complete layout drawings for HVAC systems

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment
• One year of high school-level algebra

Related Programs
Appliance Technician, Preparatory Plumbing, Refrigeration, Air Conditioning and Heating Service Technician

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Air Conditioning Technician, Refrigeration Technician Sales, Engineer Sales Representative, System Design Technician, System Designer

TOTAL CREDITS: 69

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.

TECHNICAL STUDIES Credits
(1) HVAC2-109 Introduction to the HVAC Industry ............................ 1
(1) HVAC2-110 Air Conditioning Fundamentals ............................... 3
(1) HVAC2-113 Electrical Fundamentals ........................................ 3
(1) HVAC2-132 Architectural and Mechanical Fundamentals .......... 4
(2) HVAC2-114 Electrical Controls and Systems ‡ ........................ 4
(2) HVAC2-115 Refrigeration 1 ‡ ............................................... 4
(2) HVAC2-120 Heating Systems 1 ‡ ............................................ 4
(2) WELDTC-144 Welding Fundamentals for HVAC ..................... 2
(3) HVAC2-116 Refrigeration 2 ‡ ............................................... 4
(3) HVAC2-121 Heating Systems 2 ‡ ............................................ 4
(3) HVAC2-146 Digital Energy Management Systems ‡ ............... 2
(4) HVAC2-125 Control Application and Circuits ‡ ...................... 4
(4) HVAC2-126 Air Conditioning Systems ‡ ................................ 3
(4) HVAC2-144 Servicing and Troubleshooting Refrigeration and Air Conditioning ‡ 3

GENERAL STUDIES
ECON-195 Economics ............................................................. 3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡ ......................................... 3
(8) ENG-152 Communication Skills 2 ‡ ................................... 3
(or) ENG-201 and any 200-series ENG or SPEECH course
MATH-113 College Technical Mathematics 1A ‡ ....................... 3
(or) Any 200-series MATH course
NATSCI-169 Energy in Nature, Technology and Society ............... 3
(or) Any 200-series NATSCI course
PSYCH-199 Psychology of Human Relations ................................ 3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society .......................... 3
(or) Any 200-series HIST or SOCSSCI course

SUGGESTED ELECTIVES: THREE CREDITS NEEDED ..................3
MATH-114 College Technical Mathematics 1B ‡
PHYED-210 An Active Approach to Wellness and Fitness
WELDTC-101 Welding Theory 1

Page 140
As household electrical appliances become more complex, a greater degree of knowledge is required to diagnose and service them. Appliance Technician is a two-semester program that combines coursework with hands-on lab experience to acquaint you with the fundamental knowledge and skills needed. Ability to keep accurate and legible records is an essential component of the program and future employment. Good manual dexterity, a high mechanical aptitude and an inquisitive, analytical mind also are important. You will need to be able to do some bending and lifting. Also necessary in the workplace are a valid driver's license, ability to be insured, and courteous behavior and good grooming.

Career Outlook
The need for trained service technicians qualified to maintain appliances has increased. Appliance technicians install, service and repair automatic washers, dryers, ranges, refrigerators, dishwashers, compactors and other major appliances that are relied upon in today's households. Other related jobs are parts person, salesperson, dispatcher and field service representative. It is possible to advance to a service manager position, as well as operate your own business.

Program Learning Outcomes
Employers expect graduates to demonstrate:
• Sound understanding of basic electronics and the functions of typical electrical hardware such as thermostats, relays, switches, circuitry
• Electromechanical knowledge and skills to diagnose and correct appliance difficulties
• Oral and written communication skills
• Good math skills

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Air Conditioning and Refrigeration Technology, Preparatory Plumbing, Refrigeration, Air Conditioning and Heating Service Technician

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPSVC-308</td>
<td>Electricity for Appliance Servicing ‡</td>
<td>4</td>
</tr>
<tr>
<td>APPSVC-310</td>
<td>Laundry Equipment ‡</td>
<td>5</td>
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<tr>
<td>APPSVC-316</td>
<td>Kitchen Equipment 1 ‡</td>
<td>4</td>
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<tr>
<td>APPSVC-329</td>
<td>Related Business for Appliance Servicing ‡</td>
<td>1</td>
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<tr>
<td>APPSVC-324</td>
<td>Refrigeration 1 (Theory and Techniques) ‡</td>
<td>4</td>
</tr>
<tr>
<td>APPSVC-340</td>
<td>Kitchen Equipment 2 ‡</td>
<td>4</td>
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<tr>
<td>APPSVC-342</td>
<td>Refrigeration 2 (Servicing) ‡</td>
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<tr>
<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
<td>1</td>
</tr>
<tr>
<td>ENG-345</td>
<td>Communications 1</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 29

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Appliance Repair, Appliance Servicing Technician, Service Manager, Service Technician
This Associate in Applied Science degree program prepares students for work in architectural and construction-related fields; the primary emphasis is developing entry-level employment skills. Students are introduced to architectural drafting through sketching techniques, and then receive extensive training in computer-aided drafting and Building Information Modeling (BIM) using AutoCAD and REVIT (BIM) software. Construction materials and methods, architectural practices, building codes, and mechanical and environmental systems also are studied. Important to your success are drawing and visualization abilities, strong math skills, good writing and oral skills, plus psychomotor skills. For information about MATC’s articulation agreements with four-year universities related to this program, meet with your program advisor.

Career Outlook
Technicians work with architects, engineers, contractors, designers, and building material manufacturers and suppliers. Job duties may include basic drafting, detailing, building information modeling, estimating, technical report writing, specification research and development, and field inspection.

Program Learning Outcomes
- Use computer-aided drafting and building information modeling architectural design software
- Demonstrate knowledge of construction principles, techniques and building codes
- Demonstrate knowledge of mechanical, electrical and plumbing systems in buildings
- Demonstrate knowledge of principles of sustainability and green architecture
- Develop a set of construction documents including site plans, floor plans, elevations and details for design based on a building design program developed with a client
- Show an understanding of the influence of architectural history on buildings today

Admission Requirements
- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- One year of high school-level algebra and geometry

Start Date: August
For Information
Downtown Milwaukee Campus – 414-297-MATC

Possible Careers: Architectural Design; CADD Drafting, Detailing and Modeling, Estimating, Field Inspection, Research
Attain the skills needed to work in cabinet shops, millwork shops, furniture factories, display shops and maintenance shops through this two-semester program. The curriculum includes how to read blueprints, make detailed drawings, and use machinery commonly used in the woodworking industry. High school woodworking courses will prove highly beneficial. Other helpful courses are mathematics and mechanical or architectural drawing. To be successful in the program, you will need good eye-hand coordination. You will be required to use powerful machines and you must be able to follow verbal and written instructions. Reading ability, good spatial visualization and manual dexterity are also important to your success.

Career Outlook
The employment outlook for cabinetmakers, machine operators and repair people is favorable. There are many changes taking place in the woodworking industry, and current training is a marketable asset.

Program Learning Outcomes
Employers expect graduates to:

- Read blueprints
- Identify materials
- Set up machinery
- Operate saws, joiners, planers, shapers, sanders and other woodworking machinery
- Assemble parts

Admission Requirements
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Architectural Technology, Carpentry, Electricity, Mechanical Design Technology

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>CABMIL-300</td>
<td>Machine Maintenance/Jigs and Fixtures</td>
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</tr>
<tr>
<td>CABMIL-303</td>
<td>Woodworking 1</td>
<td>5</td>
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<tr>
<td>CABMIL-304</td>
<td>Woodworking Fundamentals</td>
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</tr>
<tr>
<td>CABMIL-355</td>
<td>Materials and Construction</td>
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</tr>
<tr>
<td>CABMIL-385</td>
<td>Cabinet Detailing</td>
<td>2</td>
</tr>
<tr>
<td>CARP-380</td>
<td>Arithmetic for Carpenters</td>
<td>1</td>
</tr>
<tr>
<td>CIVIL-108</td>
<td>Construction Computer Applications</td>
<td>1</td>
</tr>
<tr>
<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
<td>1</td>
</tr>
<tr>
<td>CABMIL-305</td>
<td>Woodworking 2</td>
<td>5</td>
</tr>
<tr>
<td>CABMIL-306</td>
<td>Advanced Woodworking</td>
<td>3</td>
</tr>
<tr>
<td>CABMIL-383</td>
<td>Quantity Survey 1</td>
<td>2</td>
</tr>
<tr>
<td>CABMIL-386</td>
<td>Cabinet Layout</td>
<td>2</td>
</tr>
<tr>
<td>ENG-345</td>
<td>Communications</td>
<td>1</td>
</tr>
<tr>
<td>MCDESg-120</td>
<td>Basic AutoCAD</td>
<td>1</td>
</tr>
<tr>
<td>PAINT-353</td>
<td>Wood Finishing</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 31

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Cabinetmaker, Detailer, Machine Operator, Saw Operator, Shaper Operator, Repair Person

Start Date: August
For Information
Oak Creek Campus – 414-571-4500
Auto Collision Repair and Finish Technician

TECHNICAL DIPLOMA  Program Code: 31-405-1  Oak Creek Campus

This two-semester program will prepare you for employment with automobile dealerships, independent body shops, specialized shops, franchise repair garages and manufacturing jobs requiring spray painting ability. With instructor’s consent, portions of this program may be taken off campus for co-op credit. Important to your success in the program are manual dexterity and the ability to distinguish colors. After admission to the program, you will need to have an automotive repair tool set.

Career Outlook
Based on the high number of passenger cars and trucks being produced, the need for automobile body technicians is at a high level. Employment prospects are promising for technicians trained in the complex design of unibody construction.

Program Learning Outcomes
Employers expect graduates to:
• Use hand tools, power tools and shop equipment properly, with attention to safety measures
• Analyze unibody damage
• Blend and match various types of paints
• Interpret manufacturers’ manuals as well as aftermarket publications
• Repair and paint damaged vehicles
• Repair and/or replace damaged panels on vehicles

Admission Requirements
• Demonstration of proficiency in basic skills through a course placement assessment
A high school diploma or GED is recommended.

Related Programs
Automotive Maintenance Technician, Automotive Technology, Diesel and Powertrain Servicing

SIXTEEN-WEEK TERMS  Credits
AUTOBY-300  Introduction to Auto Body Fundamentals .............................. 3
AUTOBY-301  Automobile Sheet Metal Correction ............................................ 1
AUTOBY-302  Automobile Panel Straightening ............................................ 2
AUTOBY-303  Body Servicing Equipment and Supplies .................................... 1
AUTOBY-304  Basic Auto Mechanical Systems ............................................... 1
AUTOBY-305  Auto Body 1 ‡ ..................................................................... 5
SOCSCI-330  Applied Economics and Human Relations .................................... 1
WELD-340  Welding for Auto Body Technicians ............................................. 2
AUTOBY-310  Automobile Body Fundamentals ‡ ........................................... 4
AUTOBY-311  Automobile Frame Straightening ‡ ......................................... 3
AUTOBY-312  Electrical Servicing for Auto Body Repairing ............................ 1
AUTOBY-313  Surface Preparation and Color Matching ‡ ............................... 1
AUTOBY-314  Front-End Alignment ............................................................. 1
AUTOBY-315  Auto Body 2 ‡ ..................................................................... 5
ENG-345  Communications 1 .................................................................. 1

TOTAL CREDITS: 32

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Assistant Body Shop Manager, Body Repairer, Estimator, Insurance Company Appraiser, Painter
Automotive Maintenance Technician

TECHNICAL DIPLOMA Program Code: 31-404-3 Oak Creek Campus

This one-year program trains students to service and repair the drivetrain, electrical and mechanical systems of automobiles. To be successful, you will need a high degree of manual dexterity and the ability to interpret drawings found in service manuals. After admission to the program, students need to have an automotive repair tool set.

With an employer’s and instructor’s consent, portions of this program may be taken off campus for co-op credit. The program is accredited by National Automotive Technicians Education Foundation.

Career Outlook
Graduates typically attain positions with duties such as electrical systems repair, wheel alignment and balancing, engine repair and tuneup, automatic and manual transmission repair, and new car predelivery inspection.

Program Learning Outcomes
• Properly use hand and power tools, and shop equipment
• Locate technical data and service repair information
• Look up specifications in shop manuals
• Service and repair the following systems: brake, steering and suspension, heating, cooling, and air conditioning, exhaust, emission control, fuel delivery, ignition
• Provide minor service and repair on manual and automatic transmissions and transaxles, differentials, driveshafts and axle half shafts, and engines
• Service and repair (with an exposure to overhaul techniques) manual and automatic transmissions and transaxles, differentials, driveshafts and axle half shafts, engines, and electrical components
• Perform routine service, such as lubrication, oil and filter change, tire balance and rotation, engine tuneup, and accessory service
• Develop a working rapport with other employees
• Exhibit the desire to remain current in the field

Admission Requirements
• Course placement assessment of basic skills proficiency
A high school diploma or GED is recommended.

Related Programs
Automotive Technology, Diesel and Powertrain Servicing

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Automobile Servicing Technician, Engine Repair, Powertrain Maintenance
Automotive Technology (Comprehensive)

ASSOCIATE DEGREE  Program Code: 10-602-6  Mequon Campus

The program consists of four, two-year Associate in Applied Science degree programs structured to prepare students to perform bumper-to-bumper diagnostics, repairs and preventive maintenance on automobiles and light trucks. The Automotive Technology programs are: Mopar CAP (College Automotive Program; formerly Chrysler CAP), CART (Comprehensive Automotive Repair Technology), Ford ASSET (Automotive Student Service Educational Training) and Honda PACT (Professional Automotive Career Training). Instruction alternates between classroom and intern work experience. Important skills necessary for success are the abilities to read technical manuals and solve basic math problems, along with a good mechanical aptitude and manual dexterity. The program is accredited by National Automotive Technicians Education Foundation.

Career Outlook
The demand for trained automotive technicians is extremely high. Opportunities exist with dealerships, mass merchandisers, service stations and corporate industry, as well as owning your own business.

Program Learning Outcomes
- Use hand and power tools and equipment safely
- Use service manuals and other service and repair information
- Apply electrical and electronic skills in diagnosing malfunctions of electrical/electronic components
- Service, troubleshoot and repair the following auto assemblies: engines and other components
- Service, troubleshoot, repair, overhaul, or rebuild transmissions, transaxles, drivelines and rear axle assemblies, engines and other components
- Demonstrate customer service and communication skills

Admission Requirements
- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- A dealership sponsor is required to provide internship opportunities as a condition for admission. Program advisors will help you locate a sponsoring dealership once the initial academic testing is completed.

Related Programs
Auto Collision Repair and Finish Technician, Automotive Maintenance Technician, Diesel and Powertrain Servicing

Start Dates: August/October

For Information
Mequon Campus – 262-238-2200

Possible Careers: Automotive Technician, Engine Repair Technician, Automotive Heating and Air Conditioning Technician, Transmission Technician
Aviation Technician (Airframe)

This program is governed by the Federal Aviation Administration. Students will become qualified to maintain aircraft electrical, instrument and power control systems. You are required to attend a minimum of 400 hours of the General Aviation Technician component (offered each fall semester) prior to enrolling in this technical diploma program. Students must maintain a 2.0 grade-point average in the general component to be eligible for the Airframe or Powerplant programs. To successfully complete either program, you must attend 750 hours of the respective section, and you are required to pay for any missed class time. You must have a high mechanical aptitude, and the ability to remain organized and meticulous under deadline pressure.

Aviation technicians are licensed by the Federal Aviation Administration. Following graduation, you will be eligible to take the FAA-administered licensing exam, which includes written, practical and oral examinations in the general, powerplant, and airframe subject areas. FAA regulations require you to take the practical examination within two years after successful completion of the written portions of the examination. Many employers require drug tests and a complete physical examination.

Career Outlook
Skilled aviation mechanics with versatile knowledge are in high demand and work for airlines, corporations and commuter lines. Completing the Powerplant and Airframe Aviation Technician diplomas boosts earnings potential.

Program Learning Outcomes
Employers expect graduates to:
- Read and comprehend aircraft maintenance manuals
- Pinpoint aircraft malfunctions using schematics and diagnostic equipment
- Repair airframe structures and return aircrafts to service

Admission Requirements
- Completion of the General Aviation Technician component or instructor approval
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Background in mathematics and the physical sciences is recommended.

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Aviation Technician, Airframe Technician, Aircraft Electrical Technician, Environmental Systems Technician, Hydraulics Technician
Aviation Technician (Powerplant)

TECHNICAL DIPLOMA  Program Code: 31-402-3  Oak Creek Campus

This program is governed by the Federal Aviation Administration. A specialized training program, it concentrates on aircraft engine and propeller systems. You are required to attend a minimum of 400 hours of the General Aviation Technician component (offered each fall semester) prior to enrolling in this technical diploma program. Students must maintain a 2.0 grade-point average in the general component to be eligible for the Airframe or Powerplant programs. To successfully complete either program, you must attend 750 hours of the respective section, and you are required to pay for any missed class time. You must have a high mechanical aptitude, and the ability to remain organized and meticulous under deadline pressure.

Aviation technicians are licensed by the Federal Aviation Administration. Following graduation, you will be eligible to take the FAA-administered licensing exam, which includes written, practical and oral examinations in the general, powerplant, and airframe subject areas. FAA regulations require you to take the practical examination within two years after successful completion of the written portions of the examination. Many employers require drug tests and a complete physical examination.

Career Outlook
Aircraft propulsion mechanics remain in high demand and work for airlines, corporations and commuter lines. Completing both the Powerplant and Airframe Aviation Technician diplomas boost earnings considerably.

Program Learning Outcomes
Employers expect graduates to:
• Read and comprehend aircraft maintenance manuals
• Analyze and repair powerplant malfunctions
• Maintain aircraft powerplant subsystems and determine their airworthiness

Admission Requirements
• Completion of the General Aviation Technician component or instructor approval
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Background in mathematics and the physical sciences is recommended.

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Aviation Technician, Airframe Technician, Aircraft Electrical Technician, Environmental Systems Technician, Hydraulics Technician
Biomedical Electronics Technology

ASSOCIATE DEGREE Program Code: 10-605-6 Downtown Milwaukee Campus

(Official WTCS title: Bio-Medical Electronics)
Prepare for a technical career with an employer that uses, repairs or manufactures biomedical electronic equipment, such as bedside monitor systems and EKG machines, through this Associate in Applied Science degree program. A cooperative education internship is required; when you register for ELCTEC-137 and ELCTEC-138 Biomedical Electronics Technician Internship 1 and 2, you will receive practical experience in electronics through on-the-job training. Normal vision, good manual dexterity, and the ability to work closely with others involved in a project are important for success in the program.

Career Outlook
Reliance on electronics to test and monitor patients in healthcare facilities has created a need for biomedical electronics technicians in the healthcare and the electronic equipment industries. Program graduates hired by clinics and hospitals typically install, test, calibrate and repair biomedical electronic equipment. Manufacturers employ technicians to build and final-test equipment. Contract service firms and equipment distributors also hire.

Program Learning Outcomes
• Apply biomedical electronics technology theory and skills
• Apply critical thinking skills necessary to analyze, install and maintain biomedical electronic systems and equipment
• Troubleshoot and repair malfunctioning electronic circuits, systems and networks
• Write comprehensive technical reports

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra or the equivalent
• Course placement assessment of basic skills proficiency
• Good health as evidenced by a medical examination
• Documentation of compliance with Wisconsin’s Caregiver Law (Criminal background check)
• Proper immunizations
• 10-panel drug test

Related Programs
Computer Electronics Technology, Electronic Technology

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-6749

Total Credits: 70

Possible Careers: Biomedical Electronic Technician, Biomedical Equipment or Instrumentation Technician, Clinical Engineering Technician
Developed with the assistance of local tradespeople and contractors, this program is designed to prepare you to enter the masonry trade. The courses and skills taught are directed at fulfilling the entry-level requirements of masonry contractors. Students who qualify for employment are available for work during the prime construction season. Important factors for success in the program are physical strength, manual dexterity, and the ability to work well with others.

**Career Outlook**

Increased construction of residential, commercial and industrial buildings has resulted in a need for bricklayers. Graduates enter employment as a starting bricklayer. Advancement to journey-level worker, foreman and superintendent are available with experience.

**Program Learning Outcomes**

Employers expect graduates to possess:

- Ability to lay brick and block in an efficient and effective manner
- Ability to read blueprints
- Job-related skills
- Knowledge of residential, commercial and industrial methods of construction

**Admission Requirements**

- High school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

**Related Programs**

Architectural Woodworking/Cabinetmaking, Carpentry, Preparatory Plumbing

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**SIXTEEN-WEEK TERMS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<td>Communications 2</td>
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<tr>
<td>MASON-300</td>
<td>Fundamental Bricklaying</td>
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<td>MASON-303</td>
<td>Advanced Bricklaying</td>
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<td>MASON-308</td>
<td>Job Safety and Layout</td>
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<td>MASON-356</td>
<td>Methods 1 – Fundamentals ‡</td>
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<td>MASON-380</td>
<td>Mathematics for Bricklayers 1</td>
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<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
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<td>MASON-302</td>
<td>OSHA/First Aid for Masons</td>
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<tr>
<td>MASON-306</td>
<td>Advanced Masonry Techniques 1</td>
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<tr>
<td>MASON-310</td>
<td>Advanced Masonry Techniques 2 ‡</td>
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<td>Methods 2 – Advanced ‡</td>
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<tr>
<td>MASON-387</td>
<td>Blueprint Reading for Masons</td>
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</table>

**TOTAL CREDITS:** 32

*‡ Prerequisite required.*

Program curriculum requirements are subject to change.

Bricklaying and Masonry classes held at MATC Education Center at Walker's Square, 816 West National Avenue, Milwaukee; see INFOline at matc.edu.

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Start Date: August

For Information

414-297-MATC

Possible Careers: Apprentice Bricklayer, Foreman, Journey-Level Worker, Superintendent
This two-semester program will prepare you for employment in the construction of residential and commercial structures. The curriculum consists of reading construction drawings and learning about the materials commonly used by carpenters. Practical experience is given in the use of power and hand tools. To be successful in the program, you will need to be able to work on ladders and scaffolds, and work outdoors in all kinds of weather. Manual dexterity is a must.

**Career Outlook**
As residential and commercial structures continue to be built and remodeled, there is a need for carpenters. Graduates of the program may obtain employment as carpenters, carpenter apprentices, rough carpenters, form carpenters and finish carpenters.

**Program Learning Outcomes**
Employers expect graduates to:
- Read blueprints and follow directions
- Identify construction materials and use those materials properly
- Climb ladders and work on scaffolds
- Use power saws and other construction equipment
- Assemble materials according to layout markings

**Admission Requirements**
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

High school-level drafting and construction courses are desirable.

**Related Programs**
Architectural Woodworking/Cabinetmaking, Bricklaying/Masonry, Preparatory Plumbing

**SIXTEEN-WEEK TERMS**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>CARP-301</td>
<td>House Framing</td>
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<td>CARP-302</td>
<td>OSHA/First Aid</td>
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<td>CARP-304</td>
<td>House Framing Fundamentals</td>
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<td>Building Materials</td>
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<td>Arithmetic for Carpenters</td>
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<td>CARP-385</td>
<td>Blueprint Reading 1</td>
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<td>CABMIL-341</td>
<td>Millwork Techniques</td>
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<td>CARP-306</td>
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<td>CARP-383</td>
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<tr>
<td>ENg-345</td>
<td>Communications 1</td>
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</table>

**TOTAL CREDITS:** 32

† Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Carpenter, Carpenter Apprentice, Finish Carpenter, Form Carpenter
Civil Engineering Technology

ASSOCIATE DEGREE Program Code: 10-607-1 Downtown Milwaukee Campus

This Associate in Applied Science degree program prepares engineering technicians to assist civil engineers in planning, designing, scheduling, estimating, surveying and inspecting construction projects, such as highways, bridges, buildings, water systems and land development. Also, specific elective surveying courses provide the student with an option for a career in land surveying. This program is approved by the Land Surveyor section of the Wisconsin Examining Board of Architects, Professional Engineers, Designers and Land Surveyors. During the course of the program, students have the opportunity to take the examination for the Highway Technician Certification PCC Tech Level 1, as well as the Certified Survey Technician Level 1 exam. Program graduates are eligible to take additional certification exams. Graduates can also become licensed as registered land surveyors after meeting Wisconsin registration requirements.

Career Outlook
Civil engineering technicians and surveying technicians are needed in all project development phases. Employers include municipal engineering departments, civil engineering consulting firms, structural design firms, land surveying companies, highway departments, construction companies and public utilities.

Program Learning Outcomes
• Utilize critical thinking skills to solve technical problems
• Perform basic surveying
• Exhibit drafting and CAD skills
• Demonstrate technical competence with surveying and civil engineering technology equipment
• Communicate engineering and technical information using appropriate technical language
• Apply analytical mathematics and graphical knowledge and skills to the solution of engineering problems
• Work independently and as a member of a design team

Admission Requirements
• A high school diploma or GED
• Course placement assessment of basic skills proficiency
• One year of high school-level algebra

Related Programs
Architectural Technology, Mechanical Design Technology

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES Credits
(1) CIVIL-101 Civil Engineering Drawing..........................2
(1) CIVIL-105 Computer Applications ................................2
(1) CIVIL-135 Public Works Engineering and Estimating..........3
(1) CIVIL-155 Surveying 1 ..............................................2
(2) CIVIL-102 Introduction to AutoCAD............................2
(2) CIVIL-147 Soils and Materials Testing ‡ .......................3
(2) CIVIL-156 Surveying 2 ‡ ...........................................2
(3) CIVIL-106 Intermediate AutoCAD ‡ .............................2
(3) CIVIL-141 Statics and Strength of Materials ‡ ...............4
(3) CIVIL-157 Route and Highway Surveying ‡ ....................3
(4) CIVIL-142 Structures ‡ ............................................3
(4) CIVIL-148 Structural Detailing ‡ .................................3
(4) CIVIL-158 Land Surveying ‡ .....................................2
(4) CIVIL-170 Sewer and Water Systems ‡ .........................3

GENERAL STUDIES
ECON-195 Economics ..................................................3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡ ...............................3
(or) ENG-201 and any 200-series ENG or SPEECH course
ENG-152 Communication Skills 2 ‡ ...............................3
MATH-115 College Technical Mathematics 1 ‡ .................5
(or) MATH-201 College Algebra
MATH-116 College Technical Mathematics 2 ‡ ....................4
(or) MATH-202 Trigonometry
NATSCI-137 Comprehensive Technical Physics ......................4
(or) Any 200-series NATSCI course
PSYCH-199 Psychology of Human Relations .......................3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society ....................3
(or) Any 200-series HIST or SOCSCI course

SUGGESTED ELECTIVES: SIX CREDITS NEEDED ...............6
CIVIL-160 Legal Elements of Land Surveying ‡
CIVIL-161 Boundary Location ‡
ARCHT-150 Introduction to REVIT

TOTAL CREDITS: 70

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.
Computer Electronics Technology

ASSOCIATE DEGREE  Program Code: 10-605-3  Downtown Milwaukee Campus

(Official WTCS title: Electronics – Computer)
To prepare for a technical career in the computer field, you will learn to operate, install, configure, upgrade and maintain microcomputers, peripheral devices and network hardware through this Associate in Applied Science degree program. You also will develop software programs using the most popular operating systems (DOS, Windows, UNIX, Netware) and programming languages (C, MASM—the Intel assembly language). This degree program is designed to provide a blend of hands-on learning experiences in both computer hardware and software using up-to-date equipment. Manual dexterity and good observation skills are important for success. When employment opportunities arise, and with the employer’s and instructor’s consent, ELCTEC-100 Electronics Co-Op may be taken off campus for co-op credit.

Career Outlook
Extensive opportunities are available for graduates who can skillfully perform installation, configuration, upgrading and maintenance of computer and network systems, and who can develop technical software.

Program Learning Outcomes
• Demonstrate theoretical knowledge and practical skills to install, upgrade, maintain and repair computer systems, networks and supporting infrastructures
• Demonstrate theoretical knowledge and critical thinking skills to analyze and troubleshoot failing computer systems, networks and supporting infrastructures
• Demonstrate the skills to repair failing computer systems, networks and supporting infrastructures
• Demonstrate oral and written communication skills to present oneself to prospective employers

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra
• Demonstration of proficiency in basic skills through course placement assessment

Keyboarding skills will prove helpful.

Related Programs
Biomedical Electronics Technology, Electronic Engineering Technology, Electronic Technology

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES

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<thead>
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<td>ELCTEC-170</td>
<td>Computer Systems ‡</td>
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<td>ELCTEC-111</td>
<td>DC and AC Electronics 2 ‡</td>
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<td>ELCTEC-120</td>
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<td>ELCTEC-140</td>
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<td>ELCTEC-186</td>
<td>Fabrication Techniques ‡</td>
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<td>ELCTEC-173</td>
<td>Computing With C ‡</td>
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<td>Computer Networks ‡</td>
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<td>Advanced Computer Systems ‡</td>
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GENERAL STUDIES

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<td>MATH-115</td>
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<td>MATH-116</td>
<td>College Technical Mathematics 2 ‡</td>
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<tr>
<td>NATSCI-137</td>
<td>Comprehensive Technical Physics ‡</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations ‡</td>
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<td>SOCSSCI-197</td>
<td>Contemporary American Society ‡</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED   3

TOTAL CREDITS: 70

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.
To prepare you for employment as a CNC machine operator and programmer, MATC’s equipment includes six industrial-based CNC machining centers and turning centers, and CAD/CAM workstations. Students gain hands-on experience in all phases of programming and operations. High mechanical aptitude, problem-solving skills, and keen spatial and visual abilities are important for your success in the program.

**Career Outlook**

Large and small manufacturers need CNC machine operators/programmers. Due to the high number of industrial companies in southeastern Wisconsin, there is a shortage of skilled people. Job prospects are especially positive for trained CNC programmers. Duties typically available to program graduates include developing and preparing numerically controlled programs, assisting in the development of the operational process plan for products to be manufactured, and serving as a liaison between engineering and manufacturing departments.

**Program Learning Outcomes**

- Apply a background in math, including trigonometry, and read engineering drawings
- Operate CNC machining and turning centers, and CNC program proveouts
- Apply CAD/CAM programming methods needed for CNC centers
- Understand fixtures techniques and tooling selection for machining typical piece parts
- Demonstrate a basic knowledge of computer hardware and software

**Admission Requirements**

- High school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment
- Completion of CNC Machine Tool Operations diploma program
- Completion of two years of hands-on CNC machine tool experience

**Related Programs**

Machine Tool Operations, Tool and Die Making

**Possible Careers:** CNC Machine Operator, CNC Machine Programmer
This Associate in Applied Science degree program prepares you for employment in law enforcement at the state, local and federal levels, as well as in the field of private security. Many of the courses contain training directly from the state law enforcement standards board curriculum related to the certification of law enforcement officers. Successful program completion may qualify you to enroll in basic recruit training that leads to certification in Wisconsin. Some law enforcement agencies list an associate degree as a pre-employment requirement; you may also acquire knowledge that may be acceptable in lieu of other agency requirements.

Program Learning Outcomes

- Determine the nature of a problem and decide on a legal course of action
- Recall details and properly document for use in civil or criminal proceedings
- Develop skills for safe use of equipment, firearms and vehicles
- Possess a broad understanding of government, the criminal justice process, and supporting agencies
- Exhibit emotional stability and react calmly in emergency situations
- Develop skills for the efficient and safe use of equipment, firearms and vehicles

Admission Requirements

- Age 17 and older
- Official high school or GED/HSED transcript, and an ACT or Accuplacer test score above the program minimum
- Course placement assessment of basic skills proficiency
- Background check

Possible Careers: Deputy Sheriff, Investigator, Police Officer, Private Security Professional
Diesel and Powertrain Servicing

This one-year program prepares you for servicing equipment powered by gas or diesel engines, such as stationary engines, construction equipment and marine applications, with emphasis on the heavy truck field. With the instructor’s consent, portions of this program may be taken off campus for co-op credit. To be successful in the program, it is important to be attentive and follow directions to ensure personal safety and avoid costly errors. After admission to the program, each student will need a basic, hand tool set. The program is accredited by the National Automotive Technicians Education Foundation.

Career Outlook
In the transportation and construction equipment industries, truck and heavy equipment mechanics are in constant demand. Employment opportunities include dealerships, distributors, independents, fleets and companies using heavy equipment. Typical job titles of positions available for program graduates are diesel mechanic, truck mechanic, service technician, construction equipment mechanic and sales/service technician.

Program Learning Outcomes
Employers expect graduates to demonstrate:
- Preventive maintenance skills relative to checking, lubricating and making necessary adjustments and minor repairs to extend serviceability
- Skill in working with specialized test equipment and machine tools
- Accuracy in identifying component parts and assemblies to assist in proper replacement
- Sufficient skills in troubleshooting and repairing engines, drive components and electrical components
- Organized work habits, neatness and safety consciousness

Admission Requirements
- Course placement assessment of basic skills proficiency
  A high school diploma or GED is recommended.

Related Programs
Automotive Maintenance Technician, Automotive Technology, Aviation Technician

Start Dates: August/January
For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Diesel Mechanic, Truck Mechanic, Service Technician

EIGHT-WEEK TERMS Credits
DIESEL-301 Diesel Fuel Systems ‡ ....................................................... 2
DIESEL-307 Electrical/Electronics Shop ‡ ............................................. 5
SOCSCI-330 Applied Economics and Human Relations ............................. 1
DIESEL-319 Driveline Components ‡ .................................................... 5
DIESEL-345 Preventive Maintenance ‡ .................................................. 2
DIESEL-306 Engine Construction and Installation ‡ .................................. 5
DIESEL-338 Emission Control Systems ‡ ............................................... 2
ENG-345 Communications 1 .................................................................... 1
WELD-305 Fundamentals of Oxyfuel Welding ......................................... 1
DIESEL-333 Heavy Truck HVAC Systems ‡ .......................................... 2
DIESEL-341 Front-End, Brake and Suspension Systems ‡ ....................... 5

TOTAL CREDITS: 31

‡ Prerequisite required.
Program curriculum requirements are subject to change.
This two-semester program prepares students for entry-level electrical line worker positions in industry. Although completion of this program does not substitute for an electrical apprenticeship, it does offer the basic knowledge needed to begin working for some electrical utilities, contractors and in related trades. Good physical strength, manual dexterity and the ability to climb without fear of heights are important attributes for success. Normal vision, including color perception, is important. Commercial driver’s license eligibility is recommended.

Career Outlook
Industry requires electrical line workers to construct and maintain overhead electric transmission and distribution systems; work on energized and de-energized circuits; install and remove line equipment, street lights, poles and anchors; and perform wiring working from a pole, ladder, insulated aerial basket or insulated work platform. Electrical line workers also operate various equipment including auger, derrick material handler and articulated arm. Positions available to program graduates include apprenticeship or entry-level employment as a line worker, substation electrician, meter worker and cable installer.

Program Learning Outcomes
• Apply basic electrical principles to electrical power distribution
• Use basic meters to check electrical circuits
• Do basic calculations relative to circuit loading and wire size
• Climb and work overhead
• Perform associated mechanical operations necessary to install, service or remove electrical line equipment
• Work cooperatively in construction crews
• Read construction orders and prints
• Communicate using written and oral means

Admission Requirements
• A high school diploma or GED
• Ability to drive and a valid driver’s license
• Course placement assessment of basic skills proficiency

Related Program
Electricity

SIXTEEN-WEEK TERMS

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<td>ELECTY-319</td>
<td>Electrical Power Distribution 1B ‡</td>
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<td>ELECTY-320</td>
<td>Electrical Principles and Applied Math 1 ‡</td>
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<tr>
<td>ELECTY-321</td>
<td>Line Mechanic Rescue and Safety ‡</td>
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<td>ELECTY-322</td>
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<td>ELECTY-323</td>
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<td>Electrical Principles and Applied Math 2 ‡</td>
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<td>ENg-341</td>
<td>Applied Communications</td>
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TOTAL CREDITS: 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Electricity

TECHNICAL DIPLOMA Program Code: 31-413-1 Downtown Milwaukee Campus

This two-semester program prepares you for entry-level electrician positions in industry and the building trades. Completion of this program does not substitute for an electrical apprenticeship, but does offer you the basic knowledge needed to begin working for some electrical contractors. Some graduates use the training as a stepping-stone to an apprenticeship, either as a construction electrician or industrial maintenance electrician. Skills and aptitudes necessary for success in the program are normal physical strength, good manual dexterity, and the ability to climb without fear of heights. Normal vision, including color perception, is important. MATC also offers a certificate program, Construction Electricity, which concentrates on residential electrical construction.

Career Outlook
Many fields, including industry, construction and maintenance, require electricians and this diploma helps you start that career path. Positions available to program graduates include electrician's helper and electrical parts distribution worker.

Program Learning Outcomes
Employers expect graduates to:
• Use basic meters to check electrical circuits
• Do basic calculations relative to circuit loading and wire size
• Perform associated mechanical operations, such as conduit bending and wiring
• Read electrical blueprints and interpret electrical code
• Communicate using written and oral means

Admission Requirements
• A high school diploma or GED
• Ability to drive and a valid driver's license
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs
Electrical Power Distribution/Line Mechanic

SIXTEEN-WEEK TERMS Credits
ELECTY-308 Basic Skills for Electrical Wiring ‡ ........................................ 2
ELECTY-310 Cable Wiring ‡ ................................................................. 2
ELECTY-312 Electrical Raceway Installation ‡ .................................... 2
ELECTY-340 Electrical Code Fundamentals 1 ‡ .................................... 2
ELECTY-378 Construction Blueprint Reading ‡ .................................. 1
ELECTY-392 Principles of Electricity ...................................................... 5
(or) ELECTY-390 Principles of Electricity 1
and ELECTY-391 Principles of Electricity 2
ELECTY-314 Electrical Service Installation ‡ ...................................... 1
ELECTY-328 Electric Motor Control Wiring ‡ ..................................... 2
ELECTY-341 Electrical Code Fundamentals 2 ‡ ..................................... 1
ELECTY-382 Electrical Equipment Circuit Analysis ‡ ............................ 1
ELECTY-384 Electrical Design and Estimating ‡ ................................... 1
ELECTY-386 Solid State Devices ‡ ......................................................... 2
ELECTY-394 Electrical Apparatus ‡ ....................................................... 4
ENG-345 Communications 1 ................................................................. 1
SOCSCI-330 Applied Economics and Human Relations ...................... 1

TOTAL CREDITS: 28

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Electrician, Electrician’s Helper, Construction Electrician, Apprentice, Industrial Maintenance, Electrician Apprentice

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Milwaukee Area Technical College
School of TECHNOLOGY and APPLIED SCIENCES

Page 158
Electronic Engineering Technology

ASSOCIATE DEGREE  Program Code: 10-605-7  West Allis Campus

(Official WTCS Title: Electronic Systems Technician)
This Associate in Applied Science degree program prepares you for professional and supervisory positions in the electronics field. It includes opportunities to develop the skills for engineering support in high-tech electronic industry environments. Normal vision and good manual dexterity are important for success in the program.

If interested in pursuing an Electrical Engineering baccalaureate degree at the time of admission, select the Advanced 2+2 Option that includes specific electronics, higher-level mathematics and college transfer courses. Upon graduation and meeting specific admission requirements, this prepares you for entry into the Milwaukee School of Engineering to pursue a bachelor’s of science in Electrical Engineering. Graduates of the Job-Ready emphasis who later become interested in pursuing a baccalaureate degree may continue in a customized certificate program to complete the requirements for admission to an engineering four-year program.

Career Outlook
Electronic engineering technology is a fast-growing segment of the workforce. Employment includes assisting engineers, scientists and producers of electronic equipment and electronic systems. Opportunities also are in research and development, installation, sales and customer service.

Program Learning Outcomes
Employers expect graduates to:
• Apply the practical and theoretical foundations and skills of electronic engineering technology to solve related problems
• Apply critical thinking skills necessary to analyze, install, troubleshoot and maintain electronic systems and equipment
• Repair electronic circuits and systems using industry-accepted test equipment and results interpretation
• Apply a standard set of principles for continuous quality improvement on the job and throughout one’s career

Admission Requirements
• A high school diploma or GED
• One year of high school-level geometry and one year of high school-level algebra, or equivalent
• Course placement assessment of basic skills proficiency

Start Dates: August/January

For Information
West Allis Campus – 414-456-5500

TECHNICAL STUDIES

FOR BOTH JOB-READY AND MSOE TRANSFER (ADVANCED 2+2 OPTION)
The Advanced 2+2 Option is available directly to those entering the program calculus-ready.

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>(1) ELCTEC-110 DC and AC Electronics 1 ‡</td>
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<td>(1) ELCTEC-130 Digital Electronics ‡</td>
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<td>(2) ELCTEC-111 DC and AC Electronics 2 ‡</td>
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<td>(2) ELCTEC-120 Electronic Devices and Circuits ‡</td>
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<tr>
<td>(2) ELCTEC-140 Microprocessors ‡</td>
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<td>(3) ELCTEC-121 Advanced Electronic Devices and Circuits ‡</td>
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<td>(3) ELCTEC-154 Electronic Communications ‡</td>
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<td>(4) ELCTEC-141 Microcontrollers ‡</td>
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<td>(4) ELCTEC-158 Digital Communication Systems ‡</td>
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<td>(4) ELCTEC-195 Motors and Controls ‡</td>
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</table>

Choose one emphasis listed below:

JOB-READY EMPHASIS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) MATH-197 College Algebra and Trigonometry with Apps ‡</td>
<td>5</td>
</tr>
<tr>
<td>(or) MATH-230 College Algebra and Trigonometry ‡</td>
<td>3</td>
</tr>
<tr>
<td>(2) ELCTEC-131 Advanced Digital Electronics ‡</td>
<td>3</td>
</tr>
<tr>
<td>(3) ELCTEC-196 Programmable Controllers ‡</td>
<td>3</td>
</tr>
<tr>
<td>(4) ELCTEC-176 Serial Communications and Networks ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

MSOE TRANSFER EMPHASIS (ADVANCED 2+2 OPTION)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) MATH-231 Analytic Geometry and Calculus 1 ‡</td>
<td>5</td>
</tr>
<tr>
<td>(2) MATH-232 Analytic Geometry and Calculus 2 ‡</td>
<td>5</td>
</tr>
<tr>
<td>(3) ELCTEC-112 DC and AC Electronics 3 ‡</td>
<td>3</td>
</tr>
<tr>
<td>(4) ELCTEC-124 Electronic Circuit Analysis ‡</td>
<td>3</td>
</tr>
</tbody>
</table>

GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-195 Economics (Job-ready emphasis)</td>
<td>3</td>
</tr>
<tr>
<td>(or) ECON-201 or ECON-202 (MSOE emphasis)</td>
<td></td>
</tr>
<tr>
<td>ENG-151 Communication Skills 1 ‡ (Job-ready emphasis)</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENG-201 and any 200-series ENG or SPEECH course (Job-ready emphasis)</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENG-201 and ENG-208 (MSOE emphasis)</td>
<td></td>
</tr>
<tr>
<td>NATSCI-137 Comprehensive Technical Physics ‡ (Job-ready)</td>
<td>4</td>
</tr>
<tr>
<td>(or) NATSCI-221 College Physics 1 ‡ (MSOE emphasis)</td>
<td></td>
</tr>
<tr>
<td>PSYCH-199 Psychology of Human Relations (Job-ready)</td>
<td>3</td>
</tr>
<tr>
<td>(or) PSYCH-231 Introductory Psychology ‡ (MSOE emphasis)</td>
<td></td>
</tr>
<tr>
<td>SOCSCI-197 Contemporary American Society (Job-ready)</td>
<td>3</td>
</tr>
<tr>
<td>(or) SOCSCI-203 Introduction to Sociology (MSOE emphasis)</td>
<td></td>
</tr>
</tbody>
</table>

SUGGESTED ELECTIVES: FIVE CREDITS NEEDED ............................. 5

ELCTEC-112 DC and AC Electronics ‡ (Job-ready emphasis)
ELCTEC-124 Electronic Circuit Analysis ‡ (Job-ready emphasis)
MATH-233 Analytic Geometry and Calculus 3 ‡ (MSOE emphasis)

TOTAL CREDITS: 70

72 credits in the MSOE Advanced 2+2 transfer program
‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.

Possible Careers: Electronic Test Technician, Manufacturing Test Technician, Production Assistant or Supervisor, Research and Development Technician
Electronic Technology

ASSOCIATE DEGREE  Program Code: 10-605-1  Downtown Milwaukee Campus

(Official WTCS title: Electronics)

This Associate in Applied Science degree program prepares students for a variety of occupations in the electronics field. Emphasis is placed on electronic systems troubleshooting, integration of computer technologies, and field applications. Normal vision and good manual dexterity are important for success. When employment opportunities arise, and with the employer’s and instructor’s consent, the elective course ELCTEC-100 may be taken off campus for credit.

Coursework in automation relates to equipment, software and systems that use electronic controls to automate various manufacturing, production and alternative energy processes. PLCs (Programmable Logic Controllers) and PACs (Programmable Automation Controllers) provide the control for a large portion of the automated systems found in industry. Programming and integrating the sensors and actuators to these controllers provide the needed skills and experience to successfully build and troubleshoot the larger control systems. The sensors and actuators present another level of skills and experience needed to successfully build and repair the systems.

Career Outlook

Electronic technology is a rapidly changing field. New devices and equipment are constantly being incorporated into manufacturing, production and alternative energy facilities. These changes create great opportunities for individuals wanting to work with the equipment and systems, from devices to company-wide data acquisition programming. Skills acquired from this program provide a strong foundation to keep pace with the changing field.

Program Learning Outcomes

Employers expect graduates to:

• Apply the practical and theoretical foundations and skills of electronics technology to solve related problems
• Apply critical thinking skills necessary to analyze, install, troubleshoot and maintain electronic systems and equipment
• Integrate and repair electronic circuits and systems
• Program and modify electronic control software
• Write comprehensive technical reports and task analysis

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC

Admission Requirements

• A high school diploma or GED
• One year of high school-level geometry and one year of high school-level algebra, or equivalent
• Course placement assessment of basic skills proficiency

Related Programs

Biomedical Electronics Technology, Computer Electronics Technology, Electronic Engineering Technology

TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCTEC-110</td>
<td>DC and AC Electronics 1 ‡</td>
<td>4</td>
</tr>
<tr>
<td>ELCTEC-130</td>
<td>Digital Electronics ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-170</td>
<td>Computer Systems ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-111</td>
<td>DC and AC Electronics 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-120</td>
<td>Electronic Devices and Circuits ‡</td>
<td>4</td>
</tr>
<tr>
<td>ELCTEC-140</td>
<td>Microprocessors ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-186</td>
<td>Fabrication Techniques ‡</td>
<td>1</td>
</tr>
<tr>
<td>ELCTEC-154</td>
<td>Electronic Communications ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-173</td>
<td>Computing with C ‡</td>
<td>3</td>
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AUTOMATION EMPHASIS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ELCTEC-195</td>
<td>Motors and Controls ‡</td>
<td>4</td>
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<tr>
<td>ELCTEC-196</td>
<td>Programmable Controllers ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-192</td>
<td>Basic Industrial Hydraulics and Pneumatics ‡</td>
<td>2</td>
</tr>
<tr>
<td>ELCTEC-198</td>
<td>Advanced Programmable Controllers ‡</td>
<td>3</td>
</tr>
<tr>
<td>ELCTEC-199</td>
<td>Automated Systems ‡</td>
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GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENG-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENg-151</td>
<td>Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>ENg-152</td>
<td>Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>MATH-115</td>
<td>College Technical Mathematics 1 ‡</td>
<td>5</td>
</tr>
<tr>
<td>MATH-116</td>
<td>College Technical Mathematics 2 ‡</td>
<td>4</td>
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<tr>
<td>NATSCI-137</td>
<td>Comprehensive Technical Physics</td>
<td>4</td>
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<tr>
<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<tr>
<td>SOCSI-197</td>
<td>Contemporary American Society</td>
<td>3</td>
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<tr>
<td></td>
<td>(or) Any 200-series PSYCH course</td>
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<tr>
<td></td>
<td>(or) Any 200-series HIST or SOCSI course</td>
<td></td>
</tr>
</tbody>
</table>

SUGGESTED ELECTIVES: THREE CREDITS NEEDED .......................... 3

ELCTEC-100  Electronics Co-Op ‡
ELCTEC-121  Advanced Electronic Devices and Circuits ‡
ELCTEC-165  TV Broadcast Workshop 1 ‡
ELCTEC-166  TV Broadcast Workshop 2 ‡

TOTAL CREDITS: 70

‡ Prerequisite required.

Program curriculum requirements are subject to change.

($) = Semester order for full-time students.

Possible Careers: Automation and Controls Technician, Electronic Systems Technician, Robotics Technician
Program Learning Outcomes

Employers expect graduates to:
• Function as a member of the pre-hospital emergency medical care team
• Be able to perform patient assessments and communicate observations to other emergency medical personnel
• Possess knowledge and skills in methods designed to begin emergency medical treatment when necessary
• Have knowledge and skills associated with stabilization and transport of injured or ill patients
• Work under stress

Admission Requirements
• Age 17 or older (Must be 18 at time of National Registry Testing)
• Background check
• Students entering the program must have an official high school or GED/HSED transcript, and an ACT or Accuplacer test score above the program minimum

Prepare to enter the emergency services field, which involves working with other healthcare professionals to deliver critical, pre-hospital emergency medical care. This program also is designed to enhance existing skills of individuals working in the field. Successfully completing the program with a grade of C or higher prepares you to take the National Registry Examination, required for certification and licensure in Wisconsin. The program uses the state of Wisconsin curriculum, and students will also receive training in CPR using American Heart Association curriculum. Students must not have any disabilities that would prevent them from being able to perform an accurate and immediate assessment of a patient in a medical intervention. Students also must be able to physically perform the test modules of the National Registry Examination to gain certification.

Career Outlook

Employers include private ambulance services, hospitals, fire departments, industrial firms and security companies. After completion of this program and state certification, you may progress into the certifications of IV Technician and Paramedic.

Possible Careers: Private Ambulance Services, Hospitals with Emergency Rooms, Fire Departments, Industrial/Manufacturing Firms, Security Companies
**Emergency Medical Technician – Advanced**

**TECHNICAL DIPLOMA**  Program Code: 30-531-6  Mequon and Oak Creek campuses

(Official WTCS title: Advanced EMT)

The Emergency Medical Technician – Advanced coursework builds upon the skills acquired in the Emergency Medical Technician program. Students learn advanced patient assessment skills and technical skills such as IV access, fluid therapy and administration of dextrose and Narcan. Advanced Emergency Medical Technicians perform emergency patient care, basic life support, and limited advanced life support in the field, transporting injured and ill patients to hospital emergency rooms. This program meets Wisconsin licensure requirements.

Students must not have any disabilities that would prevent them from being able to perform an accurate and immediate assessment of a patient in a medical intervention. Students also must be able to physically perform the test modules of the National Registry Examination to gain certification.

**Career Outlook**

Career opportunities are growing steadily and exist in the private and public sectors, including hospitals, fire departments and providers of ambulance services. With additional education and/or work experience, students may find employment opportunities including emergency room technician, firefighter, paramedic or medical assistant. Completion of the program allows students to take state licensure exams.

**Program Learning Outcomes**

Employers expect graduates to:

- Function as a member of the pre-hospital emergency medical care team
- Be able to perform patient assessments and communicate observations to other emergency medical personnel
- Possess knowledge and skills in methods designed to begin emergency medical treatment when necessary
- Have knowledge and skills associated with stabilization and transport of injured or ill patients
- Work under stress

**Related Programs**

Criminal Justice – Law Enforcement, Emergency Medical Technician, Fire Protection Technician

**Admission Requirements**

- Age 18 or older
- State of Wisconsin Emergency Medical Technician License (current)
- American Heart Association CPR (current)
- Medical exam, including verification of immunizations and TB testing
- Criminal background check
- Documentation that the Essential Job Functions have been reviewed. This is in keeping with the federal Americans With Disabilities Act (ADA).

**COURSE**  

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS-311</td>
<td>Advanced Emergency Medical Technician ‡</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 4

‡ Prerequisite required.

Program curriculum requirements are subject to change.

180 hours total

Clinical hours consist of time in hospital settings or with sponsoring fire department/ambulance providers that use approved preceptors to oversee.

**Possible Careers:** Private Ambulance Services, Hospitals with Emergency Rooms, Fire Departments, Industrial/Manufacturing Firms, Security Companies
Fire Protection Technician

ASSOCIATE DEGREE  Program Code: 10-503-2  Oak Creek Campus

This Associate in Applied Science degree program prepares students for employment in the fire service and/or fire-related duties within private industry. The objectives of the program are twofold: to instruct qualified high school graduates who are seeking a career in the fire service, and to update firefighters and officers on changes within the fire service. Students will have the opportunity to obtain three Wisconsin fire certifications and a Wisconsin Emergency Medical Technician license. Students also are given the opportunity to practice oral interviewing techniques, develop a résumé and take a candidate physical agility test (CPAT), which is recognized as the minimum physical standard for entry onto most departments. Core abilities include the ability to work under stress, communicate effectively, collaborate with others, respect diversity, demonstrate responsibility, think critically, utilize technology, and have mechanical aptitude.

Career Outlook
Fire technology is becoming more complex, so well-trained and educated firefighters are in demand.

Program Learning Outcomes
- Identify and solve firefighting problems
- Apply tactics and strategies to emergency fire incidents
- Utilize personal protective equipment
- Demonstrate fire safety procedures
- Determine causes of fires
- Identify and respond to emergencies related to hazardous materials
- Demonstrate knowledge of arson investigation procedures
- Demonstrate ability to function as a member of a team
- Demonstrate physical fitness

Admission Requirements
- Age 17 or older
- Background check
- Medical exam
- Students entering the program must have an official high school or GED/HSED transcript, and an ACT or Accuplacer test score above the program minimum
- Course placement assessment of basic skills proficiency

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

### TECHNICAL STUDIES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>FIRE-191 Principles of Emergency Services</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-192 Principles of Emergency Services Safety and Survival</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-193 Fire Protection Systems</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-143 Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-142 Firefighting Principles</td>
<td>4</td>
</tr>
<tr>
<td>FIRE-153 Hazardous Materials Awareness and Operations</td>
<td>1</td>
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<tr>
<td>FIRE-195 Fire Behavior and Combustion</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-156 Strategies, Tactics and Incident Management ‡</td>
<td>4</td>
</tr>
<tr>
<td>EMS-192 Emergency Medical Technician Basic ‡</td>
<td>4</td>
</tr>
<tr>
<td>FIRE-154 Hazardous Materials Chemistry ‡</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-114 Employability Skills ‡</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-151 Fire Prevention ‡</td>
<td>4</td>
</tr>
<tr>
<td>FIRE-157 Fire Investigation ‡</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-116 Fire Department Management ‡</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-194 Fire Protection Hydraulics ‡</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-144 Advanced Firefighting Principles ‡</td>
<td>2</td>
</tr>
</tbody>
</table>

### GENERAL STUDIES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-195 Economics</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series ECON course</td>
<td></td>
</tr>
<tr>
<td>ENG-151 Communication Skills 1 ‡</td>
<td>3</td>
</tr>
<tr>
<td>(6) ENG-152 Communication Skills 2 ‡</td>
<td>3</td>
</tr>
<tr>
<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
<td></td>
</tr>
<tr>
<td>MATH-107 College Mathematics ‡</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series MATH course</td>
<td></td>
</tr>
<tr>
<td>NATSCI-177 General Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>PSYCH-199 Psychology of Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>(or) Any 200-series PSYCH course</td>
<td></td>
</tr>
<tr>
<td>SOCSCI-172 Introduction to Diversity Studies</td>
<td>3</td>
</tr>
<tr>
<td>(or) SOCSCI-217 Valuing Diversity</td>
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### SUGGESTED ELECTIVES: ONE CREDIT NEEDED

<table>
<thead>
<tr>
<th>Course</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>FIRE-104 Fire Internship ‡</td>
<td></td>
</tr>
<tr>
<td>FLANG-117 Conversational Spanish for Service Occupations</td>
<td></td>
</tr>
<tr>
<td>PHYED-210 An Active Approach to Wellness and Fitness</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CREDITS:** 70

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.

Note: Each student enrolled in the Fire Protection Technician degree program will be required to take classes for which a State of Wisconsin criminal and driving background check and specific immunization(s) will be required. Failure to successfully meet these requirements will preclude the student from being able to fulfill the requirements of the Fire Protection Technician associate degree.

Possible Careers: Firefighter, Industrial Fire Prevention, Industrial Safety
Individualized Technical Studies

ASSOCIATE DEGREE  Program Code: 10-825-1  All campuses

This Associate in Applied Science degree program is designed to meet specific educational needs of students, business and industry not currently served by other degree programs. The Individualized Technical Studies degree (ITSD) is a customized program for students who need to combine skills and knowledge from different disciplines to be productive in tomorrow's workforce.

This program is designed to meet the career needs of incumbent workers seeking to increase their skills and knowledge as they move toward a degree. The curriculum will be drawn from existing offerings at MATC. Note that at least 25% of the total program requirements must be earned at MATC.

Admission Requirements
- A high school diploma or GED
- Demonstration of basic skills proficiency through a course placement assessment
- Interview with a degree advisor to evaluate career goals and determine if the ITSD program is appropriate
- Develop a formal portfolio to document the ITSD process
- Establish degree requirements and a timeline for degree completion

TECHNICAL STUDIES

INDVTS-102  Career Assessment and Portfolio Development  .......... 2

OTHER COURSES:  37-39

GENERAL STUDIES

ECON-195  Economics ........................................................................... 3
(or) Any 200-series ECON course

ENG-151  Communication Skills 1 ‡ ............................................. 3
(§) ENG-152  Communication Skills 2 ‡ ............................................. 3
(or) ENG-201 and any 200-series ENG or SPEECH course

MATH-107  College Mathematics ‡ ................................................ 3
(or) MATH-113 Technical Mathematics 1A
(or) Any 200-series MATH course

NATSCI-167  Science of Technology ................................................. 3
(or) Any 200-series NATSCI course

PSYCH-199  Psychology of Human Relations ..................................... 3
(or) Any 200-series PSYCH course

SOCSCI-197  Contemporary American Society .................................... 3
(or) Any 200-series HIST or SOCSCI course

SUGGESTED ELECTIVES: THREE CREDITS NEEDED ................... 3

PHYED-210  An Active Approach to Wellness and Fitness

TOTAL CREDITS:  63-65

‡ Prerequisite required.
Program curriculum requirements are subject to change.
A minimum of 25% of total program requirements must be earned at MATC.

Start Dates: August/January

For Information
Downtown Milwaukee Campus – 414-297-MATC
Mequon Campus – 262-238-2200
Oak Creek Campus – 414-571-4500
West Allis Campus – 414-456-5500

Related Programs: Associate in Arts Degree, Associate in Science Degree
The primary emphasis of this Associate in Applied Science degree program is developing the knowledge to create appropriate design solutions. Coursework includes manual and CAD (computer-aided design) drawing, commercial and residential planning, design fundamentals and an overview of the design process. Students will be exposed to the interrelations of color, lighting and materials. Communication skills and presentation techniques assist students in obtaining entry-level employment in interior design. With an associate degree and four years of full-time work experience, graduates are eligible to take the NCIDQ exam and qualify for state licensing.

Career Outlook
Demand for interior designers is strongest in kitchen and bath design and remodeling, and in corporate and industrial facilities design. Graduates may also work in architectural firms, furniture dealerships, furniture showrooms and design studios.

Program Learning Outcomes
Employers expect graduates to:
• Develop design concepts
• Visualize a design solution in three dimensions
• Plan safe, efficient and functional spaces
• Select and specify appropriate color, material and furnishing selections
• Communicate effectively with clients, contractors and industry partners
• Make the appropriate color and finish selections
• Justify design solutions orally and graphically

Admission Requirements
• A high school diploma or GED
• Demonstration of basic skills proficiency through a course placement assessment
• Demonstration of proficiency in basic computer skills or completion of COMPSW-106

Related Program
Architectural Technology

TECHNICAL STUDIES
(1) INDSN-100 Introduction to Interior Design .................................. 3
(1) INDSN-102 Basic Architectural Drawing ................................... 3
(1) INDSN-104 Interior Elements of Building Construction .............. 3
(1) INDSN-106 Materials and Furniture Design ............................ 3
(2) INDSN-108 Residential Studio ‡ ............................................ 3
(2) INDSN-110 Advanced Architectural Drawing ‡ ...................... 3
(2) INDSN-112 Textiles: Science, Application and Design .............. 2
(2) INDSN-114 Color and Light ‡ ................................................. 3
(3) INDSN-116 Kitchen and Bath Design ‡ .................................. 3
(3) INDSN-118 Commercial Studio ‡ ......................................... 3
(3) INDSN-120 Professional Practice and Field Experience ‡ ........ 3
(3) INDSN-122 Styles of Furniture and Architecture ‡ ................ 3
(4) INDSN-124 Advanced Commercial Studio ‡ .......................... 3
(4) INDSN-126 Trends in Interior Design ‡ .................................. 3
(4) INDSN-128 Designer/Client Relationships .............................. 3
(4) INDSN-130 Portfolio Development and Application ‡ ............. 2

GENERAL STUDIES
ECON-195 Economics .................................................................... 3
(or) Any 200-series ECON course
ENG-151 Communication Skills 1 ‡ ............................................. 3
(&) ENG-152 Communication Skills 2 ‡ ........................................ 3
(or) ENG-201 and any 200-series ENG or SPEECH course
MATH-107 College Mathematics ‡ ................................................ 3
(or) Any 200-series MATH course
NATSCI-167 Science of Technology .................................................. 3
(or) Any 200-series NATSCI course
PSYCH-199 Psychology of Human Relations .................................. 3
(or) Any 200-series PSYCH course
SOCSCI-197 Contemporary American Society ................................ 3
(or) Any 200-series HIST or SOCSCI course

SUGGESTED ELECTIVES: THREE CREDITS NEEDED .................. 3
COMART-107 Digital Imaging – Adobe Photoshop
PHOTO-101 Digital Fundamental Photography

TOTAL CREDITS: 70

# Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

Start Dates: August/January
For Information
West Allis Campus – 414-456-5500

Possible Careers: Design Consultant, Interior Designer, Kitchen Designer, Lighting Designer, Manufacturer’s Representative, Residential Designer
To prepare for a range of careers in the horticulture/landscape industry, students learn about sustainable and environmental horticulture operations; maintaining healthy trees, shrubs and herbaceous plants; selecting and installing plant material; operating equipment; and developing and executing landscape plans. In this Associate in Applied Science degree program, classes are offered full-time days or part-time evenings; students choose one of three program tracks: Design, Landscape Construction, or Landscape Maintenance and Arboriculture. For hands-on learning, the Mequon Campus features a greenhouse and extensively landscaped grounds. MATC’s program is certified by the Professional Landcare Network (PLANET). Each year, students participate in PLANET Student Career Days and in Tree Care Industry Association Student Career Days, and MATC’s Hort Club is a very active student organization.

Career Outlook
Arborists, horticulturists, landscape designers and landscapers are in steady demand year-round. Typical career settings include landscape companies, garden centers, municipal parks and recreational properties. Possible careers also include grounds manager, garden center manager and landscape construction manager.

Program Learning Outcomes
Employers expect graduates to:
- Have a good technical background in horticultural plants and their selection and maintenance
- Conduct client interviews and site analysis
- Safely operate and maintain equipment
- Communicate effectively and work well with people
- Have a positive attitude toward the job

Admission Requirements
- A high school diploma or GED
- Demonstration of basic skills proficiency through a course placement assessment

Related Program
Environmental Health and Water Quality Technology

Start Dates: August/January

For Information
Mequon Campus – 262-238-2200

Program curriculum requirements are subject to change.

Possible Careers: Arborist, Horticulturist, Landscape Designer

TOTAL CREDITS: 70

# Prerequisite required.
( ) = Semester order for full-time students.
Program Learning Outcomes
Employers expect graduates to:
• Set up and operate single-spindle automatic screw machines
• Set up and operate multiple-spindle automatic screw machines
• Set up and operate a CNC Swiss turning center

Admission Requirements
• A high school diploma or GED
• Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

Career Outlook
Employers expect graduates to set up and operate CNC Swiss turning center and automatic screw machines safely, to read blueprints and to perform maintenance. These skills are in demand as manufacturers expand production.

To complete the work required for a one-year technical diploma in Machine Tool Operations, you may select this option or the Machine Tool Operations – CNC Machine Setup and Operation option.

This is a two-semester program covering the setup and operation of CNC Swiss turning center, single-spindle and multiple-spindle automatic screw machines. These machines perform manufacturing processes such as turning, drilling, threading and contouring. Core skills include a high mechanical aptitude, manual dexterity and mathematical skills. Credit may be given for work experience.

SIXTEEN-WEEK TERMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
<td>ENG-347</td>
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<td>MACHTL-360</td>
<td>Metrology</td>
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<tr>
<td>MACHTL-367</td>
<td>Machine Tool Technology</td>
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<td>MACHTL-384</td>
<td>Machine Trades Mathematics 1</td>
<td>1</td>
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<tr>
<td>MDRFT-385</td>
<td>Machine Blueprint Reading 1</td>
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<tr>
<td>MACHTL-347</td>
<td>Single Spindle Auto Screw Machine 1</td>
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<td>MACHTL-348</td>
<td>Single Spindle Auto Screw Machine 2</td>
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<td>MACHTL-361</td>
<td>Multiple Spindle Auto Screw Machine 1‡</td>
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<td>MACHTL-362</td>
<td>Multiple Spindle Auto Screw Machine 2‡</td>
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<tr>
<td>MACHTL-304</td>
<td>Introduction to CNC Programming ‡</td>
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<tr>
<td>MACHTL-385</td>
<td>Machine Trades Mathematics 2‡</td>
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<td>MDRFT-386</td>
<td>Machine Blueprint Reading 2‡</td>
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<tr>
<td>MACHTL-391</td>
<td>Quality Control ‡</td>
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<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
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<td>MACHTL-371</td>
<td>CNC Swiss Turning Center 1</td>
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<td>MACHTL-372</td>
<td>CNC Swiss Turning Center 2</td>
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<td>MACHTL-374</td>
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</table>

TOTAL CREDITS: 34

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Single-Spindle or Multiple-Spindle Screw Machine Setup and Operation, CNC Swiss Turning Center Setup and Operation
To complete the work required for a one-year technical diploma in Machine Tool Operations, you may select this option or the Machine Tool Operations – CNC Swiss Turning Center Setup and Operation option.

This two-semester program trains you in the setup and operation of the Computer Numerical Control (CNC) vertical machining center and the CNC turning center – the centerpiece of many manufacturing firms. You also will receive instruction in how to interpret the CNC programs used by these machines. Full-time, part-time and apprenticeship options are available. Credit may be given for work experience, allowing you to complete the program more quickly. For details about apprentice course requirements, contact the apprenticeship coordinator at 414-571-4743.

Career Outlook
CNC machine tool operators with up-to-date experience are in high demand locally. Key attributes include a high mechanical aptitude, manual dexterity and mathematical skill.

Program Learning Outcomes
Employers expect graduates to:
- Set up and operate manual engine lathe
- Set up and operate manual milling machine
- Set up and operate CNC turning machine
- Set up and operate CNC vertical machine
- Set up and operate surface grinders

Admission Requirements
- High school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Related Programs

SIXTEEN-WEEK TERMS Credits
ENG-347 Communications 2 ‡ ................................................................. 1
MACHTL-360 Metrology ........................................................................ 1
MACHTL-367 Machine Tool Technology ............................................. 1
MACHTL-384 Machine Trades Mathematics 1 ................................ 1
MDRAFT-385 Machine Blueprint Reading 1 ...................................... 1
MACHTL-300 Engine Lathe 1 ............................................................... 3
MACHTL-301 Engine Lathe 2 ............................................................... 3
MACHTL-309 Manual Vertical Milling Machine 1 .............................. 3
MACHTL-304 Introduction to CNC Programming ‡ .............................. 1
MACHTL-385 Machine Trades Mathematics 2 ‡ .............................. 1
MDRAFT-386 Machine Blueprint Reading 2 ‡ ...................................... 1
MACHTL-391 Quality Control ‡ .......................................................... 1
MACHTL-320 Introduction to CNC Turning Centers .......................... 4
MACHTL-322 Introduction to CNC Vertical Machining Centers ............ 4
MACHTL-325 Surface Grinding ........................................................... 4
SOCSCI-330 Applied Economics and Human Relations ...................... 1

TOTAL CREDITS: 34

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: CNC Setup and Operator – Turning and Vertical, Manual Lathe and Milling Machine Setup and Operator

Start Dates: August/January
For Information
Downtown Milwaukee Campus – 414-297-MATC

Page 168
**Program Learning Outcomes**

Graduates will be knowledgeable in these areas:
- Orthographic projection, including primary and secondary auxiliary views
- Use of a CAD system
- Drawing format and dimensioning
- Use of handbooks, catalogs and ANSI standards
- Mathematical applications, including algebra and trigonometry
- Manufacturing processes

**Admission Requirements**

- A high school diploma or GED
- Course placement assessment in basic skills proficiency

**Related Programs**

Architectural Technology, Civil Engineering, Mechanical Design Technology

**Career Outlook**

The employment outlook is favorable for mechanical drafters with current training in computer-aided design and drafting (CADD) systems. Positions typically available to program graduates include detail drafter, junior drafter and CAD operator. Manufacturing environments, contract engineers and engineering consulting firms employ mechanical drafters. These firms use CADD systems to create two- and three-dimensional orthographic and pictorial multiview drawings of mechanical engineering detail, assembly and tooling.

**Program Learning Outcomes**

Graduates will be knowledgeable in these areas:
- Orthographic projection, including primary and secondary auxiliary views
- Use of a CAD system
- Drawing format and dimensioning
- Use of handbooks, catalogs and ANSI standards
- Mathematical applications, including algebra and trigonometry
- Manufacturing processes

**Admission Requirements**

- A high school diploma or GED
- Course placement assessment in basic skills proficiency

**Related Programs**

Architectural Technology, Civil Engineering, Mechanical Design Technology

**Start Date:** August

**For Information**

Downtown Milwaukee Campus – 414-297-MATC

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**SIXTEEN-WEEK TERMS**

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<th>Course Title</th>
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<td>CIVIL-105</td>
<td>Computer Applications</td>
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<tr>
<td>MCDESg-162</td>
<td>Engineering Materials</td>
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<tr>
<td>MCDESg-102</td>
<td>Technical Drafting 1 ‡</td>
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<tr>
<td>MATH-113</td>
<td>College Technical Math 1A (Applied Algebra) ‡</td>
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<td>(or) MATH-114</td>
<td>College Technical Math 1B (Applied Geometry/Trigonometry) ‡</td>
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<td>(or) ENG-151</td>
<td>Communication Skills ‡</td>
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<tr>
<td>MCDESg-104</td>
<td>Technical Drafting 2 With CAD ‡</td>
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<td>MCDESg-114</td>
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<td>NATSCI-167</td>
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**TOTAL CREDITS:** 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Mechanical Design Technology

ASSOCIATE DEGREE Program Code: 10-606-1 Downtown Milwaukee Campus

You’ll be prepared for employment as a mechanical drafter/designer in a design engineering department when you complete this Associate in Applied Science degree program. Using a computer-aided design and drafting (CADD) system, students will produce orthographic and pictorial mechanical engineering detail, assembly and tooling drawings, and prepare three-dimensional models, assemblies and drawings. Important to your success are analytical skills and the ability to grasp spatial relationships. It is also helpful to be able to work well with your hands, possess good hand/eye coordination and have an interest in working with tools.

Career Outlook
The employment outlook is favorable for mechanical drafters/designers having current training involving CADD systems. Manufacturing environments, contract engineers and engineering consulting firms employ mechanical design technicians. Duties often involve applying learned and developed technical knowledge to solving design problems in the creation of a product.

Program Learning Outcomes
Employers expect graduates to:
• Prepare orthographic and pictorial mechanical engineering detail, assembly and tooling drawings, including design dimensioning and tolerancing, using a computer-aided design and drafting system
• Prepare three-dimensional (parametric, dimension-driven) models, assemblies and drawings
• Communicate mechanical engineering information using appropriate college-level technical language, both orally and in writing
• Apply analytical mathematics (algebra and trigonometry), and graphic knowledge and skills to the solution of mechanical engineering problems; e.g., statics, strength of materials, mechanisms and design of machine elements

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra
• Course placement assessment of basic skills proficiency

Related Programs
Architectural Technology, Civil Engineering, Mechanical and Computer Drafting

Start Date: August

For Information
Downtown Milwaukee Campus – 414-297-MATC

TECHNICAL STUDIES

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<th>Course Title</th>
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<td>CIVIL-102</td>
<td>Introduction to AutoCAD</td>
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<td>MCDENG-160</td>
<td>Statics ‡</td>
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<td>MCDENG-106</td>
<td>Advanced Engineering Graphics ‡</td>
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<td>MCDENG-118</td>
<td>Kinematics ‡</td>
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<td>MCDENG-130</td>
<td>Strength of Materials ‡</td>
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<td>MCDENG-163</td>
<td>Machining Processes ‡</td>
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<td>MCDENG-124</td>
<td>SolidWorks 2 ‡</td>
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<td>MCDENG-112</td>
<td>Tool Design ‡</td>
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<td>MCDENG-116</td>
<td>Design of Machine Elements ‡</td>
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<td>MCDENG-125</td>
<td>Design Problems ‡</td>
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<td>MCDENG-135</td>
<td>PTC Creo (Pro/E) 1 ‡</td>
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GENERAL STUDIES

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<td>ENG-152</td>
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<td>MATH-115</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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SUGGESTED ELECTIVES: TWO CREDITS NEEDED………….. 2

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<td>MCDENG-134</td>
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<tr>
<td>MCDENG-145</td>
<td>PTC Creo (Pro/E) 2</td>
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</table>

TOTAL CREDITS:   68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

Possible Careers: Design/Drafting, Design Engineer, Mechanical Designer, Mechanical Drafter
This two-semester program prepares students to manage and repair equipment, to maintain facilities, and to operate and control low- and high-pressure boilers and auxiliary systems in factories, plants and buildings. A high mechanical aptitude, manual dexterity and good people skills will contribute to your success in this field.

**Career Outlook**

Stationary engineers, boiler operators and power engineers start up, regulate and shut down equipment. They ensure that it operates safely, economically and within established limits by monitoring meters and computerized controls. They manually control equipment and when necessary, make adjustments. They also record relevant facts concerning operation and maintenance in an equipment log. On steam boilers they observe, control and record steam pressure, temperature, emissions and other data. They check machinery and routinely check safety devices, identifying and correcting problems that develop.

**Program Learning Outcomes**
Graduates will be able to:
- Define industry safety standards
- Explain operation of power engineering equipment
- Describe boiler operation effects on emission
- Describe water treatment fundamentals related to power engineering equipment
- Describe power engineering related to control fundamentals
- Identify firing methods for different fuel types
- Prepare to complete the NIULPE certification exam
- Apply natural science principles to power engineering
- Relate basic electricity principles to power engineering
- Relate maintenance and repair principles to power engineering
- Perform basic facility maintenance and operations

**Admission Requirements**
- High school diploma or GED
- Course placement assessment of basic skills proficiency

**Related Program**
Machine Tool Operations

**SIXTEEN-WEEK TERMS**

<table>
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<td>POWENG-336</td>
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<td>POWENG-330</td>
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<td>High-Pressure Boilers 2 ‡</td>
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<td>Plant Maintenance and HVAC Basics</td>
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<td>Instrumentation and Controls</td>
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<tr>
<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
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**TOTAL CREDITS:** 17

‡ Prerequisite required.
Program curriculum requirements are subject to change.

**Possible Careers:** Building Engineer, Facilities Maintenance Mechanic, Power Engineer
Preparatory Plumbing

TECHNICAL DIPLOMA Program Code: 30-427-1

MATC Education Center at Walker’s Square

This two-semester diploma program focuses on preparing you for an apprenticeship in plumbing. Aptitudes important for success include good mechanical comprehension, spatial visualization, reading and math skills, physical strength, and the ability to work with others. The program offers basic knowledge and skills similar to parts of the first year of an apprentice’s training. Consequently, as a Preparatory Plumbing program graduate applying for an apprenticeship, you will be able to demonstrate your commitment to the plumbing trade and be able to offer entry-level skills if selected for a plumbing apprenticeship. This program is also appropriate for those interested in a career in other piping trades such as sprinkler fitting, steamfitting or industrial pipefitting.

Career Outlook
State law requires that only properly licensed plumbers be permitted to install and repair plumbing systems, and these services are in demand. Licensed plumbers are skilled mechanics versed in the theory and practice of installing hot and cold water supplies, drainage, venting and plumbing appliances in accordance with the state plumbing code and local ordinances. After completing this program, you may apply for an apprenticeship with the Milwaukee Area Plumbing Joint Apprenticeship committee. Candidates for apprenticeship are selected by the committee; program graduates are given good consideration for placement in an apprenticeship, but placement is not guaranteed.

Program Learning Outcomes
- Identify various piping materials and fittings
- Effectively utilize hand tools and power tools related to the trade
- Calculate various piping offset dimensions
- Sketch and read simple plumbing systems drawings
- Follow directions related to the trade

Admission Requirements
- A high school diploma or GED
- Course placement assessment of basic skills proficiency
- Shop practice and drafting learned either in school or in an employment setting
- Ability to drive and possession of a valid driver’s license

SIXTEEN-WEEK TERMS Credits
- MATH-308 Math for Industrial Applications 1 ........................................... 2
- PLUMB-300 Plumbing Theory 1 .......................................................... 3
- PLUMB-301 Applied Drawing for Plumbers 1 ....................................... 2
- PLUMB-302 Plumbing and Piping Shop 1 ........................................... 3
- PLUMB-308 Plumbing and Pipe Joining Process 1 .................................. 2
- PLUMB-310 First Aid/Safety in Plumbing .......................................... 1
- PLUMB-312 Computer Application/Plumbing ..................................... 1
- ENG-341 Applied Communications .................................................... 2
- MCDES-120 Basic AutoCAD ‡ ......................................................... 1
- PLUMB-304 Plumbing Theory 2 ‡ ...................................................... 3
- PLUMB-305 Plumbing and Pipe Joining Process 2 ‡ ............................ 2
- PLUMB-306 Plumbing and Piping Shop 2 ‡ ....................................... 3
- PLUMB-309 Applied Drawing for Plumbers 2 ‡ .................................. 2

TOTAL CREDITS: 27

‡ Prerequisite required.
Program curriculum requirements are subject to change.
Preparatory Plumbing classes held at MATC Education Center at Walker’s Square, 816 West National Avenue, Milwaukee; see INFOline at matc.edu.

Start Date: August
For Information
414-297-MATC

Possible Careers: Licensed Plumber, Plumber, Plumbing Apprentice

Page 172
Quality Engineering Technology

ASSOCIATE DEGREE Program Code: 10-623-9 Oak Creek Campus

Students learn to systematically plan, evaluate and monitor the components of a product, service or process to ensure that criteria for quality are being met. In this Associate in Applied Science degree program, quality methods such as Lean and Six Sigma are emphasized to reduce waste, improve operations, and streamline business processes. During the course of the program, students may elect to take the ASQ examination for Six Sigma Green Belt certification. Graduates also may choose to pursue certifications as a Quality Improvement Associate, Quality Process Analyst, and Quality Technician, also offered through ASQ (American Society for Quality).

Career Outlook
With trends toward globalization and standardization across all facets of business, and the importance of international standards (ISO) more prevalent, the need has increased for well-trained quality personnel.

Program Learning Outcomes
Employers expect graduates to:
- Apply total quality control concepts: inspection methods, data collection and application of sampling plans, quality cost and quality audits
- Apply appropriate problem-solving methodologies, such as Lean, Six Sigma, 8D
- Apply analytical mathematics including statistical techniques
- Analyze cost components to conduct opportunity assessment, cost/benefit analysis and project selection
- Assure quality systems are working and take corrective action through continuous improvement
- Characterize quality systems currently used in industry

Admission Requirements
- A high school diploma or GED
- One year of high school-level algebra
- Demonstration of basic skills proficiency through a course placement assessment

Students should be proficient in using computer programs and the internet. Specific emphasis is placed on Microsoft Office applications including Word, Excel and PowerPoint. Students who are not proficient in these applications should take COMPSW-106 or CIVIL-105.

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

TOTAL CREDITS: 68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.

Possible Careers: Quality Analyst, Quality Assurance Technician, Continuous Improvement Specialist, Quality Manager, Quality Supervisor

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<td>(1) QETECH-112</td>
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<td>Engineering Specifications/Drawings 2 ‡ ....... 1</td>
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<td>(2) QETECH-124</td>
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<td>ENG-151</td>
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<td>(&amp;) ENG-152</td>
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<td>MATH-115</td>
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<td>MATH-116</td>
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<td>NATSCI-137</td>
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<td>PSYCH-199</td>
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<tr>
<td>SOCSCI-197</td>
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</tbody>
</table>

SUGGESTED ELECTIVES: THREE CREDITS NEEDED ............. 3

| MGTDEV-188  | Project Management |
| QETECH-152  | Six Sigma Black Belt Tools and Concepts ‡ |
| NATSCI-169  | Energy in Nature, Technology and Society |
| COMPSW-106  | Introduction to Microsoft Office |
| CIVIL-105   | Computer Applications |
| MCDESg-162  | Engineering Materials |

Suggested Electives: Three Credits Needed: 3

Note: Program curriculum requirements are subject to change.
( ) = Semester order for full-time students.

Milwaukee Area Technical College
School of TECHNOLOGY and APPLIED SCIENCES

Possible Careers: Quality Analyst, Quality Assurance Technician, Continuous Improvement Specialist, Quality Manager, Quality Supervisor
Learn how to service and install air conditioning, refrigeration and heating equipment. The curriculum includes air conditioning and refrigeration equipment for residential and commercial use. The operation, repair and installation of gas- and oil-fired heating units are also taught. Students should possess a high mechanical aptitude, manual dexterity, and good people skills. After completing this program, you may wish to consider pursuing an associate degree, or applying for an apprenticeship in steamfitting, refrigeration or environmental services.

Career Outlook
There is an ongoing need for refrigeration, air conditioning and heating technicians who have current training. Program graduates find employment in such entry-level positions as service people, steamfitter apprentices and sheet metal worker apprentices, and environmental service technicians.

Program Learning Outcomes
Employers expect graduates to:
• Read schematic drawings
• Understand operations of cooling systems
• Understand operations of heating systems
• Use refrigeration diagnostic equipment
• Diagnose and repair electrical problems

Admission Requirements
• Demonstration of proficiency in basic skills through a course placement assessment
A high school diploma or GED is recommended.

Related Programs
Air Conditioning and Refrigeration Technology,
Appliance Technician

Possible Careers: Service Apprentice, Service Person, Steamfitter Apprentice, Sheet Metal Worker Apprentice, Environmental Service Technician
Sustainable Facilities Operations

ASSOCIATE DEGREE
Program Code: 10-481-2
Center for Energy Conservation & Advanced Manufacturing (ECAM) at Oak Creek Campus

Attain the skills to efficiently and effectively manage the total facility. In this Associate in Applied Science degree program, emphasis is placed on cost-effective energy options, direct digital controls, sustainable operations management, energy management systems, maintenance management, commissioning, and project management. Monitoring, control, reporting and presenting sustainability performance are covered; also the supervision, management and training of building service employees. LEED certification, as well as renewable energy, are discussed in this program. Potential for success will be enhanced if you have some work experience and/or a strong interest in sustainability and facilities management. You should also possess conceptual abilities, and problem-solving, computer and organizational skills.

Career Outlook
Projected employment for the field of sustainable facilities operations and management is very strong, and “greening” facilities operations provides many career options.

Program Learning Outcomes
• Reduce energy use in facilities
• Perform energy audits
• Develop and program a sequence of operations for various building systems
• Train and develop internal building services staffs
• Register and implement a LEED project
• Commission projects and systems
• Operate/optimize a variety of complex building systems
• Develop operating and capital budgets
• Measure and verify systems performance
• Compose and evaluate building service contracts
• Demonstrate skills in basic business mathematics and communications
• Demonstrate energy and facilities management computer skills
• Develop computerized maintenance management and an asset management system
• Report and present data from performance measures
• Engage staff in a systematic continuous improvement program

Admission Requirements
• A high school diploma or GED
• Demonstration of basic skills proficiency through a course placement assessment

TECHNICAL STUDIES

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>1 SUSTN-100</td>
<td>Sustainable Facilities Operations</td>
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<td>1 SUSTN-105</td>
<td>The LEED Rating System</td>
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<td>1 NATSCI-169</td>
<td>Energy in Nature, Technology and Society</td>
<td>3</td>
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<td>2 SUSTN-104</td>
<td>Energy Auditing and Managing Energy Use</td>
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<td>2 RBUS-111</td>
<td>Business Communications ‡</td>
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<td>2 INDSGN-100</td>
<td>Introduction to Interior Design</td>
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<td>3 HVAC2-132</td>
<td>Architectural and Mechanical Fundamentals</td>
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<td>3 SUSTN-102</td>
<td>Reporting and Presenting Systems Performance</td>
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<td>Measurement and Verification</td>
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<td>4 SUSTN-101</td>
<td>Environmental Control Technician/</td>
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<td>Sustainable Energy Tech Practices</td>
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<td>4 SUSTN-103</td>
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<td>4 HVAC2-146</td>
<td>Digital Energy Management Systems ‡</td>
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GENERAL STUDIES

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<td>ENG-151</td>
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<td>(or) ENG-201 and any 200-series ENG or SPEECH course</td>
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<tr>
<td>MATH-113</td>
<td>College Technical Math 1A ‡</td>
<td>3</td>
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<tr>
<td>NATSCI-167</td>
<td>Science of Technology</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCE-197</td>
<td>Contemporary American Society</td>
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<td></td>
<td>(or) Any 200-series HIST or SOCSCE course</td>
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ELECTIVES: SIX CREDITS NEEDED ................................................. 6

TOTAL CREDITS: 63

# Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500

Possible Careers: Energy Technician, Facilities Manager, Facilities Sustainability Coordinator or Director, Maintenance Supervisor, Building Manager
MATC’s Technical Studies: Apprentice is an Associate in Applied Science degree program for students who have completed apprenticeships registered through the Wisconsin Bureau of Apprenticeship Standards. Advanced standing for this degree is based solely on your apprenticeship experience. Applicants must possess a Wisconsin Certificate of Apprenticeship. You may also be considered if you possess documentation of having served an apprenticeship recognized by the U.S. Department of Labor. With proper documentation, 32 selected credits will be waived.

Note that at least 25% of the total program requirements must be earned at MATC. Contact the apprenticeship counselor for details, 414-571-4743.

**Admission Requirements**
- A high school diploma or GED
- Demonstration of basic skills proficiency through a course placement assessment
- Minimum of 400 hours of related apprenticeship instruction in a WTCS college or other accredited institution

### Technical Studies: Apprentice

**ASSOCIATE DEGREE**  
**Program Code: 10-499-5**  
**All campuses**

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<td>Career Assessment and Portfolio Development</td>
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<td>OTHER COURSES</td>
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</table>
| MATC's Technical Studies: Apprentice is an Associate in Applied Science degree program for students who have completed apprenticeships registered through the Wisconsin Bureau of Apprenticeship Standards. Advanced standing for this degree is based solely on your apprenticeship experience. Applicants must possess a Wisconsin Certificate of Apprenticeship. You may also be considered if you possess documentation of having served an apprenticeship recognized by the U.S. Department of Labor. With proper documentation, 32 selected credits will be waived.

Note that at least 25% of the total program requirements must be earned at MATC. Contact the apprenticeship counselor for details, 414-571-4743.

**Admission Requirements**
- A high school diploma or GED
- Demonstration of basic skills proficiency through a course placement assessment
- Minimum of 400 hours of related apprenticeship instruction in a WTCS college or other accredited institution

### General Education Requirements

**ECON-195**  
Economics ................................................................. 3  
(or) Any 200-series ECON course

**ENG-151**  
Communication Skills 1 ‡ ........................................... 3

**ENG-152**  
Communication Skills 2 ‡ ........................................... 3  
(or) ENG-201 and any 200-series ENG or SPEECH course

**MATH-107**  
College Mathematics ‡ ............................................. 3  
(or) MATH-113 College Technical Mathematics 1A  
(or) Any 200-series MATH course

**NATSCI-167**  
Science of Technology ............................................ 3  
(or) Any 200-series NATSCI course

**PSYCH-199**  
Psychology of Human Relations .................................. 3  
(or) Any 200-series PSYCH course

**SOCSCI-197**  
Contemporary American Society .................................. 3  
(or) Any 200-series HIST or SOCSCI course

**TOTAL CREDITS: 66**

‡ Prerequisite required.

Program curriculum requirements are subject to change.

A minimum of 25% of total program requirements must be earned at MATC.

### Start Dates: August/January

For Information  
Downtown Milwaukee Campus – 414-297-MATC  
Mequon Campus – 262-238-2200  
Oak Creek Campus – 414-571-4500  
West Allis Campus – 414-456-5500

Related Programs: Individualized Technical Studies, Associate in Arts Degree, Associate in Science Degree
After graduating from this four-semester, full-time, day program, you will be prepared for employment in the following career areas: mold making, stamping die making, jig and fixture building, tool-room machinist and precision machining. Coursework in the second year includes options for hands-on practice in stamping die and mold making, special die making or special mold making. Skills that will contribute to your success in the program include manual dexterity, eye-hand coordination, the ability to work independently and pride in craftsmanship.

Career Outlook
There is an ongoing need for highly skilled metalworkers. Tool and die makers, tool room machinists and mold makers are in high demand. MATC has an excellent placement record for its tool and die graduates.

Program Learning Outcomes
Employers expect graduates to:
• Use basic tool room machines to work metal to close tolerances
• Correctly and precisely measure your work
• Interpret engineering drawings
• Perform mathematical computations typical of tool room applications
• Demonstrate basic knowledge of computer numerical control programming used in tool and die making

Admission Requirements
• Demonstration of proficiency in basic skills through a course placement assessment
A high school diploma or GED is recommended.

Related Programs
Computer Numerical Control Machine Operator/Programmer, Machine Tool Operations

SIXTEEN-WEEK TERMS

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<th>Course Code</th>
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<td>MACHTL-300</td>
<td>Engine Lathe 1</td>
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<td>MACHTL-301</td>
<td>Engine Lathe 2 ‡</td>
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<td>MACHTL-309</td>
<td>Manual Vertical Milling Machining 1</td>
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<td>Manual Vertical Milling Machining 2 ‡</td>
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<td>MACHTL-360</td>
<td>Metrology</td>
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<td>MACHTL-367</td>
<td>Machine Tool Technology</td>
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<td>MACHTL-384</td>
<td>Machine Trades Mathematics 1</td>
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<td>MDRAFT-385</td>
<td>Machine Blueprint Reading 1</td>
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<td>MACHTL-304</td>
<td>Introduction to CNC Programming ‡</td>
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<td>MACHTL-320</td>
<td>Introduction to CNC Turning Centers ‡</td>
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<td>MACHTL-322</td>
<td>Introduction to CNC Vertical Machining Centers ‡</td>
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<td>MACHTL-325</td>
<td>Surface Grinding ‡</td>
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<td>MACHTL-391</td>
<td>Quality Control ‡</td>
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<td>SOCSCI-330</td>
<td>Applied Economics and Human Relations</td>
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<td>MACHTL-386</td>
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<td>TDMKG-366</td>
<td>CNC Programming 2 ‡</td>
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<tr>
<td>MTLGY-301</td>
<td>Basic Heat Treatment of Metals</td>
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<td>TDMKG-360</td>
<td>Basic Die Making Technology</td>
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<td>TDMKG-371</td>
<td>Stamping Die Making 1</td>
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<td>TDMKG-372</td>
<td>Stamping Die Making 2</td>
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<td>TDMKG-373</td>
<td>Stamping Die Making 3</td>
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<td>MACHTL-387</td>
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<td>TDMKG-361</td>
<td>Advanced Die Making Technology ‡</td>
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<td>TDMKG-367</td>
<td>Basic CAD/CAM ‡</td>
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<td>Cavity Die Technology</td>
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<td>TDMKG-381</td>
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<td>TDMKG-382</td>
<td>Moldmaking 2</td>
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</tr>
<tr>
<td>TDMKG-383</td>
<td>Moldmaking 3</td>
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</tbody>
</table>

TOTAL CREDITS: 66

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Dates: August/January

For Information
Oak Creek Campus – 414-571-4500
Program Learning Outcomes
Employers expect graduates to:
• Drive a commercial vehicle safely
• Demonstrate knowledge of U.S. laws and regulations pertaining to the operation of a commercial vehicle
• Maintain and complete records properly
• Demonstrate the ability to plan trips and routes including managing cargo
• Inspect the vehicle to ensure safe operation
• Communicate effectively with peers, customers and supervisors
• Obtain a Commercial Driver’s License

Admission Requirements
• High school diploma or GED
• Age 18 years or older
• Valid driver’s license and acceptable driving record
• Department of Transportation medical exam and drug test

Related Programs
Automotive Maintenance Technician
Diesel and Powertrain Servicing

Possible Careers: Local Truck Driver, Over-the-Road Truck Driver, Owner/Operator of Trucking Business
This two-semester program prepares you to perform production, maintenance and repair welding for manufacturing and construction. Learn about blueprints, equipment maintenance and the various welding processes and settings. Ability to follow instructions, to visualize finished products based on blueprints, and to work independently are keys to success. Good eyesight and mechanical skills also are important. Graduates can receive advanced standing in MATC's Welding Technology associate degree program.

Career Outlook
Demand is very high for welders with up-to-date skills; new processes have created many job opportunities for welders with these abilities. Continued education can lead to careers in business ownership, quality assurance, engineering, sales, or education and training.

Program Learning Outcomes
Employers expect graduates to:
- Practice industry safety standards
- Set up and operate all welding and related equipment
- Troubleshoot and maintain equipment
- Utilize math and blueprint-reading skills
- Follow instructions and work with minimal supervision
- Communicate effectively
- Abide by daily work routine and regulations, and work cooperatively with co-workers
- Have pride in workmanship
- Have a good work ethic and good attendance

Admission Requirements
- A high school diploma or GED
- Demonstration of proficiency in basic skills through a course placement assessment

Related Program
Welding Technology

SIXTEEN-WEEK TERMS Credits
WELD-313 Shielded Metal Arc Welding ................................................ 5
WELD-314 Gas Tungsten Arc Welding .................................................. 5
WELD-351 Shielded Metal Arc Welding Processes ................................ 1
WELD-350 GTAW Processes .................................................................. 1
WELD-360 Blueprint Reading for Welders ............................................ 2
WELD-380 Welding Trades Mathematics ............................................. 1
WELD-315 Gas Metal Arc Welding Practices ...................................... 5
WELD-316 Layout and Setup Practices .................................................. 5
WELD-352 Gas-Shielded Arc Welding Processes ................................... 1
WELD-354 Layout and Print Reading Practices ..................................... 2
SOCSCI-330 Applied Economics and Human Relations .................... 1
ENG-347 Communication Skills 2 ..................................................... 1

TOTAL CREDITS: 30

‡ Prerequisite required.
Program curriculum requirements are subject to change.

Possible Careers: Quality Assurance, Robotics, Welding
Welding Technology

ASSOCIATE DEGREE  Program Code: 10-621-1  West Allis Campus

(Official WTCS title: Industrial Welding Technician)
This Associate in Applied Science degree program combines practical, theoretical and technical training in welding fabrication. Manual, semiautomatic and automatic processes using oxy fuel and arc processes are covered. Advanced courses deal with application of welding codes to develop the expertise needed to become a Certified Associate Welding Inspector or Certified Welding Inspector. Automation courses allow hands-on experience in setting up, programming, operating and troubleshooting computer-controlled cutting equipment and sensory-equipped welding robots.

This program is also offered in the evening to accommodate full-time day employment. The ability to follow instructions, visualize finished products based on prints, and work independently are key. Good eyesight and mechanical skills are important. Graduates of the program usually pass the AWS Certified Welding Inspector exam on their first attempt.

Career Outlook
Program graduates typically find employment as welding technicians, robotic welding technicians, quality assurance inspectors, technical sales reps and weld test conductors.

Program Learning Outcomes
Employers expect graduates to:
• Weld industrial alloys with arc processes
• Interpret and apply codes and specifications
• Interpret conventional and CAD-generated prints
• Inspect and test welders and welding procedures
• Set up, program, operate and troubleshoot automated equipment

Admission Requirements
• A high school diploma or GED
• One year of high school-level algebra
• Demonstration of basic skills proficiency through a course placement assessment

Related Program
Welding

Start Dates: August/January

For Information
West Allis Campus – 414-456-5500

TECHNICAL STUDIES

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<tr>
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<td>Welding Theory 1</td>
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<td>WELDTC-107</td>
<td>Fabrication Graphics</td>
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<td>WELDTC-111</td>
<td>Welding Practice 1</td>
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<td>WELDTC-181</td>
<td>Welding Technology Orientation</td>
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<td>WELDTC-102</td>
<td>Welding Theory 2</td>
<td>3</td>
</tr>
<tr>
<td>WELDTC-105</td>
<td>Weldability of Materials ‡</td>
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<td>WELDTC-112</td>
<td>Welding Practice 2 ‡</td>
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<td>MTRLS-102</td>
<td>Material Testing</td>
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<td>WELDTC-113</td>
<td>Welding Techniques 1 ‡</td>
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<td>WELDTC-140</td>
<td>Manufacturing Applications for Robots</td>
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<td>WELDTC-114</td>
<td>Welding Techniques 2 ‡</td>
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<td>Automated Welding Processes ‡</td>
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GENERAL STUDIES

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<th>Course Code</th>
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<td>Communication Skills 1 ‡</td>
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<td>Comprehensive Technical Physics</td>
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<td>PSYCH-199</td>
<td>Psychology of Human Relations</td>
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<td>SOCSCI-197</td>
<td>Contemporary American Society</td>
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SUGGESTED ELECTIVES: THREE CREDITS NEEDED

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<tr>
<td>MATRLS-151</td>
<td>Metallurgy and Material Science</td>
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TOTAL CREDITS: 68

‡ Prerequisite required.
Program curriculum requirements are subject to change.
() = Semester order for full-time students.

Possible Careers: Quality Assurance Inspector, Robotic Welding Technician, Welding Technician, Weld Test Conductor

MILWAUKEE AREA Technical College
School of TECHNOLOGY and APPLIED SCIENCES
3D Solid Modeling  
Downtown Milwaukee Campus  
This advanced technical certificate provides Mechanical Design Technology associate degree students with an opportunity to gain training and skills beyond the technician design level. It also provides those already in the workplace with a mechanism for updating their skills. The technology in the industry is changing rapidly, requiring workers to continue their education if they wish to continue in key positions.

COURSES  CREDITS  
MCDES-114 SolidWorks 1 ‡ ...........................................2  
MCDES-131 SolidWorks Assemblies ‡ .........................2  
MCDES-132 SolidWorks Orthographics ‡ ...............2  
MCDES-133 Inventor 1 ‡ ........................................2  
MCDES-134 Inventor 2 ‡ ......................................2  
MCDES-135 PTC Creo (Pro/E) 1 ‡ .........................2  

TOTAL CREDITS: 12

Arboriculture  
Mequon Campus  
The courses in this certificate provide skills and knowledge necessary to be successful in the tree care profession. Students will gain hands-on training in tree climbing, pruning, tree removal, cable and bracing, tree care equipment, planting, tree and shrub identification, and plant health care. Students work with small and large trees, and safe work practices are emphasized. These courses prepare the student to obtain a Certified Arborist designation through the International Society of Arboriculture.

COURSES  CREDITS  
HORT-127 Arboriculture I (Introduction to Tree Care) ..................3  
HORT-128 Arboriculture II (Climbing and Pruning) ..................3  
HORT-129 Arboriculture III (Rigging and Removal) ..................3  
HORT-114 Woody Ornamental Plants ..................3  
HORT-113 Ornamental Plant Health Care ..................3  
HORT-171 Exterior Plant Pests ..................2  

TOTAL CREDITS: 17

Basic Electronics  
(Core Curriculum)  
Downtown Milwaukee Campus  
This 12-credit certificate is part of the Electronic Technology department. The four courses include instruction in DC and AC electronics, digital electronics and fabrication techniques. The coursework includes hands-on lab work and projects in which theories of the topics studied are applied.

COURSES  CREDITS  
ELCTEC-110 DC and AC Electronics 1 – Interactive ‡ ..................4  
ELCTEC-120 Electronic Devices and Circuits – Interactive ‡ ..........4  
ELCTEC-130 Digital Electronics – Interactive ‡ ..................3  
ELCTEC-186 Fabrication Techniques – Interactive ‡ ..................1  

TOTAL CREDITS: 12

Basic Electronics  
(Computer Multimedia Lab)  
Downtown Milwaukee Campus  
This certificate is part of the Electronic Technology department. The program requires 13 credits of interactive courses in MATC’s computer multimedia lab. Students will learn about DC and AC electronics, digital electronics, electronic devices and circuits, and microprocessors.

COURSES  CREDITS  
ELCTEC-115 DC and AC Electronics 1 – Interactive ‡ ..................4  
ELCTEC-117 Digital Electronics – Interactive ‡ ..................3  
ELCTEC-118 Electronic Devices and Circuits – Interactive ‡ ..............4  
ELCTEC-119 Introduction to Microprocessors – Interactive ‡ ..................2  

TOTAL CREDITS: 13

Electrical Construction  
Downtown Milwaukee Campus  
Enroll in this specialized six-course certificate program to gain the skills to work in residential electrical construction. Basic electrical wiring, code fundamentals and other courses provide skills for working with wires, cables and home blueprints. All credits earned apply toward MATC’s Electricity technical diploma program, providing a good start to a career with strong opportunities.

COURSES  CREDITS  
ELECTY-308 Basic Skills for Electrical Wiring ‡ ..................2  
ELECTY-310 Cable Wiring ‡ .......................................2  
ELECTY-312 Electrical Raceway Installation ‡ ..................2  
ELECTY-340 Electrical Code Fundamentals 1 ‡ ..................2  
ELECTY-378 Construction Blueprint Reading ‡ ..................1  
ELECTY-390 Principles of Electricity 1 ..................3  

TOTAL CREDITS: 12

Energy Engineering Technology  
Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus  
This program prepares students to understand energy measures and conversions, and their use in the sustainability of facilities. Topics include commission systems for new construction, and re-commission and retro-commission of existing buildings. The material covered will benefit students who are or want to become an energy manager, energy auditor, commissioning agent, LEED accredited professional and/or measurement and verification specialist.

COURSES  CREDITS  
SUSTN-101 Environmental Controls Technician ..........................3  
SUSTN-103 Commissioning Process: Sustainability and Energy Efficiency ‡ ..................3  
SUSTN-104 Energy Auditing and Managing Energy Use ‡ ..................3  
SUSTN-106 Measurement and Verification ‡ ..................3  
SUSTN-107 Environmental Controls Technician ..........................3  

TOTAL CREDITS: 12

For more information: matc.edu or 414-297-MATC. Page 181
Energy Modeling
Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus
Energy modeling is the practice of using computer-based programs to model the energy performance of an entire building or the systems within a building. This certificate program explores the use of eQuest energy modeling software wizards, which assist with understanding a building's use of energy in interconnecting ways. This is an accelerated eight-week program that moves at a fast pace.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>SUSTN-108</td>
<td>Energy Modeling with eQUEST</td>
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<td>TOTAL CREDITS:</td>
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</table>

Greenhouse Plant Production
Mequon Campus
Learn the science behind the horticulture to prepare for employment with firms having greenhouse operations. The course Ornamental Plant Health Care (HORT-113) prepares students for state certification in pest control. This course also includes work in many commercial pest-control situations. Courses are offered at the Mequon Campus, which features a large greenhouse and extensively landscaped grounds for hands-on learning.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>HORT-134</td>
<td>Greenhouse Production – Fall Crops</td>
</tr>
<tr>
<td>HORT-152</td>
<td>Greenhouse Production – Spring Crops</td>
</tr>
<tr>
<td>HORT-159</td>
<td>Survey of Herbaceous Plants</td>
</tr>
<tr>
<td>HORT-113</td>
<td>Ornamental Plant Health Care</td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
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</table>

Industrial Electronics and Controls
Downtown Milwaukee Campus
The Industrial Electronics and Controls certificate is part of the Electronic Technology department. This 13-credit program covers digital electronics, microprocessors, DC and AC electronics and programmable controllers. Students perform laboratory experiments and prepare technical reports, and troubleshooting practices are emphasized in the coursework.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>ELCTEC-110</td>
<td>DC and AC Electronics 1 ‡</td>
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<tr>
<td>ELCTEC-130</td>
<td>Digital Electronics ‡</td>
</tr>
<tr>
<td>ELCTEC-140</td>
<td>Microprocessors ‡</td>
</tr>
<tr>
<td>ELCTEC-196</td>
<td>Programmable Controllers ‡</td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
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</table>

Land Surveying
Downtown Milwaukee Campus
In conjunction with an associate degree in Civil Engineering Technology, this advanced certificate meets the land surveyor registration educational requirements as defined in Chapter A-E 7 of the Wisconsin Administrative Code. The MATC Civil Engineering Technology program and its land surveying courses are approved by the Land Surveyor Section of the Wisconsin Examining Board of Architects, Professional Engineers, Designers and Land Surveyors.

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>CIVIL-155</td>
<td>Surveying 1</td>
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<tr>
<td>CIVIL-156</td>
<td>Surveying 2 ‡</td>
</tr>
<tr>
<td>CIVIL-157</td>
<td>Route and Highway Surveying ‡</td>
</tr>
<tr>
<td>CIVIL-158</td>
<td>Land Surveying ‡</td>
</tr>
<tr>
<td>CIVIL-160</td>
<td>Legal Elements of Land Surveying ‡</td>
</tr>
<tr>
<td>CIVIL-161</td>
<td>Boundary Location ‡</td>
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<td>TOTAL CREDITS:</td>
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</table>

Landscape Design Technology – CAD
Mequon Campus
Gain skills in drawing landscape plans with computer-aided design (CAD) programs. This quick-to-complete certificate is designed for those working in the industry and looking to advance; it prepares students for a portion of the Association of Professional Landscape Designers (APLD) Certification, so you can enhance your competitive edge.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>HORT-122</td>
<td>Landscape Design I</td>
</tr>
<tr>
<td>HORT-140</td>
<td>CAD Landscape Design 1</td>
</tr>
<tr>
<td>HORT-141</td>
<td>CAD Landscape Design 2</td>
</tr>
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<td>TOTAL CREDITS:</td>
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</table>

Law Enforcement
Oak Creek Campus
This program is open to MATC Criminal Justice – Law Enforcement program students only. Completion of academic and tactical curriculum coupled with scenario-based assessment will allow you to become eligible for certification through the Wisconsin Law Enforcement Standards Board. Students must complete all mandatory curriculum in POLICE courses 900-908, all of the Unified Tactics in the POLICE 170-176 courses, and a scenario-based assessment, as well as having no less than 60 total college credits, before obtaining certifiable status as a Wisconsin law enforcement officer.

Scenario-based assessments are usually held each semester after the tactical training is completed; there is a fee charged to participate.

Additional qualifications include:
- Student has completed all nine of the 900-908 courses with a grade of C (2.0 GPA) or higher. These courses must be completed in two years, as the tactical portions take one year to complete and the state will not extend the total training program beyond three years.
- Student has earned at least 45 college credits prior to application for entry. This must include the 27 credits earned in POLICE courses 900-908. The remaining 18 credits must be transcriptable college credit, not diploma or certificate credits.
- Possess a valid Wisconsin driver’s license.
- Be legally able to handle or possess a firearm.
- Complete a medical exam that allows participation in vigorous physical activity.
- Undergo a criminal history/background check.
- Successfully pass a personal interview.

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>POLICE-170</td>
<td>OMVWI/Standard Field Sobriety Test ‡</td>
</tr>
<tr>
<td>POLICE-171</td>
<td>Professional Communications ‡</td>
</tr>
<tr>
<td>(or) POLICE 903</td>
<td>Professional Communications</td>
</tr>
<tr>
<td>POLICE-172</td>
<td>EMS-LE/Hazardous Materials ‡</td>
</tr>
<tr>
<td>POLICE-173</td>
<td>Emergency Vehicle Operation ‡</td>
</tr>
<tr>
<td>POLICE-174</td>
<td>Care and Use of Firearms ‡</td>
</tr>
<tr>
<td>POLICE-175</td>
<td>Defense and Arrest Tactics ‡</td>
</tr>
<tr>
<td>POLICE-176</td>
<td>Vehicle Contacts ‡</td>
</tr>
<tr>
<td>TOTAL CREDITS:</td>
<td>18</td>
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</table>

Additional qualifications include:
- Prerequisite required. Program curriculum requirements are subject to change.
All credits in a certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.

For more information: matc.edu or 414-297-MATC.
Lean
Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus

<table>
<thead>
<tr>
<th>COURSE</th>
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<td>TOTAL CREDITS</td>
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</table>

Metallurgical Technician
Downtown Milwaukee Campus
Working to ensure the integrity of metals is a key element in the manufacturing process. Students will gain essential skills in this important function of industry through coursework that centers on material testing, statistical process control, principles of metallurgy and more. The labs and lectures offered through this certificate program provide a solid background in metallurgy that employers seek.

<table>
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<td>MATRLS-102</td>
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<td>MATRLS-108</td>
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<tr>
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<td>MATRLS-151</td>
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</table>

Native Landscape Plants
Mequon Campus
With the current emphasis on sustainability, the ability to offer professional-level knowledge about native landscapes is a career builder for those interested in horticulture and landscaping. Students will learn how to restore, preserve or create a green space of plants, shrubs and trees native to this region. Classes start at MATC’s Mequon Campus and continue as on-site field study in a variety of native plant communities and restorations in southeastern Wisconsin.

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>HORT-163</td>
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<td>HORT-193</td>
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<td>TOTAL CREDITS</td>
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</table>

Plant Health Care
Mequon Campus
Students who complete this certificate will have basic knowledge of proper plant growth, integrated pest management and soil conditions. Emphasis is placed on professional care techniques for landscapers and includes a course in state-certified pesticide applications. Classes are held at MATC’s Mequon Campus, which offers outstanding landscaped grounds, a nursery and a large greenhouse for hands-on learning.

<table>
<thead>
<tr>
<th>COURSE</th>
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<td>HORT-112</td>
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<td>HORT-113</td>
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<td>HORT-125</td>
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<tr>
<td>HORT-114</td>
<td>3</td>
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<tr>
<td>HORT-171</td>
<td>2</td>
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<td>TOTAL CREDITS</td>
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</table>

Six Sigma Green Belt
Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus
Six Sigma is applied in many industries including healthcare, manufacturing, business operations and service sectors. This certificate consists of three courses. The first two cover the Green Belt body of knowledge in the Six Sigma problem-solving methodology. The third course is the implementation of a Six Sigma project.

Special Admission Requirements:
MATH-260 or BADM-104, or previous statistics coursework is required to enroll.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>QETECH-132</td>
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<tr>
<td>QETECH-134</td>
<td>3</td>
</tr>
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<td>QETECH-142</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL CREDITS</td>
<td>9</td>
</tr>
</tbody>
</table>

Sustainable Facilities Operations
Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus
This certificate is designed to prepare students to efficiently and effectively manage the total facility. Emphasis is placed on cost-effective energy options, direct digital controls, energy management systems, sustainable operations, maintenance management, and the training of building service employees. LEED certification and renewable energy are covered in depth.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>SUSTN-100</td>
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<tr>
<td>SUSTN-105</td>
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<td>SUSTN-102</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL CREDITS</td>
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</tr>
</tbody>
</table>

# Prerequisite required. Program curriculum requirements are subject to change.

All credits in a certificate program must be earned at MATC with a 2.0 GPA or higher. The student must initiate the request for the certificate upon completion of its requirements. Certificate programs are not eligible for financial aid.

For more information: matc.edu or 414-297-MATC. Page 183
Each MATC course is identified by a grouping of two to six letters and a set of three numbers.

For example, in the course number **SOCSCI-149**, the letters **SOCSCI** form the alphabetical code that identifies the subject in which the course is taught. The sequence of courses in this Course Description section follows this alphabetic code.

Below you will find a list of the subjects and their alphabetic codes, along with the department numbers in parentheses.

The three numbers **149** identify the type of course – that is, the type of program in which the course is found. In this example, the course is an associate degree course. See the table on the right for the numerical range for each type of program.

### Range

| 100-199 | Associate Degree (A.A.S.) |
| 200-299 | Liberal Arts (A.A., A.S.) |
| 300-399 | Diploma |
| 400-499 | Continuing Education Credit |
| 700-799 | Adult High School |
| 700-799 | Basic Skills, ESL |

### Type of Credit/Hours Per Credit

- **College credit:** 16 or more 55-minute periods of instruction, depending upon instructional methodology: lecture, lab, clinical, individualized instruction, on-the-job experience, distance learning (online, televised).
- **Diploma credit:** 32 or more 55-minute periods of instruction, depending upon instructional methodology: related (lecture as related to practical applications), shop (practical applications), clinical, individualized instruction, on-the-job experience, distance learning (online, televised).
- **CEC credit:** 36 55-minute periods of instruction. Note: CEC credit does not appear on MATC transcripts and is sometimes referred to as “noncredit.”
- **High school credit:** 4,500 minutes of instruction (75 hours). See the School of Pre-College Education section for Adult High School course descriptions.
- **Noncredit/Developmental:** up to 36 55-minute periods of instruction. See the School of Pre-College Education section for Basic Skills and ESL course descriptions.

### Table

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Subject</th>
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<tbody>
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<td>ACCTG</td>
<td>Accounting (101)</td>
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<td>ANIM</td>
<td>Animation (207)</td>
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<td>ANTECH</td>
<td>Anesthesia Technology (541)</td>
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<tr>
<td>AODA</td>
<td>AODA Services (550)</td>
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<td>APPSVC</td>
<td>Appliance Servicing (445)</td>
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<td>ARCH</td>
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<td>ART</td>
<td>Art (815)</td>
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<td>AUDIO</td>
<td>Audio Production (701)</td>
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<td>AUTO1</td>
<td>Auto Maintenance Technician (404)</td>
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<td>Automotive Technology (602)</td>
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<td>AUTOBY</td>
<td>Auto Collision Repair/Refinish (405)</td>
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<td>AVITEC</td>
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<td>BADM</td>
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<td>BAKING</td>
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<td>BARCOS</td>
<td>Barber/Cosmetology (502)</td>
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<td>CABMIL</td>
<td>Cabinetmaking and Millwork (409)</td>
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<td>CARP</td>
<td>Carpentry (410)</td>
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<td>COMART</td>
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<td>COMPSPW</td>
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<td>CULMGT</td>
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<td>CVTECH</td>
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ACCTG – ANIM

DEGREE/DIPLOMA COURSE DESCRIPTIONS

ACCOUNTING

ACCTG-102 Credits: 3
Basic Office Accounting
The basic structure of accounting is presented. Emphasis is placed on the recording, classifying and summarizing phases. Particular attention is given to procedures related to administrative assistant work, such as petty cash, payroll, bank reconciliation and accounting software.

ACCTG-110 Credits: 3
Financial Accounting
A survey course stressing a user-oriented approach to basic financial statements, their content, format and use. Transactions, accounting principles and conventions are studied in terms of their effects on corporate financial statements. This course will not substitute for Accounting 1 (ACCTG-111) or Accounting 2 (ACCTG-113).

ACCTG-111 Credits: 4
Accounting 1
Accounting concepts and general principles are integrated with applications by working through the complete accounting cycle for service and merchandising enterprises. Emphasis is placed on analysis and interpretation as well as on the recording, classifying and summarizing phases. A manual practice set provides practical experience using accounting theory.

ACCTG-113 Credits: 4
Accounting 2
Continuation of Accounting 1, focusing on long-term assets, liabilities and accounting for partnerships and corporations. Financial statement analysis and the cash flow statement are also introduced. Students become familiar with accounting software by completing a computerized practice set. Prerequisite(s): ACCTG-111.

ACCTG-116 Credits: 3
Intermediate Accounting 1
A study is made of advanced accounting practices and procedures. Emphasis is placed on accounting theory as it is related to income determination and balance sheet preparation for corporate commercial enterprises. Prerequisite(s): ACCTG-113.

ACCTG-117 Credits: 3
Intermediate Accounting 2
This is a continuation of Intermediate Accounting 1, completing the study of advanced accounting practices and procedures. Prerequisite(s): ACCTG-116.

ACCTG-122 Credits: 3
Accounting Software Applications
This class focuses on implementing computer functions in an accounting environment. It will cover structuring, organizing, manipulating and analyzing financial data through the use of Excel and Quickbooks computer software. This course assumes that students have basic knowledge of accounting. Students will have the option to take the Microsoft Office Specialist Certification in Excel for an extra fee.

ACCTG-123 Credits: 3
Individual Income Tax
The determination of individual income taxes including income, deductions, tax calculation, credits and payments is studied. Tax forms are prepared both manually and using tax software.

ACCTG-124 Credits: 3
Business Income Tax
Continuation of income tax laws as they apply to individual, partnership, S-corporation, C-corporation and fiduciary tax entities. Also covered are sales taxes, personal property taxes, and transfer taxes (i.e., estate and gift taxes). Students will prepare tax forms related to these topics by completing practice cases both manually and using tax software.

ACCTG-125 Credits: 3
Cost Accounting
Primary focus is placed on cost accumulation in the job, process and standard cost systems. Emphasis is directed to specific forms, records, reports and procedures utilized in cost accounting and the integration of cost accounting into the general accounting process. Prerequisite(s): ACCTG-111.

ACCTG-126 Credits: 3
Accounting for Managers
Emphasis is placed on cost analysis, cost behavior and the uses of cost data in budgetary control, internal profit measurement, profit planning, capital budgeting and decision-making. This course also will include the extensive use of electronic spreadsheets.

ACCTG-127 Credits: 3
Auditing
Generally accepted auditing standards and various auditing procedures are studied. Emphasis is placed on review of working papers, internal control, audit program, auditing evidence and procedures, financial statement presentation and the auditor’s report. Students prepare an auditing practice set. Prerequisite(s): ACCTG-116.

ACCTG-130 Credits: 3
Computerized Accounting
See INFOline at matc.edu for course description.

ACCTG-140 Credits: 3
Accounting for Governmental and Nonprofit Entities
Basic concepts, techniques and terminology of fund accounting as utilized by governmental entities are emphasized. Institutional accounting for educational institutions and hospitals, and the uniqueness of accounting for not-for-profit organizations and agencies, are also studied. Prerequisite(s): ACCTG-110 or ACCTG-113.

ACCTG-142 Credits: 2
Payroll Accounting
See INFOline at matc.edu for course description.

ACCTG-143 Credits: 3
Payroll Accounting Applications
See INFOline at matc.edu for course description.

ACCTG-150 Credits: 3
Accounting Practice With a Systems Approach
See INFOline at matc.edu for course description.

ANIMATION

ANIM-101 Credits: 3
Basic Animation
The course introduces students to the basic principles of drawing volume, shape and form. Topics include two- and three-point perspective, lighting and shading, and portraying depth in 2D artwork. These skills are necessary to visually express ideas and concepts in the development of project storyboards. Both traditional and digital methods will be explored.

ANIM-102 Credits: 3
Introduction to Toon Boom Anim Pro
This is a drawing course in which students learn to color, construct, and create animations in an industry standard software package. Students will explore digital painting, some compositing, creating X-sheets, basic lip, building character libraries, sync, and adjusting timing as applied to animation filmmaking. Prerequisite(s): ANIM-101 and ANIM-104.

ANIM-104 Credits: 3
Principles of Character Development
This course introduces students to character development as it relates to the field of computer animation. Concepts such as pose, expression, scale, and squash and stretch will be explored. Students will use hand drawing techniques and traditional “cartoon” style characters. In addition, students will learn to bring their drawings into the computer to be adjusted, modified and enhanced by utilizing Photoshop.

For more information: matc.edu or 414-297-MATC. Page 185
ANIM-105  
**Texture and Material Editing**  
Credits: 3  
This course will introduce students to the concepts and use of industry standard tools, such as Photoshop and ZBrush, for creating and editing textures and materials for use in 3ds Max.

ANIM-106  
**Principles of 3D Animation**  
Credits: 3  
This introductory course will guide students through the concepts and techniques used by 3ds Max to produce and animate virtual objects in a virtual three-dimensional environment. Basic modeling, texturing and Forward Kinematic motion techniques will be covered.

ANIM-110  
**Digital Life Drawing**  
Credits: 3  
Introduces students to the foundations of life drawing, including quick sketching and gesture drawing. Students will draw, utilizing various media, in Corel Painter on the Wacom Cintiq monitors.

ANIM-111  
**Intermediate Digital Life Drawing**  
Credits: 3  
This course continues to introduce students to the more advanced foundations of life drawing including quick sketching and gesture drawing. Students will draw utilizing various mediums in the “Corel Painter” on the Wacom Cintiq tablet/monitors. This course is offered in fall and spring semesters. Prerequisite(s): ANIM-110.

ANIM-115  
**Refining the Character**  
Credits: 3  
Through this course, students continue to add details, personality and life to their characters. Students will study the human form and the underlying muscular structure as well as body shape, exaggerating muscles, action poses and foreshortening. Prerequisite(s): ANIM-120 and ANIM-125.

ANIM-120  
**Environment and Set Design**  
Credits: 3  
Students concentrate on the planning and construction of architectural and environmental forms to create sets and backgrounds for animation projects utilizing 3ds Max. Basic architectural principles as they relate to animation and appropriate effects for specific themes are explored as well as landscape environments and atmospheric lighting effects, outer space lighting effects and weather effects. Class activities include using specialized software tools for architectural and environmental forms in the creation of thematic levels and sets. Prerequisite(s): ANIM-105 and ANIM-106.

ANIM-125  
**3D Modeling**  
Credits: 4  
This course moves students into more complex modeling and surfacing challenges using 3ds Max. Specialized contemporary modeling techniques such as NURBS and subdivision (SUB-D) surface are explored as well as specialized shaders, displacement maps and other advanced surfacing options. Students complete the semester with the design and creation of a complex, multi-part object correctly constructed, linked and boned for advanced animation techniques. Prerequisite(s): ANIM-105 and ANIM-106.

ANIM-130  
**3D Simulations and Illustrations**  
Credits: 3  
Explores product and packaging design, medical illustration and mechanical illustration. The use of nontraditional shaders such as toon shading will be explored in order to achieve a more hand-drawn or illustrated look. Rendered output will also be manipulated with industry-standard image adjustment tools. Prerequisite(s): ANIM-120 and ANIM-125.

ANIM-135  
**Character Expression and Lip Sync**  
Credits: 3  
Explores the art of creating facial expressions and synchronizing a character’s mouth movement with a voice track. Techniques will range from traditional hand drawn to 3D animation. Prerequisite(s): ANIM-115, ANIM-130 and ANIM-180.

ANIM-140  
**Timelines, Keyframes and Kinematics**  
Credits: 3  
This course continues from ANIM-125 3D Modeling. We will explore and analyze character motion from several sources in order to accurately and believably replicate that motion with digital characters. Students also explore topics such as using Inverse and Forward Kinematics during an animation using 3ds Max. Prerequisite(s): ANIM-120 and ANIM-180.

ANIM-150  
**Advanced Animation**  
Credits: 3  
This is a project-based course and students will create a short film (two to three minutes in length) using 2D or 3D animations. During this class, students will be expected to meet production deadlines, following proper animation production processes, and create an entertaining film for the final project. Intensive studio time will be available, and the students will have access to an instructor at all times. Students will be expected to communicate with the instructor each class to discuss progress. The Advanced Animation course has been designed to allow the student an in-depth study of the animation production process. Prerequisite(s): ANIM-101 and ANIM-106.

ANIM-155  
**Animation Internship**  
Credits: 2  
Students will work onsite in a professional setting, or work on a specific task in consultation with a professional mentor. Regular reviews with a professional are scheduled to assess the student’s progress and work quality. The details of the internship arrangements can be developed between the student and the participating company as long as the specific minimum course requirements are fulfilled. Prerequisite(s): ANIM-115, ANIM-130 and ANIM-140, and completion of or currently enrolled in ANIM-160.

ANIM-156  
**Broadcast Animation**  
Credits: 3  
Introduces students to the concepts of “motion graphics” using bitmapped imagery. Using the industry standard software, After Effects, students will explore animated composition techniques, along with comparison of 2D and 3D technologies widely used to produce animation for the television and video industries. Prerequisite(s): VCOM-150.

ANIM-160  
**Animation Portfolio**  
Credits: 3  
Each student finalizes a series of 30-second to three-minute animated shorts demonstrating his/her capabilities. The collection is prepared for distribution to potential employers or to four-year animation degree programs. In addition, each student prepares a professional-level paperwork folio and a personal ID package (stationery, business cards, etc.), and is required to participate in the class preparation for the year-end departmental portfolio show in conjunction with other degree programs. Prerequisite(s): ANIM-115, ANIM-130 and ANIM-140.

ANIM-165  
**Digital Post-Production**  
Credits: 3  
Students in Digital Post-Production will experiment with the final output and the effects options for creating actual demo animation reels or disks. Project organization, electronic and paper are emphasized, along with the basics of non-linear editing, special effects, titles and credit creation, as well as the final stages of compositing using tools such as AfterEffects and Premiere. Prerequisite(s): ANIM-115, ANIM-130 and ANIM-140 and completion of or currently enrolled in ANIM-160.

ANIM-180  
**Digital Cinematography**  
Credits: 3  
This is a comprehensive study of lighting and camera techniques based on professional practices in the traditional film and video industries. The course includes a detailed study of film, TV and video samples that will guide students through their own exploration of digital light and cameras as they work.
through a series of assignments requiring certain effects in their own digital sets and scenes. Prerequisite(s): ANIM-101.

**ANESTHESIOLOGY**

**ANTECH-100 Credits: 1**

*Anesthesia Tech Career Exploration*

Through lecture and lab, this course is designed to provide an exploration of the anesthesia technology field. During the class, students develop an understanding of healthcare practices required by an anesthesia technologist during a surgical intervention. Students will also take part in hands-on activities and learn from experts in the field. Students leave the course with information needed to make an informed decision about entering the anesthesia technology field.

**ANTECH-102 Credits: 2**

*Introduction to Anesthesia Technology*

Introduces distinctive areas of anesthesia technology and the role of the technologist. An overview of typical surgical procedures and instrumentation and surgical department orientation are covered as well as medical terminology, blood-borne pathogens and nonpatient-related emergencies. Research papers on related topics and a project group will be required. Guest speakers and site visits to local healthcare/diagnostic facilities may be scheduled. Prerequisite(s): Admission to the Anesthesia Technology (10-541-1) program.

**ANTECH-117 Credits: 3**

*AT Fundamentals 1*

Students are introduced to the surgical suite and the typical daily duties of an anesthesia technologist. Didactic as well as laboratory instruction are provided to supply the student with the required theoretical principles of the profession. Competencies will be demonstrated through written examinations, verbal explanations, and demonstrations of clinical technique. Prerequisite(s): Admission to the Anesthesia Technology (10-541-1) program and have taken NATSCI-177 or NATSCI-201.

**ANTECH-118 Credits: 3**

*AT Instrumentation 1*

Primary focus of this course is the anesthesia machine. However, all ancillary equipment, including but not limited to gas cylinders, hospital supply lines, ventilators and absorbers will also be covered. The set-up, calibration, operation, basic troubleshooting, maintenance and safety checks for each is taught. Competencies will be demonstrated through written examinations, verbal explanations and demonstrations of clinical technique. Prerequisite(s): Admission to the Anesthesia Technology (10-541-1) program.

**ANTECH-120 Credits: 2**

*AT Clinical Procedures*

This four-week course is the student’s first opportunity to observe and gain experience in a healthcare facility. Twelve hours per week are scheduled in the hospital setting under direct supervision. Students will observe all procedures and may begin to assist in nondirect patient duties. Students experience various AT environments as scheduled. An additional four hours per week are required for on-campus lectures/discussions. Prerequisite(s): Admission to the Anesthesia Technology (10-541-1) program.

**ANTECH-133 Credits: 3**

*Anesthesics*

Clinical importance of drug delivery is presented with an emphasis on the most commonly administered anesthetics, as well as other perioperative drugs. Additionally, the federal drug approval processes, various delivery methods, dose calculations and a review of the nervous system are presented. Prerequisite(s): ANTECH-120.

**ANTECH-137 Credits: 3**

*AT Fundamentals 2*

Concepts learned in ANTECH-117 will be expanded upon. Focus will be on the various types of surgical procedures, including emergency situation management and how the role of the anesthesia technologist varies in each. Patient transport, monitoring and positioning also will be stressed. Prerequisite(s): ANTECH-120.

**ANTECH-138 Credits: 3**

*AT Instrumentation 2*

This course is a continuation of ANTECH-118 and expands upon the scope of anesthesia instrumentation. Various pieces of instrumentation such as cell savers, patient warmers, fluid warmers, ACT machines and pulse oximeters will be discussed. Competencies will be demonstrated through written examinations, verbal explanations and demonstrations of clinical technique. Prerequisite(s): ANTECH-120.

**ANTECH-139 Credits: 3**

*Anesthesia Technology Clinical Experience 1*

Presents students with their first opportunity in a direct patient care setting. Students will be able to correlate their didactic and laboratory classes with the day-to-day duties of an anesthesia technologist. Prerequisite(s): ANTECH-120.

**ANTECH-185 Credits: 2**

*Anesthesia Technology Clinical Seminar*

Students discuss with other students the cases most recently performed during their clinical experience. Research papers will be required on a variety of related topics as well as a review of the written journal detailing the clinical phase of instruction. This course will help to prepare students for the written examinations that will lead to credentialing in AT. Guest speakers may be scheduled. Résumé-writing and interview skills will be covered. Prerequisite(s): Completion of or currently enrolled in ANTECH-185.

**ANTECH-187 Credits: 4**

*Anesthesia Technology Clinical Experience 3*

This course is a continuation of ANTECH-186 and provides the practical application to perfect skills and knowledge through a wider range of cases. Students begin to take a more active and responsible part in the day-to-day tasks associated with their clinical duties. A written journal detailing the clinical phase of instruction also will be required. Prerequisite(s): ANTECH-186.

**ALCOHOL AND OTHER DRUG ABUSE SERVICES**

**AoDA-109 Credits: 3**

*Drug Use and Abuse*

Students are acquainted with the pharmacological effects of chemical use/abuse. This course takes an analytic approach to identification, intervention, prevention, and treatment issues.

**AoDA-150 Credits: 3**

*Professional Readiness and Ethical Responsibilities*

The course is designed to familiarize the student with the obligations of an addiction counselor to adhere to accepted ethical and behavioral standards of conduct and continuing education. An emphasis on professional codes of ethics, federal and state laws and agency regulations, and professional development is maintained.

**AoDA-151 Credits: 3**

*Clinical Evaluation and Treatment Planning*

Provides an overview of the key components of the evaluation and treatment planning processes, including the necessary knowledge base, skills and attitudes of the professional. This is also a practice-oriented course and students will participate in a variety of screening, assessment, and treatment planning situations. Prerequisite(s): HUMSVC-102, HUMSVC-103 and HUMSVC-113.
Service Coordination and Documentation
Focuses on the administrative, clinical, and evaluative activities that bring the client, treatment services, community agencies, and other resources together to focus on issues and needs identified in the treatment plan. Documentation requirements and skills, record management, and confidentiality issues are also a primary focus of the class. Prerequisite(s): AODA-109.

Counseling Skills Development
Provides instruction and practice opportunities to develop the specific skills necessary for counseling individuals, groups, families and significant others. These skills include establishing a helping relationship, interviewing, using methods that reinforce positive behavior, motivational techniques, reframing and redirecting negative behaviors, crisis management, and applying culturally appropriate intervention strategies. Prerequisite(s): HUMSVC-102, HUMSVC-103 and HUMSVC-113.

AODA-160
Credits: 1
Ethical Dilemmas
This course provides an opportunity for reflection and conversation about the ways in which personal and professional values impact work with clients. Emphasis is placed on exploring roles, rules and boundaries which are necessary for the helping relationship. An eight-step process for ethical decision-making will be explained and applied to select case examples.

Treatment Issues
Applies fundamental principles of the helping relationship to working with clients who have problems related to their substance use. Emphasis is placed on application of current treatment models in the areas of assessment, case management, education, professional responsibilities and counseling.

Service Delivery Issues
Focuses on issues related to delivery of substance abuse services to diverse population groups. Emphasis is placed on providing effective tools for the case management and coordination.

APPLIANCE SERVICING

APPSCV-308
Electricity for Appliance Servicing
Covers the fundamentals of electricity and electronics, including the elementary principles of direct and alternating current. Instruction consists of lectures that are immediately reinforced by laboratory experiments. Prerequisite(s): Student must be admitted into the Appliance Technician program (31-445-1).

APPSCV-310
Laundry Equipment
Covers the basics of the laundering process and the reasons for the various cycles in relation to servicing the equipment. Functions of the mechanical and electromechanical components are isolated and explained. Applications of gas and electric drying heat are taught. Prerequisite(s): Student must be admitted into the Appliance Technician program (31-445-1).

APPSCV-316
Kitchen Equipment 1
Operation of the dishwasher, compactor and gas and electric range; their servicing; and diagnosis of problems are included in this course. Mechanical components and electrical circuits are described and illustrated. Electronic range controls are also covered. Prerequisite(s): Student must be admitted into the Appliance Technician program (31-445-1).

APPSCV-324
Refrigeration 1 (Theory and Techniques)
Covers the theory of refrigeration and refrigerants, the operation of a domestic refrigeration system and the operating principles of the electrical controls used with refrigeration systems. Test instruments, service tools and refrigerant recovery are also covered. Prerequisite(s): Student must be admitted into the Appliance Technician program (31-445-1).

APPSCV-329
Related Business for Appliance Service
Course is designed to orient the student to the nature and scope of the appliance technician’s work, including meeting and working with customers, and to provide selected skills in business English and in business practices. Prerequisite(s): Student must be admitted into Appliance Technician program (31-445-1).

APPSCV-340
Kitchen Equipment 2
Electric range and microwave circuits and the use of symbols are analyzed. Instruction and practical training are given in the reading of wiring diagrams used by service technicians. Prerequisite(s): Student must be admitted into Appliance Technician program (31-445-1).

APPSCV-342
Refrigeration 2 (Servicing)
Cabinets, evaporator servicing and defrosting of refrigerators and freezers are covered. Refrigerator ice makers, their operation, servicing and electrical circuits are explained. Room air conditioners are included in-depth. Prerequisite(s): Student must be admitted into the Appliance Technician program (31-445-1).

For more information: matc.edu or 414-297-MATC. Page 188
ARCHITECTURAL MATERIALS AND METHODS 2

Prerequisite(s): ARCHT-121.

Second in a series, this course teaches the student the eight classes of construction and attributes of materials available for constructing buildings. It also covers masonry construction and metal frame construction. The building materials studied will include masonry, metals, finishes, specialties, equipment and furnishings. Prerequisite(s): ARCHT-121.

ART

ART-201

Understanding Art

Survey course with emphasis upon painting, sculpture and architecture. Major topics include art forms and styles, contributions and achievements of periods in the development of Western art and world art styles.

ART-202

Artistic Representation: Unity and Variety

Students will apply traditional visual and sound techniques, as well as illustration techniques, to a variety of ideas and concepts. The course of study will include how media affect content and perception, how to critique media compositions, and how to illustrate for specific themes.

ARCHITECTURAL PRactices AND PROCEDURES

Introduces students to the practice of architecture. It reviews in some detail the AIA documents and procedures used in the design and construction of buildings as they proceed through an architectural office, from initial design concept to construction documentation to final construction. The possible roles the architectural technician may play in this process are explored. Prerequisite(s): ARCHT-103.

INTRODUCTION TO REVIT

Introduces the student to 3D computer drafting and BIM (Building Information Modeling) using REVIT software. It builds on student’s base knowledge of industry standard, working drawings and construction materials as the basis for developing REVIT models. The student will learn how to construct parametric drawings for a building or structure including plans, elevations, and sections, as well as axonometric views. Annotation strategies, such as dimensioning and text, will also be covered. Employing title block templates and sheet composition, students will prepare industry standard drawing sets for presentation.

MECHANICAL AND ENVIRONMENTAL SYSTEMS 2

Course is designed to teach students the basic concepts of plumbing, electrical illumination, fire protection and acoustical systems as they pertain to human comfort and safety in buildings. The student will develop the ability to produce architectural/mechanical drawings and to perform initial calculations for sizing water supply systems, electrical systems, and lighting layouts. Prerequisite(s): ARCHT-103, ARCHT-131.

AUDIOPRODUCTION

AUDIOPRODUCTION 100

Introduction to Music Software

This course is a lab introducing the basics of software programs Finale, Logic and Pro Tools in music composition, music production and audio recording. Focusing on recording and manipulating MIDI and audio.

AUDIOPRODUCTION 102

Techniques of Sound Recording

Studio recording is the focus of this course. The increasing use of electronic amplifying/recording equipment in the field of music necessitates that the musician have basic knowledge of the bows and whys of sound and recording equipment. Microphone selection and placement, signal flow and signal processing during tracking and mixing process will have central focus in lecture and lab hours.

AUDIOPRODUCTION 103

Recording Live Concerts

Lecture/lab course for the audio engineer that teaches the elements of professionalism, the technical aspects of signal flow, microphone selection and placement and mixing specifically pertaining to the live music environment.

AUDIOPRODUCTION 111

Advanced Music Software

Offers in-depth, practical study and application of current industry-standard Digital Audio Workstation music software programs. Prerequisite(s): AUDIO-100 or MUSIC-113.

AUDIOPRODUCTION 114

Critical Listening of Sound/Music

Introduces ear training and critical listening from the perspective of the audio engineer including frequency recognition and contemporary production techniques. The student will learn to aurally analyze and identify contemporary popular song forms and production styles used.

AUDIOPRODUCTION 116

Advanced Technology of Sound Recording

Builds on the knowledge of AUDIO-102 Techniques of Sound Recording in the student’s first semester. Emphasis is placed on creating stereo and surround sound, and mixing and mastering. Prerequisite(s): AUDIO-102 or MUSIC-154.

AUDIOPRODUCTION 117

Sound Reinforcement

Provides the student with both a theoretical and practical background in live sound reinforcement. Emphasis is placed on both indoor and outdoor sound reinforcement applications. The components of the sound system are examined in detail and are then utilized by the student in providing live sound for MATC concerts.

For more information: matc.edu or 414-297-MATC.
**AUDIO – AUTO2 DEGREE/DIPLOMA COURSE DESCRIPTIONS**

**AUDIO-118 Credits: 2**  
**Studio Management and Design**  
Covers the fundamentals of basic studio operations including: accounting, client relations, staff, advertising and equipment management. Strong emphasis is placed on scheduling, promotion and marketing and interpersonal relationship communications. Also covered are the basic elements of studio construction room acoustics, and project studio acoustic treatments. Prerequisite(s): AUDIO-116 or MUSIC-155.

**AUDIO-120 Credits: 3**  
**Audio Production for Film**  
A lecture/lab covering the issues of audio for film including ADR, Foley, library sound effects, sound effect creation and enhancement, field recording, managing sync dialog, environmental ambiance, and using music libraries and original music.

**AUDIO-125 Credits: 1**  
**Advanced MIDI Recording**  
The course covers the development, implementation, theory and uses of MIDI equipment. The practical operations of MIDI hardware and software of several types are learned through lecture demonstrations and project assignments.

**AUDIO-126 Credits: 2**  
**Electronics of Audio Engineers**  
Students will learn the principles of electronic technology with an emphasis on applications to audio engineering both in theory and practice.

**AUDIO-127 Credits: 3**  
**Interactive Audio**  
Introduction to the theory and practical approach to recording audio for gaming and web applications. Prerequisite(s): AUDIO-120.

**AUDIO-128 Credits: 3**  
**Final Project – Independent Study**  
This Final Project Independent Study is the student’s recording project of his or her choosing of any of the audio disciplines including in-studio multitrack recording, live concert recording, sound for film, gaming or web interactive audio. From concept to completion, the student will note process and journal the details in creating the audio recording. Prerequisite(s): AUDIO-118.

**AUTOMOBILE – MECHANICAL**

**AUT01-302 Credits: 2**  
**Powertrain Maintenance and Light Repair Fundamentals**  
Fundamentals of design, construction and operation of automotive engine and drivetrain components are studied. Discussions, lectures and demonstrations pertain to the diagnosis, maintenance and light repair of these units.

**AUT01-304 Credits: 4**  
**Powertrain Maintenance and Light Repair Lab**  
Instruction is given in the diagnosis, inspection, maintenance and light repair of automotive engine and drivetrain components. Practical lab exercises are performed on late-model vehicles or lab mockups. Prerequisite(s): Completion of or currently enrolled in AUTO1-302.

**AUT01-306 Credits: 2**  
**Heating and Air Conditioning Fundamentals**  
Construction and operation of automobile air conditioning systems are studied through lecture and demonstration. Service, repair, testing, diagnosis and recovery/recycling are performed on automobile conditioning systems. Upon successful completion of the CFC unit, a state certificate will be issued.

**AUT01-308 Credits: 2**  
**Brake and Steering Suspension Fundamentals**  
Fundamentals of design, construction and operation of automotive brake and steering/suspension components are studied. Discussions, lectures and demonstrations pertain to the diagnosis, maintenance and repair of these units.

**AUT01-309 Credits: 4**  
**Brakes and Steering Suspension Lab**  
Instruction is given in the diagnosis, inspection, maintenance and repair of automobile brake and steering/suspension components. Practical lab exercises are performed on late-model vehicles or lab mockups. Prerequisite(s): Completion of or currently enrolled in AUTO1-309.

**AUT01-310 Credits: 2**  
**Brakes and Steering Suspension Lab 1**  
Principles of operation, construction and servicing of electronic fuel injection systems, steering column, electronic suspension and anti-lock brake systems are studied through lecture and demonstration. Service and testing will be performed on these components and on late-model vehicles. Prerequisite(s): Completion of or currently enrolled in AUTO1-308.

**AUT01-312 Credits: 2**  
**Brakes and Steering Suspension Lab 2**  
Practical lab exercises performed on late-model vehicles or lab mockups. Prerequisite(s): Completion of or currently enrolled in AUTO1-308.

**AUT01-314 Credits: 2**  
**Electrical and Electronic Fundamentals**  
Fundamentals of automotive electricity and the design, construction and operation of automotive electrical and electronic systems and components are studied. Discussions, lectures and demonstrations pertain to the diagnosis and repair of these systems and units.

**AUT01-316 Credits: 4**  
**Electrical and Electronic Lab**  
Instruction is given in the diagnosis, inspection and repair of automotive electrical and electronic systems and components. Practical lab exercises are performed on late-model vehicles or lab mockups. Prerequisite(s): Completion of or currently enrolled in AUTO1-314.

**AUT01-318 Credits: 2**  
**Auto Instrumentation and Accessories**  
Construction, operation, service and testing of automotive instrumentation and accessories are studied through lecture and demonstration. Service and testing are performed on these components and on late-model vehicles. Prerequisite(s): Completion of or currently enrolled in AUTO1-314.

**AUT01-322 Credits: 2**  
**Engine Control Systems 1 Fundamentals**  
Fundamentals of design, construction and operation of automotive engine control, ignition and fuel systems and components are studied. Discussions, lectures and demonstrations pertain to the diagnosis, maintenance and repair of these units. Prerequisite(s): AUTO1-316 and AUTO1-318.

**AUT01-324 Credits: 4**  
**Engine Control Systems 1 Lab**  
Principles of operation, construction and servicing of emission controls are studied through lectures, discussions and demonstration. Service and testing techniques are performed on various automobile emission systems and components. Prerequisite(s): Completion of or currently enrolled in AUTO1-322.

**AUT01-326 Credits: 2**  
**Engine Control Systems 2 Fundamentals/Lab**  
Principles of operation, construction and servicing of emission controls are studied through lectures, discussions and demonstration. Service and testing techniques are performed on various automobile emission systems and components. Prerequisite(s): Completion of or currently enrolled in AUTO1-322.

**AUT01-393 Credits: 2**  
**Electronic Fuel Injection Systems**  
Practical shop exercises in the diagnosis and servicing of electronic fuel injection systems are done on late-model vehicles. All techniques related to these servicing procedures conform to practices found in present-day trade situations.

**AUTOMOTIVE TECHNOLOGY**

**AUT02-150 Credits: 2**  
**Automotive Fundamentals**  
Provides a foundation for students entering the automotive service field. It prepares students to perform basic automotive maintenance, as well as learn service and test theory, parts room operation, predelivery procedures, and shop and tool safety. Prerequisite(s): Students must be admitted to Automotive Technology program (10-602-6).

**AUT02-151 Credits: 4**  
**Electrical Systems and Power Accessories**  
This is an introductory course in automotive electricity and electronics. Direct current electricity, series and parallel circuits, and basic automotive electronics are covered, as
well as battery operation and testing, and the operating, testing and repairing of charging and starting circuits.

AUTO2-152 Credits: 2
Heating and Air Conditioning
Covers the design characteristics and principles of automotive heating and air conditioning. Emphasis is placed on the theory, operation, maintenance and repair of the systems. Also included are the various controls for the heating and air conditioning systems. Upon successful completion of the CFC unit, a state certificate will be issued.

AUTO2-153 Credits: 3
Alignment, Suspension and Steering
Covers the design, construction and operation of suspension and steering systems, wheel alignment and wheel balancing. Also included are the diagnosis and repair of steering gears, rebuilding and aligning front ends and wheel balancing.

AUTO2-154 Credits: 2
Fuel Management 1
Covers fuel and emission control systems, with an emphasis on microprocessor control systems. Basic principles of carburetion, ignition, and emission controls are covered.

AUTO2-155 Credits: 4
Fuel Management 2
Continues to build upon the knowledge gained in Fuel Management 1, with an emphasis on solid-state electronics applied to engine electrical systems. Principles of design, construction and operation of electronic fuel injection systems are covered. Prerequisite(s): AUTO2-154.

AUTO2-156 Credits: 4
Fuel Management 3
Continuation of Fuel Management 2, with an emphasis on the various injection systems. Diagnosis, disassembly, repair or replacement of injectors, injection pumps, fuel lines, etc., are covered. Prerequisite(s): AUTO2-155.

AUTO2-157 Credits: 4
Engine Concepts
Covers the operating principles and construction of the automotive internal combustion engine. Included are the disassembly, cleaning, inspection, measurement, servicing and reassembly of the entire engine. This course also covers clutches, drivelines and manual transmission-transaxle.

AUTO2-158 Credits: 4
Transmission, Transaxles and Drivelines
Covers the principles of operation and construction of clutches, manual and automatic transmissions and transaxles. Included are the diagnosis, disassembly, inspection, repairing and reassembly of the transmissions and transaxles used in current production.

AUTO2-159 Credits: 4
Automotive Brakes
Covers design, construction and operation of various brake systems. Included in this course will be the diagnosis, repairing, or replacing of various components on disk and drum brake systems. Power assist units and anti-lock brake systems will also be covered.

AUTO2-160 Credits: 4
Automotive Accessories
Covers the design and operation of various automotive accessories. Diagnosis, repair and replacing of cruise control, windshield wiper motors, speedometers, etc., are also covered.

AUTO2-161 Credits: 3
Express Service
Express service is an introductory course designed to provide the student with fundamentals of operation and maintenance procedures including researching vehicle service information. Students will learn basic automotive shop safety, tool and equipment use. Upon completion of the course students should be able to safely and accurately perform A1 - B1 vehicle inspection and maintenance service with efficiency and at 100% accuracy.

AUTO2-162 Credits: 3
Applied Automotive Training 2
Covers various applications in automotive technology through on-the-job exposure. Students can choose automotive transmission, transaxle, drivelines, fuel management and engine concepts as their work assignment. Prerequisite(s): AUTO2-155, AUTO2-157, AUTO2-158.

AUTO2-163 Credits: 3
Automotive Internship 1
The internship affords students an opportunity to reinforce newly acquired skills in an automotive repair environment, while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete eight weeks of structured, on-the-job training in automotive automatic transmissions/transaxles and diagnosis and repair of electronic engine control systems.

AUTO2-164 Credits: 1
Automotive Internship 2
The internship affords students an opportunity to reinforce newly acquired skills in an automotive repair environment, while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete eight weeks of structured, on-the-job training in automative braking systems, including anti-lock and automotive accessory network systems.

AUTO2-165 Credits: 1
Automotive Internship 3
The internship affords students an opportunity to reinforce newly acquired skills in an automotive repair environment, while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete six weeks of structured, on-the-job training in automotive engine and driveline repair.

AUTO2-166 Credits: 1
Automotive Internship 4
The internship affords students an opportunity to reinforce newly acquired skills in an automotive repair environment, while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete eight weeks of structured, on-the-job training in automotive automatic transmissions/transaxles and diagnosis and repair of electronic engine control systems.

AUTO2-167 Credits: 1
Automotive Internship 5
The internship affords students an opportunity to reinforce newly acquired skills in an automotive repair environment, while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete eight weeks of structured, on-the-job training in automotive advanced electronic engine control diagnostics.

For more information: matc.edu or 414-297-MATC. Page 191
AUToby – AutoBody

AUToby-302 Credits: 2
Automobile Panel Straightening
Use of tools and equipment necessary to straighten sheet metal are explained and demonstrated. Students practice fundamental skills including picking, filing, dinging, shrinking, and applying plastic body fillers.

AUToby-303 Credits: 1
Body Servicing Equipment and Supplies
Information is presented concerning the construction and use of power and manual equipment, fillers and finishes which are used in the repair of automobile bodies.

AUToby-304 Credits: 1
Basic Auto Mechanical Systems
Course is designed to develop the ability to interpret automobile drawings and to understand the relation between drawings, basic trade theory, and shop operations.

AUToby-305 Credits: 5
Auto Body 1
Techniques of auto body repair are presented including safety regulations, damage analysis, unibody construction, component alignment, plastic filler application, welding, and dinging sheet metal damage. Practical lab exercises are performed on lab mock-ups or lab vehicles. Prerequisite(s): Completion of or currently enrolled in AUToby-300.

AUToby-310 Credits: 4
Auto Body Fundamentals
Students are provided further lab experiences in various repairs including work on unibody construction; door locks and window regulators; aligning body components; wiring accessories; wet-sanding; and color mixing, blending and spraying. Trade safety regulations are emphasized. Discussions, lectures and demonstrations will pertain to these areas of auto body repair. Prerequisite(s): AUToby-300.

AUToby-311 Credits: 3
Automobile Frame Straightening
Students become familiar with frame and unibody construction, tools and equipment through lectures and demonstrations of straightening techniques on damaged automobiles using dedicated and universal bench measuring systems and conventional equipment. Shop safety is emphasized. Prerequisite(s): Completion of or currently enrolled in AUToby-310.

AUToby-312 Credits: 1
Electrical Servicing for Auto Body Repairing
Fundamental facts and principles of automotive electricity that apply to auto body repair are presented. Instruction covers such subjects as the storage battery, Ohm’s Law, and lighting, charging and ignition circuits.

AUToby-313 Credits: 1
Surface Preparation and Color Matching
Lecture-demonstrations acquaint students with sheet metal preparation and refinishing techniques. Students practice color matching new and weathered finishes as well as sanding, masking, feather-edging, and applying undercoats, sealers and color coats. Prerequisite(s): AUToby-300.

AUToby-314 Credits: 1
Front-End Alignment
Covers the diagnosis and correction of steering and alignment problems. Students are instructed in the construction and operation of front-end alignment and wheel-balancing equipment used to correct faults in front-end suspension systems.

AVIATION TECHNOLOGY/ AERONAUTICS

AVIteC-302 Credits: 2
Engine Fuel Metering Systems
Training is provided in the servicing of various types of fuel supply and fuel metering systems. Skills are developed in overhauling, assembling and testing of fuel system components.

AVIteC-303 Credits: 5
Powerplant Electrical and Instrument Systems
Skills are developed in the removal, disassembly, inspection, overhaul, installation, adjustment and systematic troubleshooting of the complete powerplant ignition and electrical systems. Equipment manufacturers’ service recommendations are stressed in the overhaul of electrical components.

AVIteC-304 Credits: 1
Aircraft Induction and Supercharging Systems
Training is provided in the servicing of various types of fuel supply and fuel distribution systems. Skills are developed in overhauling, assembling, and testing of fuel distribution system components.

AVIteC-306 Credits: 2
Engine Lubricating Systems
The construction, function, operating principles and relationship of a complete engine lubrication system to the basic engine are emphasized.

AVIteC-315 Credits: 2
Aircraft Reciprocating Engines 1
Skills are developed and instructions given in the removal, disassembly, cleaning, inspection, repair, assembly, installation, testing and troubleshooting of aircraft engines. Emphasis is placed upon the correct application and use of engine servicing.

AVIteC-316 Credits: 4
Aircraft Reciprocating Engines 2
Students continue the development of skills and knowledge gained in Aircraft Reciprocating Engines 1. Prerequisite(s): AVIteC-315.

AVIteC-318 Credits: 2
Aircraft Gas Turbine Engines 1
Training is given in the correct procedures and practices involved in the overhaul, inspection, maintenance, operation, testing, troubleshooting and servicing of gas turbine engines and their related accessory systems.

AVIteC-319 Credits: 5
Aircraft Gas Turbine Engines 2
Students continue the development of skills and knowledge gained in Aircraft Gas Turbine Engines 1. Prerequisite(s): AVIteC-318.

AVIteC-320 Credits: 4
Aircraft Electrical Systems
Instruction affords students an opportunity to apply basic electrical principles to problems encountered in the electrical servicing of airframes. Typical jobs performed are construction of simple/complex circuits and using test equipment to check them.

AVIteC-323 Credits: 3
Aircraft Ground Operation and Servicing
Students learn proper procedures for fueling, moving and securing aircraft. Also studied are proper cleaning and corrosion-control methods for aircraft.

AVIteC-340 Credits: 1
Aircraft Welding
Students study the various welding processes used to fabricate and repair aircraft parts. Students will also learn to silver solder, braze and weld aluminum and stainless steel used in aircraft.

AVIteC-360 Credits: 2
Propeller Systems
Training is provided in the removal, installation, routine inspection and maintenance of wood and metal propellers. Causes for rejection of wood and metal propeller types are explained, with attention given to FAA and manufacturers’ publications.

AVIteC-367 Credits: 3
Composite Structures
The aircraft composite structure is separated into subassemblies and their related parts. Aircraft woods and fabric coverings are identified and repaired. Major emphasis is given to the maintenance and repair of composite structures and aircraft finishes.
AVITEC – BAKING

DEGREE/DIPLOMA COURSE DESCRIPTIONS

AVITEC-368 Credits: 3
Aircraft Structures
The aircraft structure is separated into subassemblies and their related parts. Major emphasis is given to the maintenance and repair of sheet metal structures.

AVITEC-370 Credits: 5
Aircraft Instrument, Control and Warning Systems 1
Construction, operation and installation of instruments present in aircraft are studied. Students then apply the knowledge of theory and operation of instruments to the typical jobs included in routine line maintenance.

AVITEC-371 Credits: 1
Aircraft Instrument, Control and Warning Systems 2
Students apply knowledge of theory and operation of instruments to typical jobs included in routine line maintenance. Prerequisite(s): AVITEC-370.

AVITEC-372 Credits: 4
Hydraulic and Pneumatic Power Systems
The principles of aircraft hydraulic and pneumatic systems are explained. The operation of hydraulic and pneumatic landing gear systems, as well as wing flap systems, are stressed. The construction and servicing of landing gear wheels, brakes, tires, shock struts, and auxiliary wheels are emphasized.

AVITEC-376 Credits: 4
Airframe Maintenance
The methods and techniques of airframe assembly and disassembly are explained. The student learns to select and use FAA and manufacturers’ aircraft maintenance specifications, data sheets, manuals and publications and related federal aviation regulations.

AVITEC-380 Credits: 1
Basic Physics
The basic principles of simple machines, heat, sound and fluids are presented and applied to aircraft systems. Additionally, the theory of flight as applied to both fixed and rotary wing aircraft is studied.

AVITEC-381 Credits: 3
Basic Electricity
The basic principles of DC and AC electricity are presented and applied to aircraft systems. Topics include electron theory, sources of electricity, and measurement of current, voltage, resistance and power.

AVITEC-382 Credits: 3
Aircraft Materials and Their Inspection
Emphasis is placed on the properties of materials used on aircraft and on their inspection. Also discussed are the various types of fasteners used. Time is also spent on fluid lines and fittings.

AVITEC-383 Credits: 1
Aircraft Maintenance Publications, Records and Mechanics Regulations
Students study the various federal air regulations that pertain to aviation mechanics and aircraft maintenance and also learn the proper forms and methods of entry for aircraft records.

AVITEC-393 Credits: 2
Mathematics for Aviation Technicians
Students are given the mathematical skills necessary to successfully perform mechanic duties. Topics covered include roots, powers, exponents, areas, volumes, ratios, proportions, percentages, displacements and algebraic operations.

BUSINESS ADMINISTRATION

BADM-104 Credits: 3
Business Statistics
A general study will be discussed to interpret areas related to statistics in the business world. Topics include the interpretation and construction of statistical tables and charts, finding the best estimator of a population (including central values and measures of dispersion), normal distributions, sampling, hypothesis test, probabilities, six-sigma concepts utilized in quality control, and linear regression and correlations. The use of statistical software to facilitate will be discussed. Prerequisite(s): RBUS-102, MATH-106, MATH-107, MATH-123 or any 200-level MATH course.

BADM-126 Credits: 3
Business Finance
Primary emphasis is on the role of the financial manager. Special attention is given to ratio and financial statement analysis. The topics of budgeting, working capital management, leverage and short-and long-term financing are also covered. Prerequisite(s): ACCTG-I10 or ACCTG-I11.

BADM-134 Credits: 3
Business Organization and Management
An introduction to business, focusing on a basic understanding of the activities, functions and principles of business enterprises. This course covers the responsibilities and challenges of operating a business with the emphasis placed on marketing, human relations, management, finance, labor, franchising, forms of ownership and careers.

BADM-145 Credits: 3
Small Business Management
A concise examination is made of all phases of managing a small business and isolating significant problems for solution. Specific problems of the small business firm, such as financing, developing, staffing, etc., are considered and analyzed. Prerequisite(s): BADM-134 or MKTG-102.

BADM-155 Credits: 3
Management Principles
A comprehensive overview of the functions and principles of management that lead to success in the operating climate of the new millennium. Prerequisite(s): BADM-134, BADM-126 or HEALTH-I04.

BADM-160 Credits: 3
Business Law 1
An introduction to law and legal procedures based on case and statutory law. The course is designed to highlight such areas of law as torts, contracts, agency law, employment law, sales and insurance law.

BADM-165 Credits: 3
Legal Environment of Business
The course presents the legal concepts governing the conduct of business in the United States from a managerial perspective including contracts, torts, agency and government regulations. The course is designed to provide students with an understanding of the legal process as it applies to managerial and other business problems. As legal rules frequently change, the emphasis will be on developing independent critical thinking skills.

BADM-166 Credits: 3
Advanced Legal Issues
This course provides an introduction into various types of businesses. It also discusses financial transactions and the causes of bankruptcy. Employment law, property interests, bailments, wills, trusts and estates, and agency are included. Prerequisite(s): BADM-165.

BADM-169 Credits: 1
Public Health Law and Administration
The various governmental health agencies and their functions as they relate to funeral service are studied. The responsibilities of the funeral director with regard to public and employee safety in the funeral service environment are also discussed. Prerequisite: Admission to Funeral Service program.

BADM-192 Credits: 3
Risk Management and Insurance
This course provides an introduction to managing risks in order to maximize the value of a firm. An examination of types of business loss exposures and their management, with a primary emphasis on insurance, are discussed in an applied approach.

BAKING

BAKING-101 Credits: 3
Specialty Baking and Pastry Techniques 1
This course involves such learning experiences as the preparation of yeast rolls, breads, pies, cakes, cookies, tarts, doughnuts, holiday specialties and tortes. Proper use and care of equipment, together with sanitation and hygiene, are emphasized.

For more information: matc.edu or 414-297-MATC. Page 193
BAKING-102 Credits: 3
Hotel and Restaurant Dessert Production
This course covers the preparation and service of hot and cold desserts with a focus on individual desserts, a la minute preparations, and numerous components within one preparation. Students will learn station organization, timing, and service coordination for restaurant dessert production. Products made will include frozen desserts, ice cream, sorbet, glaces, individual plated desserts, and desserts for functions and banquets. During the course, students will develop a dessert menu from the perspective of variety, costs, practicality, and how well it matches the rest of the menu.

BAKING-103 Credits: 1
Decorative Showpieces
Detailed hands-on work is emphasized in the creation of decorative showpieces. Studies include ice sculpting, cake decorating and chocolate artistry. Prerequisite(s): CULART-102.

BAKING-104 Credits: 2
Fondant and Gum Paste
Students get hands-on practice with advanced cake decorating using fondant and gum paste. Students will prepare single and tiered cakes using the fondant for decorating floral, modern, and children's themed cakes, plus extensive work in the use of gum paste for a variety of floral arrangements that are used for wedding and/or all-occasion cakes.

BAKING-105 Credits: 4
Cafe Operations 1
Students learn techniques for a modern cafe in areas such as barista, pastry and bakery preparation, scratch soups and stocks, and front of the house training including learning industry software. These areas will be experienced in a working cafe/bistro, as this class will allow students to work in realistic experiences and integrate techniques learned prior into a business concept.

BAKING-106 Credits: 2
Cafe Operations 2
The course will show students techniques utilizing methods presented in prior classes. Students learn to create sandwiches and seasonal fresh salads using recipes and techniques used in bread classes and basic culinary scratch cooking. These techniques are implemented into a menu in a working bistro. Students will also experience creating composed desserts and pastries to order in a pastry bar format. Students will see a complete overview of how to manage customer service, the dining room and kitchen.

BAKING-111 Credits: 2
Advanced Pastry Arts – Part 1
Provides students with comprehensive hands-on experience in pastry arts and decorative baking. Students will obtain the practical and theoretical training necessary to produce quality bakery products from scratch. An emphasis is placed on decorative pastry arts including cake decorating, basic sugar and chocolate work, gum paste, decorative breads, European style pastries, ethnic breads and rolls. Students learn all aspects of pastry techniques from product design to appropriate garnishes. Students will learn both hand-crafted and machine methods in the makeup of these products. This class is designed to offer industry professionals and MATC culinary and baking students a more advanced specialized training in their field. Prerequisite(s): BAKING-102 and BAKING-302.

BAKING-112 Credits: 2
Advanced Pastry Arts – Part 2
Provides laboratory practice in detailed decorative pastries. Students will obtain detailed hands-on training in the study of traditional and modern pastries, with emphasis on scratch baking. Practical experience is gained in organizing preparation procedures, selecting quality ingredients, mixing, scaling, baking, decorating, garnishing, and final presentation of product. Students learn procedures for adjusting recipes and handling products for industry use. Students will learn both hand-crafted and machine methods for small and large scale shops. This class is designed to offer industry professionals and MATC culinary and baking students a more advanced specialized training in their field.

BAKING-119 Credits: 2
Retail Baking Operations
This course is used as a simulated bakery, with products being merchandized through a bakery store front. Students are responsible for the service case presentation as well as effective merchandising displays and customer service. Students will also identify various components of a profit/loss statement researching ingredient cost, learning small business accounting software. Students will also identify labeling requirements according to federal laws.

BAKING-120 Credits: 3
Basic Baking Tech/Bread Baking
Introduces students to the fundamental concepts, skills and techniques of basic baking and yeast dough production. Special emphasis is placed on the study of ingredient functions, product identification, and weights and measures as applied to baking. Students will produce products from scratch, mixes/bases, and frozen laminated doughs. Students will make products such as cookies, bars, muffins, quick breads, yeast breads, cake doughnuts and yeast raised doughnuts, plus seasonal items. Training is given in a retail store setting.

BAKING-121 Credits: 3
Introduction to Bread Baking
Introduces the fundamentals of yeast dough production. Emphasis is placed on the production of different kinds of yeast products with special attention being given to the mixing methods and the control of fermentation. Students will learn techniques to implement yeast dough production and its outcomes; how different ingredients react with others; and how and why ingredients respond to temperature, friction and storage.

BAKING-122 Credits: 3
Baking Principles/Ingredient Functions
In this class, instructors will focus on the primary functions of ingredients in baked goods, with an emphasis on yeast raised dough, sponge dough, straight dough, and modified straight dough methods. Students are exposed to chemical, physical and biological leavening principles, as well as the understanding of the characteristics and functions of baking ingredients. Students will study formulas that work on scientific principles and their outcomes.

BAKING-123 Credits: 3
Cake Decorating, Icing/Pastry Bags
Practical training is offered in color design as applied to cake decorating. Practice is given in executing different tips, icings, and pastry bag usage in a bakery setting. Students are exposed to icing cakes, decorating cakes using butter cream flowers, figure piping and many seasonal products used in a production setting.

BAKING-124 Credits: 3
Scratch Baking
Students will obtain a basic familiarity with primary baking ingredients, have an overview of fermentation and dough production, be aware of the properties associated with producing chemically leavened bakery goods and specialty items, have an appreciation of formula balance, grasp the advantages and limitations inherent in scratch baking, and understand the production flow for various bakery products.

BAKING-125 Credits: 3
Artisan Breads
In this course, you will discover the fine science of bread. You will explore and learn about the reaction of yeast, air and liquid combining to become a living substance. You will be introduced to the characteristics and functions of flour, investigate the effects of flour on flavor, texture and the structures of well-known, classical and artisan breads. These include baguettes, sourdoughs, wheat epi, pumpernickel, focaccia, rye and ciabatta.

BAKING-126 Credits: 3
Individual and Production Pastry
This course will focus on the production, assembly, finishing, and presentation of individual and production pastries. These pastries consist of different combinations of basic batters, fillings, glazes and icings all about 2 1/2 inches in size. Students will produce them using several assembly and finishing methods to include shells, layered pastries, piped free-form, shaped free-form, and shaped and molded pastries.
BAKING-127 Credits: 3
Chocolate, Confections and Sugar Work
This course introduces students to the principles involved in producing a full range of chocolates and candies using a variety of centers including marzipan, ganache, gianduja sugar centers, and jellies. Students learn to use both traditional and contemporary production methods in creating confections by hand and with special equipment. The class includes an introduction to the art of sugar work. Students will learn to properly cook, pour, pull and blow sugar to create artistic showpieces. Design layout and color issues will also be covered.

BAKING-128 Credits: 1
Baking and Classical Cakes
A review of creaming, foaming and blending techniques with an emphasis on preparing simple to complex unfilled cakes, filled cakes and tortes. Topics to be covered include comparison of classical and modern preparations, classical cakes (such as gateaux, St. Honore, Doosh Torte, Linzer Torte, and Sacher Torte), glazed, iced, molded and cream-filled cakes, tortes and bombe.

BAKING-129 Credits: 2
Healthy and Natural Baking
This course studies the combination of the sciences of baking and nutrition. Students learn how to combine ingredients to produce finished products that will meet the criteria of taste and nutrition. Basic nutrition principles are reviewed to help students understand healthy baking. Students also study the chemical reactions taking place during the baking process and the formulas that were used.

BAKING-130 Credits: 1
Field Experience in Baking and Pastry Arts
Students work 216 hours as regular employees in baking and pastry arts. The goal of field experience is to give students the opportunity to apply, on the job, the skills learned in the classroom and lab and obtain a broad overview of an entire facility.

BAKING-135 Credits: 3
Baking for Culinarians
This course is an overview of baking and pastry for culinary students. Students become familiar with baking ingredients, their properties, and the way in which to scale and measure them. Producing everything from breads and rolls to cakes and pastries, students gain an appreciation for the contributions made by bakers and pastry chefs in food service settings. Fundamental culinary principles covered include teamwork, professionalism, timing and organization, and safety and sanitation.

BAKING-301 Credits: 5
Baking Production 1
Training is given in the use of equipment, sanitation, use of frozen dough, bake-off products and seasonal products. Students are in a production setting where they are required to produce set amounts of products in a time frame. Seasonal items and special large-volume projects are assigned. Prerequisite(s): BAKING-301.

BAKING-302 Credits: 5
Baking Production 2
Training is given in the use of equipment; sanitation; use of dry mixes; breads, cakes and muffins; and scaling and shaping of products. Students are in a production setting where they are required to produce set amounts of products in a time frame. Seasonal items and special large-volume projects are assigned. Prerequisite(s): BAKING-301.

BAKING-303 Credits: 5
Baking Production 3
This is a practical shop course. Training is given in the use of equipment, sanitation, and also the scaling, mixing, shaping, and handling of scratch bakery products. Students are in a production setting where they are required to produce set amounts of products in a time frame. Seasonal items and special large-volume projects are assigned. Prerequisite(s): BAKING-302.

BAKING-304 Credits: 5
Baking Production 4
This is a practical shop course. Training is given in the use of equipment and sanitation; all products (frozen, mixes, scratch) are used in this lab. Students are in a production setting where they are required to produce set amounts of products in a time frame. Seasonal items as well as special large-volume projects will be assigned. Prerequisite(s): BAKING-303.

BAKING-310 Credits: 1
Cake Decorating, Icing, Pastry Bags 1
Practical training is offered in Level 1 of color design as applied to cake decorating. Practice is given in executing different tips, icings and pastry bag usage in the bakery setting. Seasonal items and production items also will be prepared. Prerequisite(s): BAKING-300.

BAKING-311 Credits: 1
Cake Decorating, Icing, Pastry Bags 2
Practical training is offered in Level 2 of color design as applied to cake decorating. Practice is given in executing different tips, icings and pastry bag usage in the bakery setting. Seasonal items and production items are prepared. Prerequisite(s): BAKING-310.

BAKING-312 Credits: 1
Cake Decorating, Icing, Pastry Bags 3
Practical training is offered in Level 3 of color design as applied to cake decorating. Practice is given in executing different tips, icings and pastry bag usage in the bakery setting. Seasonal items and production items are prepared. Prerequisite(s): BAKING-311.

BAKING-313 Credits: 1
Cake Decorating, Icing, Pastry Bags 4
See INFOline for course description. Prerequisite(s): BAKING-312.

BAKING-314 Credits: 1
Cake Decorating/Icing/Pastry Bags 5
This course gives students hands-on practice with advanced cake decorating and decorative pastry work. Students will learn to construct and ice wedding cakes, and learn about portion and design. Advanced modeling is done in gum paste and rolled fondant designs, and also advanced wedding cake assembly and decorating.

BAKING-321 Credits: 1
Frozen Dough Bake-Off
Students will learn to understand the basic advantages and limitations of a bake-off operation; know how to properly inventory, order, receive and store frozen dough products; understand the five basic steps for using frozen dough; grasp the importance of utilizing frozen bakery products; understand the fundamentals of proper preparation for the sale of frozen baked products; and comprehend the process of freezing, its advantages and liabilities, customer questions and suggestion selling.

BAKING-322 Credits: 1
Mixes/Bases
Students will learn to perceive the differences between mixes and bases; know each system’s benefits and drawbacks; comprehend the flexibility or lack of flexibility in various mixes and bases; understand the need to control product staling and spoilage; comprehend the basic causes of the loss of product freshness; understand the methods utilized to assure retention of freshness and understand the purpose of merchandising techniques in service cases, self-service displays and consolidation.

BAKING-323 Credits: 1
Scratch Baking
Students will obtain a basic familiarity with primary baking ingredients, have an overview of fermentation and dough production, be aware of the properties associated with producing chemically leavened bakery goods and specialty items, have an appreciation of formula balance, grasp the advantages and limitations inherent in scratch baking, and understand the production flow for various bakery products.

BAKING-324 Credits: 1
Bakery Management
Students learn the importance of training and team building, comprehend the basic technique of product costing and profit determination, familiarity with concepts of scheduling personnel and production, the need for and control of inventory, and understand the importance of product labeling and correct labeling procedures.
BAKING – BARCOS

DEGREE/DIPLOMA COURSE DESCRIPTIONS

BAKING-330 Credits: 1
Bakery Systems
Students will learn to appreciate the differences among the five basic systems, know the advantages and limitations of each system type, contrast levels of equipment and labor inherent in each system, understand the basic usage of major equipment and the important operating parameters of each equipment type, understand the use of promotions to stimulate sales and the function of specialty theme promotions, and be aware of monthly promotional concepts.

BAKING-331 Credits: 1
Baking Internship
This course provides an opportunity to gain on-the-job training related to the Baking Production program. The activities will be coordinated between the baking industry and the student by the MATC coordinating instructor. Prerequisite(s): Completion of or currently enrolled in BAKING-304, BAKING-313 and BAKING-324.

BAKING-340 Credits: 3
Professional Baking
Practical laboratory experience in the preparation of professional-quality baked goods. Examine and make frozen/bakeoff, mixes/bases, and scratch bakery products. Use full-scale industry equipment and techniques. Hands-on skills, weight system and makeup procedures. Short-sleeved shirts, aprons and hair restraints are provided.

BARBERING AND COSMETOLOGY

BARCOS-300 Credits: 2
Shampoo and Scalp Treatments
Presents the theory of and practical skills in hair/scalp cleansing techniques, scalp massage therapy and professional products for various hair and scalp conditions, including hair pieces and goods. Students practice shampooing, massage and conditioning techniques during class on classmates and hair goods.

BARCOS-301 Credits: 2
Men's Haircut 1
Introduces the basic fundamental skills and related theory of men's hairstyling techniques, including the use of shears and clippers. The theory of shaving is presented. Students practice cutting tapers, fades, natural afros and other haircuts on mannequins, models and hair goods.

BARCOS-302 Credits: 2
Women's Haircut 1
Introduces the theory of and related practical skills for cutting women's hair using shears and razor. Thinning techniques are presented. Students practice hair cutting and thinning techniques on mannequins, available models and hair goods.

BARCOS-303 Credits: 2
Men's Haircut 2
This course offers advanced men's hairstyling techniques and methods using shear-over-comb and clipper techniques. Students practice hairstyling skills on available models and classmates. MATC strongly recommends that students complete BARCOS-301, or have the equivalent skills, prior to enrollment in this course.

BARCOS-304 Credits: 2
Permanent Wave
Introduces the theory of and practical skills for permanently curling/waving naturally straight or wavy hair. Students practice winding permanent wave rods in sectioning patterns with chemical application on a mannequin and available models.

BARCOS-305 Credits: 2
Women's Haircut 2
Offers advanced women's hairstyling techniques and methods to create haircuts with varying types of guidelines, weight lines, bangs and fringes. Speed and efficiency are encouraged. Students practice hairstyling skills on available models and classmates. MATC strongly recommends that students complete BARCOS-302, or have the equivalent skills, prior to enrollment in this course.

BARCOS-306 Credits: 2
Facial Massage and Cosmetic Art
Introduces the theory of and practical skills in skin care, such as massage techniques, cosmetics, make-up application and correction, and eyebrow shaping. Students practice skills on classmates.

BARCOS-307 Credits: 2
Nail Services
Introduces the theory of and practical skills in manicuring and pedicuring, including nail art and massage of the arm/hand and foot/leg. Students practice giving manicures and pedicures on classmates.

BARCOS-308 Credits: 2
Chemical Relaxing
Introduces the theory and practical skills for chemically relaxing naturally curly hair for first-time and retouch applications. Students practice application techniques on mannequins and available models.

BARCOS-309 Credits: 2
Hair Color Correction
This course provides an opportunity to gain on-the-job training related to the Baking Production program. The activities will be coordinated between the baking industry and the student by the MATC coordinating instructor. Prerequisite(s): Completion of or currently enrolled in BAKING-304, BAKING-313 and BAKING-324.

BARCOS-310 Credits: 2
Hairlightening Services
Introduces the theory of and practical skills for removing natural haircolor using hairlightening services. Students practice hairlightening techniques with cap and weaving hairlightening and freehand techniques on mannequins, available models and hair goods. MATC strongly recommends that students complete BARCOS-310, or have the equivalent skills, prior to enrollment in this course.

BARCOS-311 Credits: 2
Advanced Color
This course presents the advanced practical skills for removing natural haircoloring using hairlightening services. Students practice hairlightening techniques with cap and weaving hairlightening and freehand techniques on mannequins, available models and hair goods. MATC strongly recommends that students complete BARCOS-310, or have the equivalent skills, prior to enrollment in this course.

BARCOS-312 Credits: 2
Hair Color Correction
This course provides for the expansion of practical skills required for lightening hair by retouch and first-time processes; successful hair color correction is addressed. Students observe real-life hair lightening and color corrections and practice on models and mannequins. MATC strongly recommends that students complete BARCOS-312, or have the equivalent skills, prior to enrollment in this course.

BARCOS-313 Credits: 2
Hairdresser
Introduces the artistic foundations in theory, and practical wet hair styling in roller placement, hair wrapping, blow drying, thermal pressing and thermal iron curling. Students practice developing skills on mannequins, hair goods and classmates.

BARCOS-314 Credits: 2
Hair Braiding
Presents wet hair styling theory and practical skills for fingerwaving and pincurling. Students practice various pincurling and fingerwaving patterns on mannequins, available models and hair goods.

BARCOS-315 Credits: 2
Advanced Style
Offers advanced techniques in long hair design, such as updos and braids, including French twist, Gibson, French braids and inverted French braids. Students practice on mannequins, available long hair models and hair goods.

BARCOS-316 Credits: 2
Barber/Cosmetology Theory
Presents foundational theoretical concepts in microbiology and decontamination, general chemistry, micro-hair structure and anatomy as related to the profession. Students participate in large and small group activities, individual work in class activities and/or online.

BARCOS-317 Credits: 2
Barber/Cosmetology Lightening/Wig Theory
This course presents the theory related to practical subjects: hair lightening and color correction, wigs and hair goods, electricity and light therapy. Students participate in small and large group activities, in class and internet assignments.

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BArCoS-319 Credits: 1
Natural Hair Care and Braiding
Students learn how to care for natural, curly/extremely curly textured hair, the history of African hair braiding, and basic braiding techniques; and apply skills learned on manikins and available models.

BArCoS-320 Credits: 1
Client Services 1
This course offers opportunities for professional practice of developing skills in a salon-like environment. Students shampoo, cut, condition, color, roller set and blow dry/iron curl and thermal press client hair under the direction of the classroom instructor. Students gain receptionist skills. Sanitation and safety are stressed. MATC strongly recommends that students complete BArCoS-300, BArCoS-301, BArCoS-304, BArCoS-309, BArCoS-310, BArCoS-314 and BArCoS-315, or have the equivalent skills, prior to their enrollment in this course.

BArCoS-321 Credits: 1
Hair Extensions
Students learn how to add hair extension to hair and to braided styles, and apply skills learned on manikins and available models.

BArCoS-322 Credits: 2
Barber/Cosmetology Theory 5
Students learn electricity and light therapy, anatomy and physiology, cells and their structure and function, and law. The final portion of this class is the review for the practical and written phases of the State Board Exam. MATC strongly recommends that students complete BArCoS-321, or have the equivalent skills, prior to enrollment in this course.

BArCoS-323 Credits: 1
Client Services 2
This course offers students the opportunity to practice and advance professional skills as learned in the classroom. Students practice specific professional skills on clients in a salon-like environment under the direction of the classroom instructor. Students perform receptionist duties. Sanitation and safety are stressed. MATC strongly recommends that students complete BArCoS-300, BArCoS-301, BArCoS-304, BArCoS-309, BArCoS-310, BArCoS-314 and BArCoS-315, or have the equivalent skills, prior to enrollment in this course.

BArCoS-324 Credits: 1
Business Skills for Barber/Cosmetologists
Introduces verbal and nonverbal communication concepts with emphasis on professional writing and speaking skill development. Students write a résumé, make presentations, practice job interviewing and make positive public contacts.

BArCoS-326 Credits: 1
Client Services 3
This course offers students the opportunity to practice and advance professional skills as learned in the classroom. Students practice specific professional skills on clients in a salon-like environment under the direction of the classroom instructor. Students perform receptionist duties. Sanitation and safety are stressed. MATC strongly recommends that students complete BArCoS-300, BArCoS-301, BArCoS-304, BArCoS-309, BArCoS-310, BArCoS-314 and BArCoS-315, or have the equivalent skills, prior to enrollment in this course.

BArCoS-327 Credits: 1
Client Services 4
This course offers students the opportunity to practice and advance professional skills as learned in the classroom. Students practice specific professional skills on clients in a salon-like environment under the direction of the classroom instructor. Students perform receptionist duties. Sanitation and safety are stressed. MATC strongly recommends that students complete BArCoS-300, BArCoS-301, BArCoS-304, BArCoS-309, BArCoS-310, BArCoS-314 and BArCoS-315, or have the equivalent skills, prior to enrollment in this course.

BArCoS-328 Credits: 1
Client Services 5
This course offers students the opportunity to practice and advance professional skills as learned in the classroom. Students practice specific professional skills on clients in a salon-like environment under the direction of the classroom instructor. Students perform receptionist duties. Sanitation and safety are stressed. MATC strongly recommends that students complete BArCoS-300, BArCoS-301, BArCoS-304, BArCoS-309, BArCoS-310, BArCoS-314 and BArCoS-315, or have the equivalent skills, prior to enrollment in this course.

BArCoS-329 Credits: 1
Basic Artificial Nail Concepts
Offers the advanced theory of and practical skills development in artificial nail application and removal. Students observe chemical applications and practice on classmates and artificial nails.

BArCoS-330 Credits: 2
Business Management Skills for Barber/Cosmetologists
Introduces the fundamental knowledge required for lawful and effective salon practice and management, including Wisconsin state laws and regulatory rules. Students practice developing skills in large and small group work.

BArCoS-331 Credits: 3
Business Management,
Barber/Cosmetology Manager
This course offers Wisconsin-licensed practitioners, nail technicians and aestheticians leadership and supervision concepts and training principles. Students practice applying concepts in small and large group activities, i.e., discussions, case studies and hypothetical professional salon settings.

BArCoS-332 Credits: 3
Communications, Barber/Cosmetology Manager
This course offers Wisconsin-licensed practitioners, nail technicians and aestheticians leadership and supervision concepts and training principles. Students practice applying concepts in small and large group activities, i.e., discussions, case studies and hypothetical professional salon settings.

BArCoS-333 Credits: 3
Barber/Cosmetology Instructor Techniques – Part 1
This course is designed to develop the knowledge and skills required to teach barbering and cosmetology. It covers communications, adult learning styles, developing lesson plans and presentation styles, using audio-visual equipment, and questioning techniques. Emphasis is placed on the development and presentation of state Board lesson plans as well as time outside of course hours for observation. Basic computer skills are required. A valid Wisconsin Barber/Cosmetology manager’s license or practitioner’s license for a minimum of two years is required. Prerequisite(s): Satisfactory MATC placement test score.

BArCoS-334 Credits: 3
Barber/Cosmetologist Instructor Techniques – Part 2
Instruction focuses on development of evaluation tools for classroom use, analyzing and development of classroom management techniques, the use of copyright laws in developing educational material, and writing a résumé and cover letter. The safe use of products and chemicals used in the industry/classroom is studied and stressed. The student will develop theory and practical lesson plans to present in the classroom under the supervision of a licensed instructor. Prerequisite(s): BArCoS-333.

BArCoS-335 Credits: 3
State Board Review
Presents a review of the theory and practical skills acquired throughout the program. Prepares students for successful completion of the Barbering and Cosmetology Wisconsin professional licensing exam. Students pack an exam kit, work through a mock examination and complete a school final theory exam.
BArCoS – CABMil DEGREE/DIPLOMA COURSE DESCRIPTIONS

BArCoS-336 Barber Theory 1 Credits: 1
Presents the theory in sterilization, sanitation, disinfection, laws and rules, and professional ethics as it relates to the barber profession. Students participate in individual, group and online activities. Prerequisite(s): Student must be admitted to the Barber program (31-502-5).

BArCoS-337 Barber Haircut 1 Credits: 2
Introduces basic fundamentals and related theory of core barber haircutting skills, including the proper use and care of cutting equipment. Students practice on mannequins and models. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-338 Barber Chemical Services 1 Credits: 1
Presents techniques for relaxing and texturizing naturally curly hair. Retouch, virgin and freehand applications are stressed. Students practice on mannequins and available models. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-339 Client Services Externship Credits: 2
Provides an opportunity for the student to gain real-life client service experience in a professional salon. Students work as interns in professional salons under the direction of salon managers and attend seminars throughout the course with the course instructor. MATC strongly recommends that students complete BArCoS-335, or have the equivalent skills, prior to enrollment in this course.

BArCoS-340 Manicuring Theory Credits: 4
Students who wish to qualify to take the state manicurist license examination must take this course. Instruction focuses on theory relating to law, nail and skin disorders, manicuring and pedicuring, safety and sanitation, anatomy and physiology, and business and record management.

BArCoS-341 Shaving/Facials Credits: 2
Introduces the theory and practical skills of male facials and shaving with a straight-edge razor. Proper technique and safety are stressed. Students practice on mannequins, classmates and available models. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-342 Manicuring Practicum 1 Credits: 4
This course provides the theoretical component related to manicuring, pedicuring, tip application, fabric wrap application, acrylic application, consultation, UV gel application and nail art. Students observe and simulate these chemical applications on artificial nails and classmates. MATC strongly recommends that students complete BArCoS-340, or have the equivalent skills, prior to enrollment in this course.

BArCoS-343 Manicuring Practicum 2 Credits: 4
This course offers professional skill development in basic and artificial nail applications in a salon-like setting. Students practice manicuring, pedicuring, tip fabric, acrylic and UV gel applications on clients under the direct supervision of the classroom instructor. MATC strongly recommends that students complete BArCoS-340, or have the equivalent skills, prior to their enrollment in this course.

BArCoS-344 Barber Theory 2 Credits: 1
Presents theory related to wet and thermal styling, permanent waving, relaxing and tinting. Client consultation is also covered. Students participate in individual, group, and online activities. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-345 Barber Haircut 2 Credits: 2
Students enhance skills learned in Barber Haircut 1. Beard trimming and razor haircutting is introduced, and speed and efficiency are encouraged. Students practice on mannequins and available models. Prerequisite(s): BArCoS-337.

BArCoS-346 Barber Chemical Services 2 Credits: 1
Introduces wrapping and application procedures for the permanent wave service. Students practice sectioning and winding permanent rods on mannequins. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-347 Barber Hairstyling 1 Credits: 1
Presents various techniques for basic thermal styling using the blow dryer, curling iron and flat iron. Proper parting and sectioning are stressed. Students will practice on mannequins and available models. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-348 Introduction to Client Services Credits: 1
Introduces students to the barber/stylist environment. Students practice barbering skills under the guidance of a licensed instructor. Receptionist duties, people skills and professionalism are also studied. Prerequisite(s): BArCoS-337, BArCoS-338 and BArCoS-341.

BArCoS-349 Barber Haircut 3 Credits: 1
Students hone skills previously learned in Barber Haircut courses. Clipper designs, afros, fauxhawks and current trends are also covered. Students practice on mannequins, classmates and available models. Prerequisite(s): BArCoS-337 and BArCoS-345.

BArCoS-350 Barber Chemical Services 3 Credits: 2
Introduces various application procedures for oxidative and non-oxidative tints. Highlighting and bleaching techniques are also covered. Students practice on mannequins and available models. Prerequisite(s): Must be admitted to the Barber program (31-502-5).

BArCoS-351 Barber Hairstyling 2 Credits: 1
Students enhance skills learned in Barber Hairstyling 1. Wet styling techniques are also introduced. Students practice roller sets, pin curls and fingerwaves on mannequins. Prerequisite(s): BArCoS-347.

BArCoS-352 Barber State Board Review Credits: 2
Presents a review of the theory and practical skills acquired throughout the program. Prepares students for successful completion of the Wisconsin Barber licensing exam. Students pack an exam kit, take a mock practical exam and complete a final theory exam.

CABINETMAKING AND MILLWORK

CABMil-300 Machine Maintenance/Jigs and Fixtures Credits: 2
This course consists of adjusting and maintaining woodworking machinery such as wide-belt sanders, planers, shapers, and band and circular saws.

CABMil-303 Woodworking 1 Credits: 5
Students are introduced to the methods of processing materials using various types of woodworking equipment. An intensive safety program is incorporated into the development and completion of projects. Teamwork is emphasized in the coordination and production of group projects. Organizational skills are developed to prepare students for performance efficiency and quality standards.

CABMil-304 Woodworking Fundamentals Credits: 3
This course is designed to provide students with woodworking fundamentals. These include safe operating procedures of woodworking machines, types of wood, adhesives, gluing techniques and preparing wood for construction.

CABMil-305 Woodworking 2 Credits: 5
Students are involved in advanced cabinetwork and millwork techniques used to produce architectural millwork and cabinets. Metric units of measurement are used to fabricate 32mm system casework.

For more information: matc.edu or 414-297-MATC. Page 198
Students learn to set up, run and troubleshoot equipment necessary to produce exacting work. This course will prepare the student for an entry-level position in a modern architectural millwork or cabinet shop. Prerequisite(s): CABMIL-303.

CABMIL-306  
**Credits: 3**  
**Advanced Woodworking**
This course is designed to provide students with the skills associated with advanced cabinetworking techniques. Subjects covered include cabinet construction, case construction and 32mm construction. Setup and safe operation of woodworking equipment are also emphasized. Prerequisite(s): CABMIL-303.

CABMIL-340  
**Credits: 2**  
**Millwork for Carpenters**
This course is designed to teach students skills ranging from the basic operations of woodworking machines to the construction of cabinets. Related information is included on window and door units and the application of plastic lamination for countertops. Prerequisite(s): Admission to the Carpentry program (31-410-1).

CABMIL-341  
**Credits: 2**  
**Millwork Techniques**
This advanced-level course is a continuation of the course Millwork for Carpenters. The purpose is to advance the student's skill and knowledge of woodworking and cabinetworking. Prerequisite(s): CABMIL-340.

CABMIL-355  
**Credits: 1**  
**Materials and Construction**
Students become familiar with the current materials used in making cabinets. Emphasis is placed on the various types of application and installation of traditional and modern door hinges and drawer hardware.

CABMIL-383  
**Credits: 2**  
**Quantity Survey 1**
Students are given instruction in identifying dimensions and quantities of parts from furniture and residential woodwork blueprints. Also discussed in class are planning, routing and cost estimation procedures. Prerequisite(s): CABMIL-303, CABMIL-355, CARP-380.

CABMIL-385  
**Credits: 2**  
**Cabinet Detailing**
This course provides students with the opportunity to learn how to read blueprints. This includes floor plans, elevations, sectional and detailed drawings. In addition, basic skills in sketching and drawing are developed. Students will learn how to use basic sketches and drawings in the shop and to communicate with the customer. Prerequisite(s): Completion of or currently enrolled in CABMIL-355.

CABMIL-386  
**Credits: 2**  
**Cabinet Layout**
Students develop working and detailed drawings that are used in the shop to produce cabinetry or millwork. Conventional methods used to create drawings are explored to enhance comprehension of the information contained within them. Cut lists and materials lists are then developed from the drawings. Students will make full-sized layouts of their drawings. Prerequisite(s): CABMIL-385.

**CARPENTRY**

**CARP-301  
**Credits: 5**  
**House Framing**
This is a practical course that includes the development of skills in the use and care of carpenter hand tools and portable machines. The fundamental principles of layout and erection of floor decks and walls are practiced in the shop. Prerequisite(s): Admission to Carpentry program (31-410-1).

**CARP-302  
**Credits: 1**  
**OSHA/First Aid**
First aid according to the Red Cross and the U.S. Occupational Safety and Health Administration guidelines will be covered in this course. Prerequisite(s): Admission to the Carpentry program (31-410-1).

**CARP-303  
**Credits: 5**  
**Roof Framing**
This course gives the student practical experience in the layout, cutting and erection of rafters for gable, hip, intersection and gambrel roofs. Layout of equal- and unequal-pitch roofs is included along with framing of dormers and roof openings.

**CARP-304  
**Credits: 3**  
**House Framing Fundamentals**
This course is designed to provide students with the fundamental skills associated with house construction. Subjects covered include safe operating procedures associated with power saws, hand tools, residential house construction techniques, types of wall framing and structural components. Prerequisite(s): Admission to Carpentry program (31-410-1).

**CARP-306  
**Credits: 5**  
**Exterior and Interior Finishing**
Exterior finishing is covered through installation of different types of exterior sidings, trim and window and door units. Interior trim and hardware installation are practiced, along with the layout, fitting and assembly of various wood projects. Prerequisite(s): CARP-301.

**CARP-351  
**Credits: 1**  
**Building Materials**
The characteristics, manufacture and uses of essential materials and supplies employed in several branches of the construction trades are presented. Such topics as physical properties of wood, defects in lumber, shrinkage and warp, lumber grades and sizes, hardware and insulation are covered. Prerequisite(s): Admission to the Carpentry program (31-410-1).

**CARP-380  
**Credits: 1**  
**Arithmetic for Carpenters**
The subjects of linear, board, square, angular measurements and square root are presented. Students are given practical and working knowledge of mathematics used in carpentry, and in estimating and recording material supplies. Prerequisite(s): Admission to the Carpentry program (31-410-1).

**CARP-383  
**Credits: 2**  
**Quantity Survey**
This is an estimating course for students in the building trades. It covers the "taking off" of carpentry materials including girders, posts, studs, rafters, roof sheathing, shingles, interior trim and drywall. Prerequisite(s): CARP-380.

**CARP-385  
**Credits: 2**  
**Blueprint Reading 1**
A fundamental course in sketching and blueprint reading designed to help carpenters express themselves and interpret plans on the job. It includes sketching objects using straight and curved lines. Isometric, oblique and orthographic views and methods of dimensioning are covered. Prerequisite(s): Admission to the Carpentry program (31-410-1).

**CARP-387  
**Credits: 1**  
**Commercial Blueprint Reading**
A course in general construction, specifications, heavy construction and commercial blueprint reading and sketching. Emphasis is placed on the structure of typical buildings of different types and on developing communication skills in the reading of plans and specifications. Prerequisite(s): CARP-385.

**CREATIVE ADVERTISING**

**CAS-125  
**Credits: 3**  
**Concept Development 1 – Original Ideas**
The student will explore the creative environment and develop original ideas/solutions to answer client problem(s). Students will experience the dynamic of the collaborative process through creative teams and the creative studio environment.

**CAS-126  
**Credits: 3**  
**Creative Advertising**
This course surveys the history of media forms and communication technologies, charting the historical trajectory from the alphabet to the internet. It explores mediation in and across time and the emergence and development of different media forms in relation to particular social, economic, perceptual, and technological conditions and historical moments.
CAS – CHEMT

DEGREE/DIPLOMA COURSE DESCRIPTIONS

CAS-127 Credits: 3
Ethical Guidelines Usage/Copyright
This course will examine the ever-shifting guidelines of copyright and ethics in the creative industry. Case studies and discussion exploring licensing and ownership of original composition and image content will be thoroughly covered.

CAS-137 Credits: 3
Concept Development 2 – Advanced Concepts
A continuance of Concept Development 1, this course is an advanced concept building environment, where the strategist further considers the various methods and media choices to communicate original concepts. Students will produce advanced project-based assignments.

CAS-141 Credits: 3
New Media Strategies
Students will explore new media concepts including social media, seed marketing, email marketing and search marketing.

CAS-142 Credits: 3
Guerrilla and Viral Methods
This course examines the elements of surprise that carry tremendous weight, both as a tool for retention and word of mouth transference. This course studies the pros and cons of guerrilla and viral methods, through case study and real-life project application.

CAS-143 Credits: 3
User Experience – UE 2.0
This course focuses on User Experience (UE) in determining the level of successful communication and retention realized by the consumer and client, whether it be web interface, exhibit design, 3D environment, mobile platform, etc.

CAS-144 Credits: 3
Project Parameters and Proposals
Focuses on the production of a single ad concept to an entire multi-faceted campaign. Additionally, this course will look at the parameters of a project as it relates to the client’s expectations and industry process. Recognizing the challenges of keeping the client both educated and informed about the project development is also covered in depth.

CAS-146 Credits: 4
CAS Design Portfolio
The diversity and caliber of each student’s work is assessed, packaged and presented through this course. Students prepare professional-level work, which demonstrates both skill sets and abilities on par with industry expectations. The finished portfolio is utilized to market themselves in the workplace via both traditional and digital methods. CAS portfolio students are additionally required to interview with a minimum of three external ad agencies and/or design studios prior to course completion. Participation in an annual portfolio exhibit is also required.

CAS-147 Credits: 3
Methods of Communication
This course is a study of current trends in advertising and marketing communications, as well as a studied view into the crystal ball, identifying the future of the creative industry and the many areas of specialization within the discipline.

CAS-148 Credits: 3
Campaign Exploration
Exploring the power of continuity in design and communication as it pertains to message focus jointly by faculty and clients, all projects’ outcomes are assessed on par with industry expectations.

CHEMICAL TECHNOLOGY

CHEMT-101 Credits: 2
Chemical Laboratory/Process Safety
This course develops the knowledge and skills required to work safely in the chemical laboratory. Among the topics included are the history and application of state and federal regulations pertaining to the workplace, recognition and reduction of chemical and physical hazards, manipulation of glassware and laboratory equipment, handling compressed gas cylinders, and personal protective equipment and practices. Certified Cardiopulmonary Resuscitation for professional rescuers and first aid training are included. Prerequisite(s): Take NATSCI-710, NATSCI-211, SCIHS-705, SCIPH-705 or NATSCI-903; minimum grade C. Or NATSCI-710, NATSCI-211, SCIHS-706, SCIPH-706 or NATSCI-904; minimum grade C.

CHEMT-103 Credits: 2
Introduction to Chemical Technology
Students are introduced to chemical technology and will learn the fundamental skills needed for working safely and productively in the chemical laboratory. The proper procedures and methods for recording, manipulating and applying data are noted. Measurement of intensive and extensive physical properties of materials using common laboratory instruments is stressed. Spectroscopy and chromatography are introduced.

CHEMT-105 Credits: 3
Introduction to Instrumental Methods
This course presents the learner with the opportunity to become familiar with the basic uses and operation of modern analytical instrumentation. Real samples will be analyzed using gas and liquid chromatographs. Optical instruments include UV-visible, atomic, atomic emission and fluorescence spectrometers.

CHEMT-106 Credits: 5
Instrumental Methods of Analysis
Instrumental analysis examines the design, construction and use of modern chemical analytical instruments. Topics include absorption and emission spectroscopy, gas and liquid chromatography and electrochemical methods. Prerequisite(s): NATSCI-215 or CHEMT-115.

CHEMT-107 Credits: 2
Industrial Methods of Analysis
Tests and analyses similar to those employed in industry are used to determine the characteristics of raw materials and finished products. Standard and official methods as outlined by ASTM, AOAC, FCC, etc., are used in the testing of petroleum products, metals, ores, foods, soaps and detergents and water. Instrumental and classical methods are used. Prerequisite(s): CHEMT-105 with a minimum grade of C.

CHEMT-109 Credits: 3
Chemical Processes
Focuses on the role, structure and operations of industrial chemical laboratories. The work, responsibilities and functions of the various business activities are examined from the perspective of a technician working in research and development or a technical service laboratory. Prerequisite(s): CHEMT-115 or NATSCI-215 with a minimum grade of C.

CHEMT-111 Credits: 5
General Chemistry 1
A study is made of the basic principles of modern chemistry, correlating atomic structure, the theories of chemical bonding and the structure and reactivity of matter. Laboratory work is included and demonstrates the principles discussed.

CHEMT-112 Credits: 5
General Chemistry 2
A study is made of kinetics, equilibria, thermodynamics, nucleonics, coordination chemistry, electrochemistry and topics in organic and biochemistry. Qualitative analysis is emphasized in the laboratory course. Prerequisite(s): CHEMT-111 or NATSCI-211 with a minimum grade of C.

CHEMT-115 Credits: 5
Quantitative Analysis
A study is made of the general principles of volumetric and gravimetric analysis, acidimetry and alkalimetry, redox process, solubility equilibria, complexation titrations, and optical and electromagnetic methods. The evaluation of analytical data is stressed. Laboratory work is included. Prerequisite(s): CHEMT-112 or NATSCI-212 with a minimum grade of C.

For more information: matc.edu or 414-297-MATC. Page 200
CHEMT – CHilDD

CHEMT-116 Credits: 5
Instrumental Analysis
This course examines the design, construction, and use of modern chemical analytical instruments. Topics include absorption and emission spectroscopy, gas and liquid chromatography, and electrochemical methods. Prerequisite(s): CHEMT-115 or NATSCI-215 with a minimum grade of C.

CHEMT-117 Credits: 3
Organic Chemistry 1
Lecture topics include the principles of bonding, stereochemistry, mechanisms, kinetics and spectrometry applied to aliphatic and aromatic hydrocarbons and simple mono-functional organic molecules. Prerequisite(s): CHEMT-112 or NATSCI-212 with a minimum grade of C.

CHEMT-118 Credits: 3
Organic Chemistry 2
A second semester course in Organic Chemistry that builds upon concepts learned in CHEMT-117. Spectroscopy and the chemistry of oxygen containing compounds are emphasized. Prerequisite(s): NATSCI-217 or CHEMT-117 with minimum grade of C.

CHEMT-119 Credits: 2
Organic Chemistry Laboratory 1
Laboratory work focuses on the synthesis and purification of organic compounds illustrating reaction mechanisms. Prerequisite(s): NATSCI-217 or CHEMT-117 with a minimum grade of C.

CHEMT-120 Credits: 2
Chemical Technology Co-Op
This course provides an opportunity to gain on-the-job training related to the Chemical Technician program. The activities will be coordinated between industry and the student by the lead instructor of the program. Prerequisite(s): Consent of instructor is required to enroll in this course.

CHEMT-122 Credits: 3
Survey of Polymer Science
This course offers a survey of the different aspects of polymer science including polymer synthesis, polymer properties and physical testing of polymers. The course emphasizes the various applications of polymers including coatings, adhesives, plastics, impact modifiers and elastomers. Prerequisite(s): CHEMT-112 or NATSCI-212.

CHEMT-125 Credits: 1
Principles of Gas Chromatography
This course is designed for practicing chemical technicians and others interested in gas chromatography. Topics include theory of gas chromatography, hardware, software, and practical applications.

CHEMT-130 Field Studies in Water Chemistry
Students will collect and stabilize lake and river water samples, conduct field and laboratory analysis following approved methodology and chemical safety. The course will cover routine laboratory measurement (such as pH, titration, water hardness) as well as advanced chromatography and spectroscopy instrumentation.

CHILD DEVELOPMENT

CHILDD-101 Infant/Toddler Credential Capstone
This course will culminate the first three courses of an Infant Toddler State Registry Credential. The course will examine the appropriateness of early childhood environments along with the developmental stages of children birth-36 months. Curriculum planning with respect to different family cultures will be explored. The application of this course will be to develop an infant/toddler portfolio that could be submitted to the Wisconsin State Registry commissioner for validation of the Infant Toddler Credential. Prerequisite(s): CHILDD-151.

CHILDD-102 Preschool Capstone
This course will culminate the Preschool Credential. The capstone course is not part of the associate degree program, but is necessary to support the student during the portfolio development process and emphasize some important themes from the prior five courses. The capstone class examines the appropriateness of developmental activities that support children 3 years to 6 years of age. The application of this course will be to develop a preschool portfolio that will be submitted to the Wisconsin State Registry commissioner for validation of the Preschool credential. Prerequisite(s): CHILDD-148, CHILDD-167, CHILDD-178, CHILDD-179, CHILDD-188.

CHILDD-103 Foundations in Afterschool Development
This first course provides an overview of the knowledge and skills individuals need to care for school-age children between the ages of 5 and 12 in a group setting. It will provide a foundation for the importance of out-of-school-time programs and explore the philosophy and goals for high quality programs. It is based on an understanding of the principles of child growth and development. It provides an overview of the rules and regulations governing group care for school-age children and the responsibilities of the providers. (This course also fulfills the 40-hour introduction to the School-Age Care Profession course).

CHILDD-104 Engaging Youth in Groups
This course explores the dynamics of working with children in group settings. It looks at the development of relationships between staff and children, between children and how our working knowledge of children supports their engagement and informs our strategies for positive behavior guidance.

CHILDD-105 Intentionality in Programming
This course focuses on the learning environment and curricular models within an informal learning environment. It will explore the role and methods for informal observation and recording as it is used in identifying the needs and interests of the children. It will explore lesson planning that is intentional, scaffolds learning and addresses core standards.

CHILDD-106 Site Programming and Operations
This course will deepen the understanding of creating a comprehensive program and will explore the use of self and program assessment tools. It will look at the importance of developing partnerships with the family, school and community and the meaning of professionalism. It will look at risk management from the perspective of the health, safety and well-being of the children.

CHILDD-117 ECE: Credit for Prior Learning
This course examines the student’s early childhood professional experience for the purpose of receiving credit for prior learning. The course competencies include: access needed support services on campus and online, analyze professionalism in the early childhood field, identify core abilities, identify what a competency is within a course, examine the courses and the outcomes of the WTCS Early Childhood Education program, analyze performance assessment, compare professional experience with early childhood competencies, compile materials for performance assessment of the course(s), and determine the plan of action for program completion.

CHILDD-120 Administration/Supervision in Early Childhood Programs: Roles and Responsibilities
This is the first of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start programs, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs.

For more information: matc.edu or 414-297-MATC.
CHILDD-121 Credits: 3
Operations Management in Early Childhood Programs
This is the second of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs.

CHILDD-122 Credits: 3
Financial Management and Planning
This is the third of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs. This course represents an overview of the roles and responsibilities of administrators of various early care and education programs and the groups with whom they have role relationships, with an emphasis on quality.

CHILDD-123 Credits: 3
The External Environment
This is the fourth of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs. This course covers the external factors and relationships that provide constraints and opportunities that affect an organization's quality and ability to survive. It includes predicting supply and demand, marketing, licensing and other required regulation, funding, accreditation, and evaluation, collaboration with community organizations and agencies, public policy issues in early care and education, advocacy and working for public policy changes.

CHILDD-124 Credits: 3
Best Practices
This is the fifth of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs. This course covers child care as a family friendly community, integration of child growth and development principles into all aspects of the program, establishing and maintaining quality in the program, developing partnerships with families, multi-cultural and anti-bias approaches in curriculum, materials, activities, relationships, and space design and equipment.

CHILDD-125 Credits: 3
Administrative Seminar
This is the last of six courses designed to prepare participants to receive a credential as a child care administrator. Like the other five courses, it is developed to meet the needs of those who are employed or would like to be employed as administrators in child care programs, Head Start, nursery schools, school-age programs, family child care, child welfare service agencies, public and private schools, and other early care and education programs. This course has a medical focus and covers frequently encountered specialized health conditions with development, summarize types of early childhood education settings, identify the components of a quality early childhood education program, summarize responsibilities of early childhood education professionals, explore early childhood curriculum models.

CHILDD-148 Credits: 3
ECE: Foundations of ECE
Introduction to the early childhood profession. Course competencies include: integration of strategies that support diversity and anti-bias perspectives, investigate the history of early childhood education, summarize types of early childhood education settings, identify the components of a quality early childhood education program, summarize responsibilities of early childhood education professionals, explore early childhood curriculum models.

CHILDD-151 Credits: 3
ECE: Infant and Toddler Development
Students explore infant and toddler development as it applies to an early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, analyze development of infants and toddlers (conception to 3 years), correlate prenatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine research-based models, examine culturally and developmentally appropriate environments for infants and toddlers.

CHILDD-166 Credits: 3
ECE: Curriculum Planning
Examines the components of curriculum planning in early childhood education. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, examine the critical role of play, establish a developmentally appropriate environment, examine caregiving routines as curriculum, develop activity plans that promote child development and learning, develop unit plans that promote child development and learning, analyze early childhood curriculum models. Prerequisite(s): CHILDD-174.

CHILDD-167 Credits: 3
ECE: Health, Safety and Nutrition
Examines the topics of health, safety and nutrition within the context of the early childhood educational setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, follow governmental regulations and professional standards as
they apply to health, safety and nutrition; provide a safe early childhood program; provide a healthy early childhood program; provide a nutritionally sound early childhood program; adhere to child abuse and neglect mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies; incorporate health, safety and nutrition concepts into the children's curriculum.

CHILDD-168 Credits: 3
Group Programming for Infants
Students study information and effective teaching techniques for caring for infants and toddlers in group settings, both center-based and family child care. Course topics include program quality, philosophy, structure, environments, health and safety, developmentally appropriate practice and inclusion/diversity issues.

CHILDD-174 Credits: 3
ECE: Practicum 1
In this practicum course you will learn about and apply the course competencies in an actual child care setting. The course competencies include: document children’s behavior, explore the standards for quality early childhood education, explore strategies that support diversity and anti-bias perspectives, implement activities developed by the co-op teacher/instructor, demonstrate professional behaviors, practice caregiving routines as curriculum, practice positive interpersonal skills with children, and practice positive interpersonal skills with adults.

CHILDD-178 Credits: 3
ECE: Art, Music and Language Arts
Focuses on beginning level curriculum development in the specific content areas of art, music and language arts. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; analyze caregiving routines as curriculum; create developmentally appropriate language, literature and literacy activities; create developmentally appropriate art, music and movement activities.

CHILDD-179 Credits: 3
ECE: Child Development
Examines child development within the context of the early childhood education setting. Course competencies include: analyze social, cultural and economic influences on child development; summarize child development theories; analyze development of children age 3 through age 8; summarize the methods and designs of child development research; analyze the role of heredity and the environment.

CHILDD-187 Credits: 3
ECE: Children With Different Abilities
Focuses on the child with differing abilities in an early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; provide inclusive programs for young children; apply legal and ethical requirements including, but no limited to, ADA and IDEA; differentiate between typical and exceptional development; analyze the differing abilities of children with physical, cognitive, health/medical, communication and/or behavioral/emotional disorders; work collaboratively with community and professional differences; adapt curriculum to meet the needs of children with developmental differences; cultivate partnerships with families who have children with developmental differences.

CHILDD-188 Credits: 3
ECE: Guiding Child Behavior
Examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, summarize early childhood guidance principles, analyze factors that affect the behavior of children, practice positive guidance strategies, develop guidance strategies to meet individual needs, create a guidance philosophy.

CHILDD-192 Credits: 3
ECE: Practicum 2
In this practicum course you will learn about and apply the course competencies in an actual child care setting. The course competencies include: document children’s behavior, explore the standards for quality early childhood education, explore strategies that support diversity and anti-bias perspectives, implement activities developed by the co-op teacher/instructor, demonstrate professional behaviors, practice caregiving routines as curriculum, practice positive interpersonal skills with children, and practice positive interpersonal skills with adults. Prerequisite(s): Admission to the Early Childhood Education program (10-307-1) and CHILDD-197.

CHILDD-194 Credits: 3
ECE: Math, Science and Social Studies
This course focuses on beginning level curriculum development in the specific content areas of math, science and social studies. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, examine the critical role of play, establish a developmentally appropriate environment, develop activity plans that promote child development and learning, and create developmentally appropriate social studies activities. Prerequisite(s): CHILDD-174.

CHILDD-195 Credits: 3
ECE: Family and Community Relations
You will examine the role of relationships with family and community in early childhood education. Course competencies include: implement strategies that support diversity and anti-bias perspectives when working with families and community; analyze contemporary family patterns, trends and relationships; utilize effective communication strategies; establish ongoing relationships with families; advocate for children and families; work collaboratively with community resources.

CHILDD-197 Credits: 3
ECE: Practicum 3
In this practicum course you will learn about and apply the course competencies in an actual child care setting. The course competencies include: assess children's growth and development, implement the standards for quality early childhood education, integrate strategies that support diversity and anti-bias perspectives, building meaningful curriculum, provide a developmentally appropriate environment, facilitate positive guidance strategies, evaluate one's own professional behaviors and practices, lead caregiving routines as curriculum, utilize positive interpersonal skills with children, and utilize positive interpersonal skills with adults. Prerequisite(s): Admission to the Early Childhood Education program (10-307-1) and CHILDD-192.

CHILDD-198 Credits: 3
ECE: Administering an ECE Program
Focuses on the administration of an early childhood education program. Course competencies include: integrate strategies that support diversity and anti-bias perspectives, analyze the components of an ECE facility, design an ECE program, analyze the aspects of personnel supervision, outline financial components of an ECE program, apply laws and regulations that are related to an ECE facility, and advocate for the early childhood profession.

CHILDD-199 Credits: 3
ECE: Practicum 4
You will learn about and apply the course competencies in an actual child care setting. Course competencies include: analyze children’s growth and development based on assessment; integrate strategies that support diversity and anti-bias perspectives; promote professional behaviors and practices; implement meaningful curriculum; create respectful, reciprocal relationships; evaluate early childhood education programs for quality; explore professional options in early childhood education. Prerequisite(s): Admission to the Early Childhood Education program (10-307-1) and CHILDD-197.
CIVIL ENGINEERING TECHNOLOGY

CIVIL-101 Credits: 2
Civil Engineering Drawing
The methods, techniques and equipment used in the civil engineering profession are studied. Drafting principles of geometric construction and orthographic projection are applied. Basic civil engineering drawings are reviewed, including subdivision mapping, plan and profiles, cross sections, and site and grading plans.

CIVIL-102 Credits: 2
Introduction to AutoCAD
This course introduces students to two-dimensional computer drafting. Course content includes: how to draw orthographic views and section views; how to draw entities such as lines, circles and text; how to add dimensions; how to edit drawings; and how to create and use blocks. Both A- and B-size templates are used. The American National Standards are emphasized in line weights, dimensions and appearance.

CIVIL-105 Credits: 2
Computer Applications
Computer applications such as word processing and spreadsheet usage are covered. Calculator methods and programming with the TI-86 scientific programmable calculator are included.

CIVIL-106 Credits: 2
Intermediate AutoCAD
This course is designed to expand the use of 2D AutoCAD. The course will cover advanced editing techniques, the use of multiple scale factors for drawings, attributed blocks, dynamic blocks, the use of xref’s and advanced dimensioning. System variables and basic script files are also studied. Prerequisite(s): CIVIL-102.

CIVIL-107 Credits: 2
Introduction to Microstation
Basic fundamentals of using Microstation software are explored. Drawing, placing, manipulating and modifying elements are covered. Additional topics include drafting aid features, cells, reference files, advanced 2D techniques, dimensioning, annotating and plotting.

CIVIL-108 Credits: 1
Construction Computer Applications
This computer applications course is designed to provide students with word processing, spreadsheet and internet skills. Additionally, the course gives students an opportunity to utilize these skills in a project and presentation.

CIVIL-110 Credits: 2
Introduction to Civil 3D
Instruction for this course includes lecture, demonstration and discussion, and on-campus lab work. Prerequisite(s): CIVIL-102.

CIVIL-132 Credits: 3
Building Estimating
Estimating techniques for civil engineering projects are covered. Students work with checklists, cost records, price lists and labor probabilities, including software usage, to make quantity surveys for material costs, labor costs, equipment costs, and overhead and profit.

CIVIL-135 Credits: 3
Public Works Engineering and Estimating
Basic principles of planning, design, construction and operation of public works facilities such as water, wastewater, solid waste and transportation systems are discussed. Estimating techniques for civil engineering projects are covered.

CIVIL-141 Credits: 4
Statics and Strength of Materials
Principles of static equilibrium are applied to free bodies. Students study the behavior of simple structures under load. The properties of the cross section are determined and used in the analysis of stress, deflection and strain. Compression, tension, shear and bending stresses are analyzed. Prerequisite(s): MATH-115 or MATH-202.

CIVIL-142 Credits: 3
Structures
General structural behavior with respect to live and dead loading, wind loading, earthquake loading and transfer of loads throughout a structure by diaphragms and shear walls are studied. The principles of structural steel, reinforced concrete and timber structures are studied, including the codes of practice for each. Different types of foundations are presented and basic foundation design principles are studied. Prerequisite(s): CIVIL-141.

CIVIL-147 Credits: 3
Soils and Materials Testing
Students gain an understanding of the engineering properties of construction materials and soils. Lab tests are performed on soil, aggregates, concrete and steel. The results of these tests are then used to determine the strengths and weaknesses of each material related to their use in civil engineering. Prerequisite(s): Completion of or currently enrolled in MATH-115.

CIVIL-148 Credits: 3
Structural Detailing
Introduction to detailing as performed by structural fabricators and structural engineering consultants is the focus. This includes structural steel detailing, utilizing standard shapes produced by rolling mills to make girders, beams and columns and their associated connections. Metal building detailing is studied and compared to the conventional steel detailing. AISC Manual of Steel Construction is used throughout this portion of the course. There is an introduction to the detailing required for concrete structures. Poured-in-place, precast structural members, standard reinforcing details and field considerations are reviewed. Prerequisite(s): CIVIL-102 and CIVIL-141.

CIVIL-155 Credits: 2
Surveying I
Principles of surveying are presented and the use of surveying tools and instruments in the application of these principles is covered. Taping, leveling and basic total station operation are included. The methods of measurement and the processing of measurement and data are studied.

CIVIL-156 Credits: 2
Surveying II
Principles of surveying are continued, with emphasis on traverse procedures and calculations. The theodolite, EDM, total station GPS and data collector are used for topographic and construction surveys. The uses of COGO are also covered. Prerequisite(s): CIVIL-155 and completion of or currently enrolled in CIVIL-102 and MATH-115.

CIVIL-157 Credits: 3
Route and Highway Surveying
Horizontal and vertical alignment field problems and theory are covered. Geometric design including circular horizontal curves, vertical curves, sight distance, superelevation, cross sections and earthwork is studied. Also, a roadway plan and profile are prepared. Prerequisite(s): CIVIL-156 and CIVIL-102.

CIVIL-158 Credits: 2
Land Surveying
The U.S. Public Land Survey is reviewed. Minimum standards for property surveys are covered. Subdivision regulations and mapping requirements for CSM and subdivision plats are also studied. Also, the principles of control surveys, state plane coordinates, and GPS are reviewed. Prerequisite(s): CIVIL-157.

CIVIL-160 Credits: 3
Legal Elements of Land Surveying
This course covers the techniques of boundary location from the interpretation of written deeds. Principles are drawn from precedents established by the courts. Wisconsin Administrative Code A-E7 and Wisconsin Statutes Chapter 236 are reviewed. Prerequisite(s): CIVIL-156.

CIVIL-161 Credits: 3
Boundary Location
Principles and practice of boundary locations are presented. Public land system is covered in detail; principles for performing surveys are discussed. Prerequisite(s): CIVIL-156.
CIVIL – CNC

DEGREE/DIPLOMA COURSE DESCRIPTIONS

CIVIL-170
Sewer and Water Systems
Principles of design and construction of water distribution, sanitary sewer and storm sewer systems are studied including the related principles of hydraulics, hydrology and local standards. Engineering drawings of these facilities are also prepared. Prerequisite(s): CIVIL-102 and CIVIL-135.

CIVIL-190
Civil Internship
This course is designed to be very general. In that way it can fit with a variety of internships, such as surveying, material testing, CAD, construction inspection, project management, etc.

CLINICAL LABORATORY TECHNICIAN

CLABT-109
Blood Bank
This course focuses on blood banking concepts and procedures including blood typing, compatibility testing, workups for adverse reaction to transfusions, disease states and donor activities. Prerequisite(s): CLABT-110, CLABT-113, CLABT-115.

CLABT-110
Basic Lab Skills
Explores health career options and the fundamental principles and procedures performed in the clinical laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests. Prerequisite(s): Admission to either the Clinical Laboratory Technician (10-513-1) or Phlebotomy Diploma (30-513-1) program.

CLABT-111
Phlebotomy
Provides opportunities for students to perform routine venipuncture, routine capillary puncture and special collection procedures. Prerequisite(s): CLABT-110.

CLABT-113
QA Lab Math
This course focuses on performing the mathematical calculations routinely used in laboratory settings. Students also will explore the concepts of quality control and quality assurance in the laboratory. Students will review the regulatory compliance requirements, and certification and continuing education programs. Prerequisite(s): Admission to the Clinical Laboratory Technician program (10-513-1).

CLABT-114
Urinalysis
Prepares you to perform a complete urinalysis which includes physical, chemical and microscopic analysis. You will explore renal physiology and correlate urinalysis results with clinical conditions. Prerequisite(s): CLABT-110, CLABT-113.

CLABT-115
Basic Immunology Concepts
This course provides an overview of the immune system including laboratory testing methods for diagnosis of immune system disorders, viral and bacterial infections. Prerequisite(s): Admission to the Clinical Laboratory Technician program (10-513-1).

CLABT-120
Basic Hematology
This course covers the theory and principles of blood cell production and function, and also introduces you to basic practices and procedures in the hematology laboratory. Prerequisite(s): CLABT-110, CLABT-111, CLABT-113, CLABT-115.

CLABT-121
Coagulation
This course introduces the theory and principles of coagulation and explores mechanisms involved in coagulation disorders. Emphasis is placed upon laboratory techniques used to diagnose disease and monitor treatment. Prerequisite(s): CLABT-113.

CLABT-130
Advanced Hematology
This course explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques that are used to diagnose disorders and monitor treatment. Prerequisite(s): CLABT-120.

CLABT-131
Clinical Chemistry 1
Introduces clinical chemistry techniques and procedures for routine analysis using photometric, potentiometric and separation techniques. Topics in this course include pathophysiology and methodologies for carbohydrate, lipoids, proteins, renal function and blood gas analysis. Prerequisite(s): NATSCI-177 or NATSCI-202, NATSCI 186, CLABT-110, CLABT-113 and CLABT-114.

CLABT-132
Clinical Chemistry 2
Continuation of Clinical Chemistry 1, this course includes techniques and procedures for analysis using sophisticated laboratory instrumentation. Topics include pathophysiology and methodologies for hepatic, bone, cardiac markers, tumor markers, endocrine function, fetal function, miscellaneous body fluids and toxicology. Prerequisite(s): CLABT-131.

CLABT-133
Clinical Microbiology
This course presents the clinical importance of infectious diseases with emphasis upon the appropriate collection, handling and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will also be discussed. Prerequisite(s): NATSCI-161.

CLABT-140
Advanced Microbiology
This course provides an overview of acid fast organisms, fungi, parasites and anaerobic bacteria. The organisms, their pathophysiology, epidemiology, the diseases and conditions that they cause, laboratory methods of handling, culturing and identification will be discussed. Prerequisite(s): CLABT-133.

CLABT-143
Seminar
This course provides a review from previous courses that helps the student prepare for national certification examinations for the clinical laboratory technician level. It also assists students with résumé development, job interview practice, and job searches. Prerequisite(s): CLABT-113.

CLABT-151
Clinical Experience 1
In this clinical you will practice the principles and procedures of laboratory medicine as an entry-level medical/clinical laboratory technician in a clinical laboratory setting. You will learn to operate state-of-the-art instruments and report results on laboratory information systems. Prerequisite(s): CLABT-110, CLABT-111, CLABT-113, CLABT-114, CLABT-115, CLABT-120, CLABT-121, CLABT-122, CLABT-123, CLABT-130, CLABT-131, CLABT-132 and CLABT-133.

CLABT-152
Clinical Experience 2
In this clinical, students will practice the principles and procedures of laboratory medicine as an entry-level medical/clinical laboratory technician in a clinical laboratory setting. Students will learn to operate state-of-the-art instruments and report results on laboratory information systems. Prerequisite(s): CLABT-151.

COMPUTER NUMERICAL CONTROL

CNC-302
Computer Application/CNC
An introduction to Windows is given, beginning with an overview of a personal computer system’s components. Students utilize Word and CNC editors to create and edit text files, explore the directory structure in the context of CNC programs and software, and control fixed and floppy disk drives. An introduction to Mastercam software will be covered.

For more information: matc.edu or 414-297-MATC.
CNC – COMART

DEGREE/DIPLOMA COURSE DESCRIPTIONS

CNC-320 Credits: 1
Tooling and Fixturing
An overview of the basic types and functions of jigs and fixtures and the way these workholders are designed and built. Basic elements of supporting, locating, and clamping the part are included, as well as modular component workholders and principles of power clamping.

CNC-321 Credits: 1
CNC Machine Technology
Instruction is given in state-of-the-art CNC machining technologies. This course is upgraded as these technologies change.

CNC-324 Credits: 3
CNC Machine Programming/Proveout 1
This course is for those who already understand the basic concept of CNC machining center operations. Students will learn 3D drawing techniques and how to generate tool paths using Mastercam software. They will be taught operational procedures for the CNC 5 axis machining center at MATC including start up, workholding, tool mounting, offset setting, and program management, and a specific proveout procedure is covered. All of the programs that the students create are proved out on full-size machines like those used in industry today.

COMMERCIAL ART

COMART-100 Credits: 1
Exploring Graphic Design
Have you ever wondered if you have what it takes to be a graphic designer? Today's world of graphic arts incorporates advanced technology, and in this four-week one-credit survey course, you will explore career options in this field. Course topics will include an overview of the graphic design industry; image creation software; draw, paint and digitize; putting it all together; page layout tools; and also the new frontier: web page design. Prerequisite(s): COMART-103.

COMART-101 Credits: 2
Pre-Entry Portfolio Preparation
This course will enable students to assemble a preliminary portfolio used to assess entry-level abilities. Projects will be assigned based on existing skills and talents exhibited through previous experience. This one-credit elective course is highly recommended for students with little or no previous art and/or design experience.

COMART-103 Credits: 3
Design Elements and Principles
This course develops the student's ability to express meaning with graphic form by introducing basic knowledge of shape and space, unity and components, contrast, hierarchy, psychology of color, sign and symbol. Students will also learn how to utilize available media and work within design constraints.

COMART-104 Credits: 2
Design Research and Conception
Successful graphic design needs careful planning and research before ideas are explored. In this course students will experience the professional design process from clarification of the client's objective, to analysis and research of visual reference and contemporary trends, to implementation of the final comprehensive design. Prerequisite(s): COMART-103.

COMART-106 Credits: 3
Graphic Design Trends
This course will explore historical and contemporary communication trends, interactive methodology, popular culture and their effect on visual design. Prerequisite(s): COMART-103, COMART-115.
COMART-107 Credits: 3
Digital Imaging: Adobe Photoshop
This course is an introduction to digital imaging in Adobe Photoshop as it applies to design and illustration. Students learn digital color correction, retouching, image manipulation, special effects, image compositing and creative design techniques. Differences between raster and vector graphics are discussed. Students also learn how to manage files, optimize images for print output and multimedia applications.

COMART-109 Credits: 1
Photographic Art Direction
Students learn basic photographic direction and communication for design.

COMART-110 Credits: 3
Publication Design Using Adobe InDesign
This course builds the essential skills in popular desktop publishing programs. Topics covered include integrating graphics and photos into publication, formatting type, creating tables, importing files, managing story threads, managing color and assembling pages. Design principles and process specific to publications will be emphasized. Creative assignments range from newsletters, magazines, and books to electronic publications. Prerequisite(s): COMART-103, COMART-107, COMART-115 and COMART-122.

COMART-111 Credits: 3
Advertising Layout
This course is an introduction to advertising layout, from rough concepts to comprehensive presentations. Students will explore effective design styles, use of typography and various rendering techniques. Prerequisite(s): COMART-103, COMART-115.

COMART-112 Credits: 3
Graphic Design Workshop
In addition to a course facilitator, five visiting professionals who exemplify the broad spectrum of practice within the graphic arts industry will present mini seminars scheduled for three weeks each. These professionals will represent members of the regional graphic arts community, including graphic/web designers, art/creative directors, photographers and illustrators. Prerequisite(s): COMART-111, COMART-118.

COMART-113 Credits: 3
Media Preparation for Print and Digital Publishing
An advanced layout and production course addressing the present advertising market. Students prepare layouts for various advertising media and produce final computer files for their designs. Concepts or ideas are emphasized, as well as application of design principles, typography and production skills. Addresses the transition to electronic production and pre-press. Offers hands-on experience using Macintosh computers for production of art and page layout. Prerequisite(s): COMART-111, COMART-118.

COMART-115 Credits: 3
Typography 1
The character and formation of major typography families are studied and analyzed for effective applications in graphic communications. Letter forms in design are explored through conventional methods and computer modeling.

COMART-116 Interactive Media Design
This course covers basics for designing message and function in interactive digital environments. Students will learn to control motion, interactivity, sound and space to design interfaces that are navigable, readable and usable. Critical review of both good and bad interface examples is offered. Prerequisite(s): COMART-104, COMART-107.

COMART-117 Packaging and Exhibition Design
This course focuses on designing and designing in three dimensions for product packaging, point of purchase display (POP) and environmental graphics. Graphic continuity, content, client/customer research and aesthetic issues are dealt with at length. Students will also learn simple model making techniques and choosing appropriate materials. Prerequisite(s): COMART-111.

COMART-118 Typography 2
In this advanced typography course, students will further explore the professional uses of type in design. Students will learn how to create dynamic type for both editorial and illustrative purposes, learn proper use of punctuation and alternate characters, create and manage style sheets, proofread and edit documents, design a custom font, and create moving type. Prerequisite(s): COMART-110, COMART-115 and COMART-122.

COMART-122 Vector Graphics: Adobe Illustrator
This course addresses the concepts and techniques of creating illustrations and images for use in print and digital applications utilizing current industry-standard drawing software: Adobe Illustrator. Assignments include the creation of logos, symbols, technical illustrations, information graphics and art for other applications.

COMART-152 Credits: 1
Digital Portfolio
Students will assemble a professional portfolio created and presented via digital media. This course will emphasize creativity, variety, process and technique. A complete digital portfolio should be presented in the portfolio event. Prerequisite(s): COMART-116.

COMART-153 Credits: 3
Portfolio Assessment
In this course, students will learn portfolio preparation and presentation, networking and establishing contacts, job interviewing skills, resume-writing, completing job applications and follow-up. Guest speakers will add their professional insight. Prerequisite(s): COMART-110, COMART-111 and COMART-112.

COMART-154 Graphic Design Internship
This course has a graphic design-pertinent GPA requirements and portfolio review prerequisites for consideration to apply. Application to the Graphic Design Internship is open only to students who have completed at least three full semesters of their respective program. Upon acceptance, the student will work and study in close proximity with an art director, graphic designer or creative director from a Milwaukee-area creative firm. The study itself will be conducted at the actual location of the firm, giving the student invaluable exposure to the working environment of the creative professional.

COMART-155 Advanced Visual Design Applications
Admission to this course requires a graphic design-pertinent GPA and portfolio review prerequisites. This course is typically open only to students who have completed at least three full semesters of their program. This course provides in-depth study of design continuity on several levels, including continuity within a visual design program, repurposed design material and the designer’s portfolio. Each student will be required to compose an individual study course outline which will govern their semester project. Students will also present an outcome assessment. Prerequisite(s): COMART-106, COMART-107, COMART-122.

COMART-157 Credits: 2
Advanced Media Design
Students focus on advanced design problem-solving using a broad range of design applications with emphasis on creative graphics reproduction. Prerequisite(s): COMART-103, COMART-106.

COMART-158 Credits: 1
Portfolio Assessment
Prerequisite(s): COMART-116, COMART-111 and COMART-122.

COMART-182 Credits: 3
Graphic Arts Business Skills
Functional business skills for the graphic artist, photographer or multimedia developer. Whether freelancing, managing a production company or working in a consulting capacity, the visual communicator needs basic skills for success and survival. These skills include marketing, accounting, billing, estimating and proposal writing.
COMPMC – COMPSW

COMPUTERIZED MACHINING/ AUTOMATED MANUFACTURING

COMPMC-130 Credits: 3
Inspection/Quality Control
The student will learn a variety of basic skills that will contribute to the quality of outgoing products. Skills will be developed in the interpretation of engineering drawings and the handling and use of measuring tools. Students will learn about geometric dimensioning and tolerancing, quality costs and audits, inspection planning, and statistical process control.

COMPUTER SOFTWARE

COMPSW-101 Credits: 1
Computer Essentials
This course will introduce students to the important components and functions of the computer: how the computer works with files, the use of Blackboard, the use of student email, MS Word and Excel, search online, protecting your files, privacy policies online and more.

COMPSW-106 Credits: 3
Introduction to MS Office
This course provides a hands-on overview of software applications, including units of instruction in MS Windows, Word, Excel, Access and PowerPoint. Combined with COMPSW-101, this course can help prepare the student to take the MS Office User Specialist (MOUS) exam.

COMPSW-107 Credits: 3
Intermediate MS Office
Students will develop intermediate-level skill in Windows-based personal computer software including MS Word, MS Excel, MS Access and MS PowerPoint. MATC strongly recommends that students complete COMPSW-106, or have the equivalent skills, prior to enrollment in this course.

COMPSW-110 Credits: 1
Introduction to Windows 7
This course helps the student learn to manipulate a mouse, start programs, control the arrangement of desktop windows, create shortcuts on the desktop, manage folders and files, and use some of the accessories within the Windows environment.

COMPSW-115 Credits: 1
MS Windows
This course helps students learn to control the arrangement of desktop windows, create shortcuts on the desktop, manage folders and files, and use some of the accessories within the Windows environment.

COMPSW-126 Credits: 1
MS Publisher
Students will explore using Publisher to do basic page layout for printed matter and the World Wide Web. Formatting text, scanning and using graphics, creating brochures and newsletters and designing for and publishing to the web are covered.

COMPSW-137 Credits: 1
MS Excel – Part 1
Students begin to develop skills in creating worksheets. Skills developed include entering data, building and copying simple formulas, utilizing built-in functions and creating charts.

COMPSW-138 Credits: 1
MS Excel – Part 2
Students develop skill in building more complex formulas, working with multiple worksheets and utilizing powerful data management features, including but not limited to pivot tables. MATC strongly recommends that students complete COMPSW-137, or have the equivalent skills, prior to enrollment in this course.

COMPSW-139 Credits: 1
MS Excel – Part 3
Students will create data tables, use scenario manager and database query techniques, create more flexible pivot tables, customize Excel, create macros, as well as link and embed data. MATC strongly recommends that students complete COMPSW-138, or have the equivalent skills, prior to enrollment in this course.

COMPSW-150 Credits: 1
MS Access – Part 1
Students are introduced to database concepts. Students will learn to design and create relational database tables, update table information, query databases, and design simple forms and reports.

COMPSW-151 Credits: 1
MS Access – Part 2
Students will create more advanced queries and custom forms, customize reports, and integrate Access with other programs. MATC strongly recommends that students complete COMPSW-150, or have equivalent skills, prior to enrollment in this course.

COMPSW-154 Credits: 1
MS Access – Part 3
Students create and run Action Queries. Additionally, students will automate tasks with macros, create custom toolbars, write limited Visual Basic code, and learn how to create a switchboard. MATC strongly recommends that students complete COMPSW-151, or have equivalent skills, prior to enrollment in this course.

COMPSW-165 Credits: 1
MS PowerPoint
Students create presentation quality graphics and computer slideshows. This course provides hands-on training in design, layout, creation and presentation of slideshows, speaker notes and handouts.

COMPSW-179 Credits: 1
Databases in Web Design Using Dreamweaver
Students are introduced to database design for websites. You will learn how to use PHPMyAdmin to create and maintain databases. The databases will be incorporated into sites to collect data from forms. The collected data is then used in Excel for analysis and reporting. Prerequisite(s): COMPSW-134.

COMPSW-181 Credits: 1
Introduction to Camtasia
This course covers the basics of Camtasia Studio to create screen capture videos, allowing you to show others exactly what is happening on your screen. Topics include recording videos, video editing options, adding title clips and transitions, and saving and producing videos.

COMPSW-184 Credits: 1
Google Apps for Online Teaching
This course involves techniques and strategies to develop a collaborative online environment for sharing course materials and for communicating online through interactivity and encouraging student engagement. Google Apps includes Gmail (webmail services), Google Calendar (shared calendaring), Google Docs (online document, spreadsheet, presentation and interactive sharing), Google Video (secure and private video sharing), Google Sites (online website creation with videos, images, gadgets and documents integration) and Google Hangouts (for student group work and faculty interaction).

COMPSW-197 Credits: 1
Introduction to Blackboard 9.X
The basics of the Blackboard Learning Management System are covered in this course. Topics include customizing both the student and instructor views, creating, loading and editing content, user management, assessment options, creating assessments, managing the online grade book, using discussion boards, tracking student activities, archiving, copying, exporting and importing content and site management, design and security. The project in this course is to begin using some of the Blackboard features for one or more of your online or face-to-face courses.

COMPSW-198 Credits: 1
Intermediate Blackboard 9.X
This course focuses on intermediate features of the Blackboard Learning Management System. Topics include using the assignment feature, creating and using test pools, creating an effective assessment, making changes in the online grade center, using the adoptive release feature to individualize the course for students, customizing a course through use of the course settings and images, creating and deploying a survey. The course also covers basic use of the plagiarism

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COMPSW – CSG

DEGREE/DIPLOMA COURSE DESCRIPTIONS

prevention solution adopted by the college. The projects for this course are to begin using some of the intermediate Blackboard features for one or more of your online or face-to-face courses, and also a teaching project on an instructor-approved topic. Prerequisite(s): COMPSW-197.

COMPSW-199
Advanced Blackboard 9.X
This course focuses on advanced features of the Blackboard Learning Management System. Topics include using the assignment feature, creating and using test pools, creating an effective assessment, making changes in the online grade center, using the adaptive release feature to individualize the course for students, customizing a course through use of the course settings and images, creating and deploying a survey, and finding sources of learning objects and other materials to enhance a Blackboard course. The course also covers basic use of the plagiarism prevention solution adopted by the college. The project in this course is to begin using some of the advanced Blackboard features for one or more of your online or face-to-face courses. Prerequisite(s): COMPSW-197, COMPSW-195, COMPSW-193 or COMPSW-190.

COMPUTER SIMULATION AND GAMING

CSG-100
CSG Pre-Entry Evaluation
This course is intended to assess students’ skills readiness to enter the CSG program in the areas of logic design creativity, communication, teamwork, artistic creativity, and project-based learning skills. It will provide students with a snapshot of the process, areas of skills and the intensity of working in the gaming industry. Students completing this course will be officially admitted into the program; advising will be provided to students who, after this course, are interested in pursuing other program options in similar areas.

CSG-110
Introduction to Computer Simulation and Gaming
This course provides students with an overview of the computer simulation and gaming industry. Students will be introduced to the genres, gaming development process, ethics, copyright issues and planning, marketing and management concepts. Emphasis will be placed on game objectives, keeping the player perspective and educational applications.

CSG-115
CSG Production
This course provides students with a hands-on team approach to creating games and simulation from the very beginning. Animation-focused students work side by side with programming-focused students to create simple introductory games and simulations on a game engine. Exposure to content requirements, engine limitations, scheduling, deliverables and communications will be emphasized. Teams will be selected to compete against each other; the focus of this class is to perform rapid prototyping of ideas in a challenging environment while developing collaboration skills. Prerequisite(s): Completion of or currently enrolled in CSG-110.

CSG-117
Game Logic and Problem-Solving
This course presents a formal approach to logical thinking and problem-solving using game logic concepts. For students to think logically and solve game play problems, they need to understand game mechanics and game play choices. This means using logically valid forms of analysis, critical thinking and application concepts to derive new results from those already known to be implemented in the gaming industry. This course will teach these game problem-solving structures in context with fundamental programming structure application.

CSG-118
Game Engine Scripting
This course expands on the fundamental concepts introduced in Introduction to Object-Oriented Programming in a gaming environment. Game scripting languages in a game engine environment will be used to create games and simulations. The course emphasizes good software engineering principles and developing fundamental programming skills in the context of a language that supports the object-oriented paradigm. In this course the student applies lessons learned in introductory courses to a pre-existing game class within the game engine. Topics include classic techniques for algorithm design, game mechanics problem-solving in the object-oriented paradigm, and the application of algorithm design techniques to a game mod project. Prerequisite(s): ITDEV-110.

CSG-119
Designing Interactive Displays
This course introduces students to interactive display systems using a game engine. Focus will be on designing, producing and testing museum quality programs and simulations for “edutainment” purposes. Display design concepts such as lighting, sound, projection, audience interaction, docent design, and user interface technology also will be emphasized. Students will be immersed in a team and production environment while they are working on a real project for a real client. Prerequisite(s): VICOM-115.

CSG-129
CSG Architecture
This course provides students with an overall architectural planning concept of a simulation or game. Students will be introduced to level diagrams, flow control, structure and progression diagrams, assessment tools in educational applications, decision-making mapping. Emphasis will be placed on planning, documentation tracking and process monitoring. Prerequisite(s): ITDEV-110 or ANIM-106.

CSG-130
CSG Design
This course offers students an exploration of the fundamentals of simulation and game design. Students will construct a simple game or simulation using industry standards and test-driven design elements. Emphasis will be placed on the planning, development control, and testing process of the simulation or game. Educational applications will also be discussed. Prerequisite(s): ITDEV-110, ANIM-106 or VICOM-152.

CSG-131
Introduction to Game Design
This course provides students with a hands-on team approach to designing games and simulation from the very beginning. Design members will learn theories and applications of game design, as well as the process of design documentation within the game development environment. Exposure to content requirements, scheduling, deliverables and communications also are emphasized in this class.

CSG-132
Artificial Intelligence
This course provides students with an introduction to artificial intelligence (AI) concepts related to the simulation and game industry. Students will be introduced to basic planning, decision-making and testing concepts of AI that add value to simulations and games. Emphasis will be placed on developing an AI system for simple games to keep the user engaged. Prerequisite(s): VICOM-181.

CSG-133
Intermediate Game Design
This course is designed to teach students how to create lore for characters and environments as well as advanced combat and economy systems. This is intended to prepare game designers for creating unique worlds and mechanics for all types of games. Focuses will be writing lore, level design, character design, enemy AI, combat design, puzzle design, and game economics. The course is intended for the program’s game designer-focused students. Prerequisite(s): VICOM-115 and VICOM-117.

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### CSG – CULART DEGREE/DIPLOMA COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CULART-100</td>
<td>Introduction to Food Service/Hospitality Industry</td>
<td>1</td>
<td>This introductory course details the worldwide and domestic history of culinary arts and the food service industry. Emphasis is placed upon various types of food service operations, organizational systems, historical and contemporary figures, career opportunities, food trends and the future of the food service industry.</td>
</tr>
<tr>
<td>CULART-101</td>
<td>Culinary Skills 1</td>
<td>5</td>
<td>Basic principles of food preparation and presentation are taught. A foundational study is made of various cooking methods, styles, trends and procedures applied to major food categories. The scientific principles relating to the physical composition of different foods and the chemical changes involved in the cooking process are analyzed. Principles include: heat transfer, food composition, sanitation practice, personal hygiene, foundation recipes and human relations skills. Prerequisite(s): Completion of or currently enrolled in CULMGT-112; concurrent enrollment of CULART-102.</td>
</tr>
<tr>
<td>CULART-102</td>
<td>Culinary Skills 2</td>
<td>5</td>
<td>This is an advanced cooking course that places emphasis on specialty soups and sauces, and also the fabrication and preparation of meats, poultry and fish. Prerequisite(s): CULMGT-112 and concurrent registration in CULART-101.</td>
</tr>
<tr>
<td>CULART-104</td>
<td>Introduction to Food Service Cost Control</td>
<td>1</td>
<td>Basic food service cost control techniques are studied using production formulas, costing recipes, calculating menu prices, calculating amounts to purchase and prepare, converting recipe yields and calculating cost percentages. Emphasis is placed on viewing mathematical answers in light of true operational considerations. An introduction to basic computer use is also covered. Prerequisite(s): MATH-107 or any 200-level math course.</td>
</tr>
<tr>
<td>CULART-105</td>
<td>Dining Room Service</td>
<td>2</td>
<td>An orientation to acceptable hospitality standards essential to the proper planning and arranging of service for public and private functions. Prerequisite(s): CULART-115 and completion of or currently enrolled in CULART-108 and CULART-138.</td>
</tr>
<tr>
<td>CULART-106</td>
<td>Catering</td>
<td>3</td>
<td>Covered are the basic elements of food service catering including: types of catering, typical organization, menu development, staffing, marketing, customer service, food production and service. Techniques in the planning and preparation of various catering functions are implemented through hands-on events carried out by the students. Prerequisite(s): CULART-102.</td>
</tr>
<tr>
<td>CULART-107</td>
<td>Field Experience in Food Service/Hospitality Industry</td>
<td>2</td>
<td>Students work 216 hours as regular employees in a food service facility. The goal of field experience is to give students the opportunity to apply, on the job, the skills learned in the classroom and lab, and obtain a broad overview of an entire facility.</td>
</tr>
<tr>
<td>CULART-108</td>
<td>Specialty Foods</td>
<td>5</td>
<td>Advanced classical, contemporary and ethnic food preparation service procedures are introduced and studied in preparation for customer service in a kitchen and dining room facility. Emphasis will be placed on menu and culinary terminology, portion control, sanitation and food handling procedures that enhance customer satisfaction. Prerequisite(s): CULART-115 and completion of or currently enrolled in CULART-105 and CULART-138.</td>
</tr>
<tr>
<td>CULART-110</td>
<td>Garde Manger</td>
<td>2</td>
<td>This course is designed to cover specialty techniques in the preparation of various charcuterie, preserved foods, cold food, hors d’oeuvres, and decorative food applications. Force meats such as pates, terrines, galantines, and sausage are prepared and presented. Brines, cures, marinades, dry rubs, and barbecue for various meats and fish are produced. Salad and appetizer production and presentation are covered as well. Prerequisite(s): Completion of or currently enrolled in CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127.</td>
</tr>
<tr>
<td>CULART-112</td>
<td>Business/Industry Food Service/Catering 1</td>
<td>5</td>
<td>Students gain practical experience in high-volume feeding by rotating through stations to meet course competencies in line food preparation and the principles of institutional production. Work is detailed for each rotation. In conjunction with MATC Food Services, students participate in catered functions at the college. Prerequisite(s): CULART-121, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127 and completion of or currently enrolled in CULART-134, CULART-135, CULART-136, CULART-137, CULART-115.</td>
</tr>
<tr>
<td>CULART-113</td>
<td>Business/Industry Food Service/Catering 2</td>
<td>4</td>
<td>Students gain practical experience in high-volume feeding by rotating through stations to meet course competencies in line food preparation and the principles of institutional production. Work is detailed for each rotation. In conjunction with MATC Food Services, students participate in catered functions at the college. Special emphasis is placed on the cuisines of regional America, Asia, Latin America, Europe and the Mediterranean. Prerequisite(s): CULART-121, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127 and completion of or currently enrolled in CULART-112.</td>
</tr>
<tr>
<td>CULART-115</td>
<td>Culinary Arts Practicum</td>
<td>1</td>
<td>At the completion of the first year of study, students will be assessed on the application and demonstration of the program competencies required. Competencies include: knife skills; basic cooking procedures including stocks, soups, sauces, dry heat and moist heat applications; vegetable applications; grains, pasta and potato applications; and the fabrication and preparation of meats, poultry and fish. These will be assessed through a practical exam. Prerequisite(s): CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126, and CULART-127. Completion of or currently enrolled in CULART-112, CULART-134, CULART-135, CULART-136, CULART-137.</td>
</tr>
</tbody>
</table>
CULART-119
Culinary Science
Basic food science principles as related to cookery studied in this course. Cooking methods, as well as the function and chemistry of proteins, fats, carbohydrates, flavors and seasonings are explored as part of the coursework. Prerequisite(s): Completion of or currently enrolled in CULART-121.

CULART-120
Ethnic and Regional American Cuisine
This course provides an introduction to various types of ethnic and regional American cuisine, including preparation techniques and characteristics of specific foods. Areas of study include American, Asian, European, Latin American and African cuisines.

CULART-121
Mise en Place/Culinary Fundamentals
Students learn the basic kitchen principles of food safety, kitchen organization, knife skills, egg cookery, recipe proficiency, equipment and smallwares identification and usage. Prerequisite(s): Completion of or currently enrolled in CULMGT-112, CULART-119 and CULMTG-102.

CULART-122
Stock, Soups and Sauces
This course will have students discuss and prepare consomme, cream, clear, purée and bisque soups. Students will prepare a variety of stocks including white, vegetable, beef, brown and chicken. Students will make a variety of soups including the mother soups and several small soups. Prerequisite(s): CULMGT-112, CULART-119 and CULART-121. Completion of or currently enrolled in CULART-123, CULART-124, CULART-126 and CULART-127.

CULART-123
Vegetables, Starches and Grains
Basic principles of vegetable, starches and grains preparation and presentation are taught. Study is made of various cooking methods/styles/trends and procedures applied to these categories. Scientific principles relating to the physical composition of different foods and the chemical changes involved in the cooking process are analyzed. Principles include: heat transfer, food composition, sanitation practice, personal hygiene, foundation recipes, food processing tools and equipment, state of professionalism, and knife skills. Prerequisite(s): CULART-121, CULART-119 and CULMGT-112. Completion of or currently enrolled in CULART-122, CULART-124, CULART-126, CULART-127.

CULART-124
Meat Identification/Fabrications
This course introduces the student to the subject of meats and their application in food service operations, building a strong foundation that supports the principles to be learned in the cooking courses that follow. Through lectures, demonstrations, hands-on activities and reviews, students learn about the muscle and bone structure of beef, veal, pork, lamb and poultry; fabrication methods for sub-primal and food service cuts; inspection and proper tying and trussing methods. Lectures introduce meat inspection, quality and yield grading, costing and yield testing, purchasing specifications, and basic information concerning the farm-to-table trail. Discussions include proper knife selection and butcherery equipment with sanitation and safety standards stressed throughout. Current HACCP procedures and methods are used. Prerequisite(s): CULMGT-112 and CULART-119. Completion of or currently enrolled in CULART-121, CULART-122, CULART-123 and CULART-127.

CULART-125
Culinary Skills for Baking/Hospitality
Basic principles of food preparation and presentation are taught. A foundational study is made of various cooking methods, styles, trends and procedures applied to major food categories. Scientific principles relating to the physical composition of different foods and the chemical changes involved in the cooking process are analyzed. Principles include: heat transfer, food composition, sanitation practice, personal hygiene, foundation recipe, and human relations skills. There will be an additional focus on classic and modern sandwiches, classic and modern salads, and barista specialty coffee drinks.

CULART-126
Seafood/Shellfish Cookery
This course is designed to focus on the various types of cooking methods of fish and seafood found in the restaurant industry. Students learn about the history of commercial fishing in the U.S. and other regions of the world. The emphasis of study will include: fabrication of fish and seafood, various cooking methods, aqua culture, sustainability in the seafood industry and applying various cooking techniques for all of the major seafoods to be studied. Students learn the difference between fresh-water fish, farm-raised fish and seafood from the oceans around the world. Prerequisite(s): CULMGT-112 and CULART-119. Completion of or currently enrolled in CULART-121, CULART-122, CULART-123, CULART-126 and CULART-127.

CULART-127
Center of the Plate – Meat Cookery
This course is designed to focus on the various types of cooking methods for proteins found in the restaurant industry, including beef, pork, lamb and veal. The emphasis of study includes various common plating standards used in the industry with the inclusion of starch and vegetables that complement the protein. The use of various garnishing techniques is demonstrated for the student. Prerequisite(s): CULMGT-112 CULART-121 and CULART-119. Completion of or currently enrolled in CULART-122, CULART-123, CULART-124 and CULART-126.

CULART-130
Culinary Competition
A practical course in the planning, preparation and presentation requirements for hot culinary competitions. Categories, guidelines and judges’ tips for success will be outlined. Strategies for menu planning and organizational timelines will be covered. Culinary skills, plate arrangement and tasting components will be practiced. Prerequisite(s): CULART-102.

CULART-131
Advanced Culinary Competition
An advanced practical course in the planning, preparation, presentation and tasting components involved in hot food culinary competitions. Classic Escoffier recipes will be utilized. Competition guidelines and judges’ critiques will be discussed. Concepts to be covered will include menu planning, organizational timelines, plate presentations and tasting concepts. Prerequisite(s): CULART-130.

CULART-132
Culinary Competition 3
This course guides and prepares students to compete in an ACT competition, from the application process through the actual competition. Competencies covered in this course will include: knife skills, kitchen skills, teamwork, organizational skills, planning, communication skills, menu planning and proper sanitation techniques. Prerequisite(s): CULART-130.

CULART-133
Culinary Competition 4
This course guides and prepares the student to be able to compete in an ACF competition. Competencies covered in this course will include: equipment usage, knife skills, cold and hot food platter preparation, flavor development, and presentation. Prerequisite(s): CULART-130.

CULART-134
American Regional Cuisine
The American regions included in this study are: the Eastern Heartland, New England, the South, Louisiana, Far West, Northwest, and West Coast, including Hawaii. A brief overview of the geography, history and culture of these various regions sets the stage for an introductory study of the primary ingredients and various cooking methods of each region’s iconic dishes. Students prepare a variety of food items in lab. Prerequisite(s): CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127. Completion of or currently enrolled in CULART-112, CULART-135, CULART-136, CULART-137 and CULART-115.

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**CULART – CULMGT**

**DEGREE/DIPLOMA COURSE DESCRIPTIONS**

**CULART-135**  
**Credits:** 1  
**European and Mediterranean Cuisine**  
Students will discuss and prepare Mediterranean and European cuisines, discuss the history of those regions and the specific equipment and tools needed to prepare the cuisines. Students will adhere to basic kitchen principles of food safety. Prerequisite(s): CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127. Completion of or currently enrolled in CULART-112, CULART-115, CULART-134, CULART-136, CULART-137.

**CULART-136**  
**Credits:** 1  
**Asian Cuisine**  
This course provides a general overview of the geography, food history and culture of various areas in Asia, setting the stage for an introductory study of the primary ingredients and cooking methods of the region's traditional dishes. Students prepare a variety of food items in lab. Prerequisite(s): CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127. Completion of or currently enrolled in CULART-112, CULART-134, CULART-135, CULART-137 and CULART-115.

**CULART-137**  
**Credits:** 1  
**South/Central American Cuisine**  
Students discuss the history of the Latin American region, prepare dishes from that cuisine using specific ingredients, equipment and tools needed, while adhering to basic kitchen principles of food safety. Prerequisite(s): CULMGT-105, CULART-122, CULART-123, CULART-124, CULART-126 and CULART-127; and completion of or currently enrolled in CULART-112, CULART-134, CULART-135, CULART-136 and CULART-115.

**CULART-138**  
**Credits:** 2  
**Restaurant Operations**  
This course focuses on the concepts of managing a restaurant operation utilizing different styles of dining and restaurant service. Staffing, concepts of menu development, technology trends and marketing strategies are studied in this course. Prerequisite(s): CULMGT-115 and completion of or currently enrolled in CULART-108 and CULART-105.

**CULART-189**  
**Credits:** 1  
**Culinary Camp**  
This one-credit course is a basic foods lab that focuses on various cooking methods/ styles and procedures as they apply to the main food categories. The key topics are sanitation, use of tools and equipment, and cooking methods. Students will be exposed to proteins, sauces, vegetables and starch cookery at a basic level.

**CULART-190**  
**Credits:** 2  
**Introduction to Culinary Arts**  
This course is a foundational food lab that focuses on various cooking methods, styles and procedures as they apply to the main food categories. The key topics are sanitation, use of tools and equipment, recipe dissemination, mise en place, and cooking methods. Students will be exposed to meat, fish, poultry, stocks, sauces, vegetables and starch cookery at an introductory level.

**CULINARY MANAGEMENT**

**CULMGT-100**  
**Credits:** 1  
**Applied Food Service Sanitation**  
Professional standards and practices in the prevention of food-borne illnesses are presented in this course. Students will prepare for the National Restaurant Association Certification examination in Applied Food Service Sanitation.

**CULMGT-101**  
**Credits:** 2  
**Menu Planning and Design**  
Students learn to apply the principles of menu planning and menu design as they relate to a variety of hospitality operations.

**CULMGT-102**  
**Credits:** 2  
**Food and Beverage Procurement**  
The concept of food and beverage purchasing is studied with emphasis placed on sourcing, writing specifications and controlling costs. Prerequisite(s): Completion of or currently enrolled in CULART-119, CULART-121 and CULMGT-112.

**CULMGT-103**  
**Credits:** 2  
**Beverage Management**  
This course conveys the proper methods and techniques in purchasing, promoting, selling and serving alcoholic and non-alcoholic beverages. Legal requirements, sanitation, staffing, motivation, and control procedures are studied.

**CULMGT-105**  
**Credits:** 3  
**Culinary Math and Cost Control**  
Lecture, demonstration and discussion course. Prerequisite(s): CULART-119, CULART-121 and CULMGT-112.

**CULMGT-109**  
**Credits:** 2  
**Wine and Beer Pairing**  
See INFOline at matc.edu for information.

**CULMGT-111**  
**Credits:** 3  
**Catering Operations**  
This course will cover the basic elements of managing a food service catering operation. More specifically, the course will provide an overview of different types of catering services along with a listing of fundamental skills necessary for success. Other topics will include strategies for developing event themes, menus and timelines within various physical, financial and legal constraints. Furthermore students will gain experience planning, preparing and executing various catering functions. Prerequisite(s): CULART-112 and CULART-113.

**CULMGT-112**  
**Credits:** 1  
**Food Service Sanitation**  
Professional standards and practices in the prevention of food-borne illnesses are presented. Students prepare for the National Restaurant Association ServSafe Certification exam. Prerequisite(s): Completion of or currently enrolled in CULART-119, CULART-121 and CULMGT-102.

**CULMGT-115**  
**Credits:** 1  
**Culinary Management Field Experience**  
Students work 216 hours as regular employees in food service management. The goal of field experience is to give students the opportunity to apply, on the job, the skills learned in the classroom and lab, and obtain a broad overview of an entire facility. Prerequisite(s): CULMGT-117, CULART-119, CULMGT-112 and CULMGT-102.

**CULMGT-116**  
**Credits:** 2  
**Culinary Management Practicum**  
In this capstone course, students will employ all the skills and knowledge gained in the program of study including principles of management, marketing, finance, economics, and the hospitality industry. The student will plan a project that incorporates specific content, establishes goals and objectives, identifies evaluation criteria, and establishes a monitoring and reporting schedule. In addition, students will practice using the theories and concepts learned by managing the on-campus cafeteria, catering, and retail convenience store operations. Prerequisite(s): CULART-112 and CULART-113.

**CULMGT-117**  
**Credits:** 3  
**Hospitality Law and Liability**  
This course provides a study of the nature and function of our legal system as applied to hospitality, restaurant and travel operations. Operator/guest relationships, contracts, torts, civil rights, and insurable risks are emphasized.

**CULMGT-118**  
**Credits:** 2  
**Hospitality Leadership**  
This course introduces students to the principles and techniques required to competitively manage a successful hospitality operation in a rapidly changing environment. The roles, responsibilities and competencies required to perform successfully are presented. Competencies covered include planning, leading, organizing and controlling to efficiently deliver quality products and services. Skills in creative problem-solving and team building are addressed.

**CULMGT-140**  
**Credits:** 3  
**Food and Beverage Operations**  
The complete food and beverage operation in the hotel/motel complex is explored in this course. A basic understanding of the principles of food production and service management, sanitation, menu planning, labor and cost controls, and purchasing will be emphasized.

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CULMGT – CVTECH

CULMGT-150 Credits: 2
Introduction to Food Terrorism Safety
This introductory course will include topics related to food safety in the overall picture of homeland security. Such topics include an overview of homeland security; food service sanitation; food contaminants; food safety in regards to packaging, transportation and storage of food; the instruction of local food service workers; the treatment of food terrorism victims; and other related topics.

CULMGT-152 Credits: 2
Introduction to Cardiovascular Technology
This course will introduce distinctive areas of cardiovascular technology and the role of the technologist. Topics include invasive and noninvasive procedures, department orientation, medical terminology, blood-borne pathogens and nonpatient-related emergencies. Research papers on related topics and a group project also will be required in this course. Guest speakers and site visits to local healthcare/diagnostic facilities may be scheduled. Prerequisite(s): Admission to Cardiovascular Technology program (10-521-1).

CVTECH-110 Credits: 2
EKG Analysis
This course explains the electrical activity of the heart and the various techniques in recording it. Students will learn to identify waveforms and rhythms, correlate them to cardiac events, and troubleshoot and calibrate equipment. Prerequisite(s): Admission to either Cardiovascular Technology (10-521-1) or Anesthesia Technology (10-541-1).

CVTECH-115 Credits: 4
Essentials of Cardiac Care 1
This course will concentrate on the cardiovascular system with the focus on the structure and function of a healthy adult heart, fetal development of the cardiac system and its respective changes at birth, and congenital and acquired pathologies. Prerequisite(s): Admission to Cardiovascular Technology program (10-521-1).

CVTECH-117 Credits: 4
Invasive CVT Fundamentals 1
Students are introduced to the cardiac catheterization laboratory. The various pieces of equipment and specific diagnostic and interventional procedures are presented. During this course, the students will be learning about the typical, daily duties of an invasive cardiovascular technologist through didactic and laboratory instruction. The course competencies will be demonstrated through written examinations, verbal explanations and demonstrations of clinical technique. Prerequisite(s): Student must be admitted to Cardiovascular Technology program (10-521-1).

CVTECH-118 Credits: 3
Introduction to Echocardiography
Echocardiography physics, principles and techniques will be introduced. Ultrasound and Doppler theory; M-Mode, 2D and Doppler echocardiography; instrumentation; artifacts; examination techniques; and physiologic views will be covered. Prerequisite(s): Admission to Cardiovascular Technology program (10-521-1).

CVTECH-120 Credits: 2
Invasive CVT Clinical Procedures
This four-week course is the student’s first opportunity to observe and gain experience in a healthcare facility. Twelve hours per week are scheduled in the hospital setting under direct supervision observing/participating in all aspects of the cardiovascular technologist’s duties. An additional four hours per week are required for on-campus lectures/discussion. Written documentation detailing the clinical phase of instruction will be required. Prerequisite(s): CVTECH-115, CVTECH-117.

CVTECH-121 Credits: 2
Echo Clinical Procedures
This four-week course is the student’s first opportunity to observe and gain experience in a healthcare facility. Twelve hours per week are scheduled in the hospital setting under direct supervision observing/participating in all aspects of the echocardiographer’s duties. An additional four hours per week are required for on-campus lectures/discussion. Written documentation detailing the clinical phase of instruction will be required. Prerequisite(s): CVTECH-115, CVTECH-118.

CVTECH-122 Credits: 2
Hemodynamics
The significance of concise and correct procedural hemodynamic data is presented with an emphasis on understanding the concepts and principles underlying hemodynamics. Topics addressed will include: pericardial disease; appropriate equipment selection and troubleshooting; valvular heart disease; interpretation of arterial, atrial and ventricular waveforms; cardiac output measurement; cardiomyopathies; intracardiac shunt detection. Additionally, the relationship of the cardiovascular and pulmonary systems to hemodynamics is examined with a focus on the principles of PVR, SVR and Stroke Volume. Prerequisite(s): CVTECH-120.

CVTECH-123 Credits: 2
Invasive CVT Clinical Procedures 2
Invasive CVT didactic, laboratory and clinical knowledge continue to be expanded upon from CVTECH-117. More difficult procedures will be covered along with emergency situations. A review of invasive principles, as a preparation for the NCIS examination, will be included. Prerequisite(s): CVTECH-120.

CVTECH-124 Credits: 2
Invasive CVT Clinical 2
This course presents the student with his or her first opportunity in a direct patient care setting, while beginning to perform the duties of a CVT. Here the student will be able to correlate didactic and laboratory classes with the day-to-day duties of a CVT. Prerequisite(s): CVTECH-120.

CVTECH-125 Credits: 4
Echo Instrumentation
This course introduces the specialized techniques of noninvasive cardiovascular testing and the evaluation of cardiovascular anatomy and physiology. Lectures will emphasize the performance and analysis of the echocardiogram, the correlation of echocardiographic findings to normal cardiac anatomy, and the measurement and calculation of specified hemodynamic parameters. Laboratory sessions will incorporate advanced instruction in M-Mode and two-dimensional echocardiography with emphasis on pulsed wave, continuous wave and color-flow Doppler techniques. Prerequisite(s): CVTECH-121.
CVTECH—DENAST

DEGREE/DIPLOMA COURSE DESCRIPTIONS

CVTECH-142 Credits: 3
Echo Case Review
In this course, multiple cardiac pathologies will be studied and addressed through the presentation of echocardiographic case studies. Students will explore a variety of pathologies and how these abnormalities can be evaluated through the utilization of cardiac sonography. This course will primarily involve the presentation of case studies and the assessment of clinical abnormalities as seen by cardiac imaging and advanced Doppler techniques. Prerequisite(s): CVTECH-121.

CVTECH-143 Credits: 3
Ultrasound Principles and Physics
This course provides the basic knowledge of the physical principles and instrumentation of diagnostic ultrasound. Topics covered in this lecture course include transducers, color-flow imaging methodology, bioeffects and acoustic output labeling standards. Students will be introduced to how diagnostic ultrasound works, how to properly handle artifacts, scan safely, evaluate instrument performance and ultimately prepare for board and registry examinations. Prerequisite(s): CVTECH-149.

CVTECH-144 Credits: 3
Advanced Echo Practicum
The structure and function of the cardiac system will be addressed by introducing the specialized techniques of noninvasive cardiovascular testing. There will be an evaluation of cardiovascular sonographic anatomy and physiology through advanced measurement techniques of specified hemodynamic parameters. This course will explore various pathologies and how these abnormalities are evaluated by echocardiography. The student will learn how to assess clinical abnormalities of the human heart as it is seen by cardiac imaging and advanced Doppler techniques. Prerequisite(s): CVTECH-121.

CVTECH-145 Credits: 4
Echocardiography Fundamentals
The structure and function of the cardiac system will be addressed in this course, as well as how various pathologies and congenital anomalies are demonstrated and evaluated by echocardiography. Students will learn how to assess clinical abnormalities of the human heart as these are seen by cardiac imaging, utilizing conventional and echocardiographic stress testing, intravascular. Prerequisite(s): CVTECH-121.

CVTECH-149 Credits: 2
Echocardiography Clinical Experience 1
This course provides the practical application of the principles covered in the didactic and laboratory portions of the program. Students observe, assist and perform duties assigned in the echocardiographic clinical setting. A written journal detailing the clinical phase of the instruction will be required. Prerequisite(s): CVTECH-121.

CVTECH-185 Credits: 2
Invasive CTV Clinical Seminar
Students will discuss with others the cases most recently performed during their clinical experience. Research papers will be required on a variety of related topics, as well as a review of the written journal detailing the clinical phase of instruction. This course will help to prepare students for the written examinations, which lead to credentialing in their chosen specialty. Guest speakers may be scheduled. In addition, résumé writing and interview skills will be covered. Prerequisite(s): CVTECH-139.

CVTECH-186 Credits: 4
Invasive CTV Clinical Experience 2
This course provides the practical application of the principles covered in the didactic and laboratory portions of the program. Students observe, assist and perform duties assigned in the clinical setting in the student’s choice of cardiovascular technology discipline. Prerequisite(s): Completion of or concurrent registration in CVTECH-185.

CVTECH-187 Credits: 4
Invasive CTV Clinical Experience 3
This course is a continuation of CVTECH-186 and provides the practical application to perfect the skills and knowledge through a wider range of cases. Students begin to take a more active and responsible part in the day-to-day tasks associated with clinical duties. Prerequisite(s): CVTECH-186.

CVTECH-195 Credits: 2
Echocardiography Clinical Seminar
Students will discuss the cases most recently performed during their clinical experience. Research papers will be required on a variety of related topics, as well as a review of the clinical phase of instruction. This course helps to prepare students for the written registry examination. Guest speakers may be scheduled. Résumé writing and interview skills will be covered. Prerequisite(s): CVTECH-149.

CVTECH-196 Credits: 4
Echocardiography Clinical Experience 2
This course provides the practical application of the principles covered in the didactic and laboratory portions of the program. Students observe, assist and perform duties assigned in the echocardiographic clinical setting. Prerequisite(s): Completion of or currently enrolled in CVTECH-195.

CVTECH-197 Credits: 4
Echocardiography Clinical Experience 3
The course is a continuation of CVTECH-196 and provides the practical application to perfect the skills and knowledge through a wider range of cases. Students begin to take a more active and responsible part in the day-to-day tasks associated with their clinical duties. Prerequisite(s): CVTECH-196.

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the workforce, dental assistants develop or customize their portfolios and layout in an ongoing professional development plan. Prerequisite(s): Admission to the Dental Assistant program (30-508-2).

**DENTAL HYGIENE**

**DENHyG-101**

**Dental Health Safety**
Prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA standards and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. Prerequisite(s): CPR certification is a prerequisite; students will be required to show proof of certification before beginning the course.

**DENHyG-102**

**Oral Anatomy, Embry, Histology**
Prepares Dental Hygiene program students to apply detailed knowledge about oral anatomy to planning, implementation, assessment and evaluation of patient care. Students identify distinguishing characteristics of normal and abnormal dental, head and neck anatomy and its relationship to tooth development, eruption and health. Prerequisite(s): NATSCI-177, NATSCI-186, NATSCI-197; minimum grade B-; and DENHyG-101.

**DENHyG-103**

**Dental Radiography**
Prepares dental auxiliary students to operate x-ray units and expose bitewing, periapical, extra oral and occlusal radiographs. Emphasis is placed on protection against x-ray hazards. Students also process, mount and evaluate radiographs for diagnostic value. In this course, students demonstrate competency on a mannequin. In addition, students expose bitewing radiographs on a peer, role-play patients. Prerequisite(s): Completion of or currently enrolled in DENHyG-102.

**DENHyG-105**

**Dental Hygiene Process 1**
Introduces Dental Hygiene program students to the basic technical/clinical skills required of practicing dental hygienists including use of basic dental equipment, examination of patients and procedures within the dental unit. Under the direct supervision of an instructor, students integrate hands-on skills with entry-level critical thinking and problem-solving skills. The course also reinforces the application of dental health safety skills. Prerequisite(s): Admission to Dental Hygiene (10-508-2) and completion of or currently enrolled in DENHyG-103.

**DENHyG-106**

**Dental Hygiene Process 2**
This clinical course builds on and expands the technical/clinical skills student dental hygienists began developing in DENHyG-105. Under the direct supervision of an instructor, students apply patient care assessment, planning, implementation and evaluation skills to provide comprehensive care for calculus case type 1 and 2 patients, and perio case type 0, I and II patients. Prerequisite(s): DENHyG-102, DENHyG-103 and DENHyG-105.

**DENHyG-107**

**Dental Hygiene Ethics and Profession**
Helps student dental hygienists develop and apply high professional and ethical standards. Students apply the laws that govern the practice of dental hygiene to their work with patients, other members of a dental team and the community. Emphasis is placed on maintaining confidentiality and obtaining informed consent. Students also learn about enhancing their abilities to present a professional appearance. Prerequisite(s): DENHyG-101.

**DENHyG-108**

**Periodontology**
This course prepares student dental hygienists to assess the periodontal health of patients, plan prevention and treatment of periodontal disease, and to evaluate the effectiveness of periodontal treatment plans. Emphasis is placed on the recognition of the signs and causes of periodontal disease, and on selection of treatment modalities that minimize risk and restore periodontal health. Prerequisite(s): Completion of or currently enrolled in DENHyG-106.

**DENHyG-109**

**Cariology**
This course focuses on the characteristics and contributing factors of dental decay. Dental Hygiene program students help patients minimize caries risk by developing treatment plans, communicating methods to patients and evaluating treatment results. Prerequisite(s): Completion of or currently enrolled in DENHyG-110.

**DENHyG-110**

**Nutrition and Dental Health**
Prepares student dental hygienists to counsel patients about diet and its impact on oral health. Students learn to distinguish between balanced and unbalanced diets and to construct diets that meet the needs of patients with compromised dental/oral health. Students also learn to counsel patients about the effects of eating disorders on dental health. Prerequisite(s): DENHyG-101.

**DENHyG-111**

**General and Oral Pathology**
This course prepares the student hygienist to determine when to consult, treat or refer clients with various diseases, infections or physiological conditions. Students learn to recognize the signs, causes and implications of common pathological conditions. Prerequisite(s): DENHyG-102, DENHyG-103 and DENHyG-105.

**DENHyG-112**

**Dental Hygiene Process 3**
This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process 2. In consultation with the instructor, students apply independent problem-solving skills in the course of providing comprehensive care for calculus case type 1, 2 and 3 patients, and perio case type 0, I, II and III patients. Prerequisite(s): DENHyG-106, DENHyG-108, DENHyG-109, DENHyG-110.

**DENHyG-113**

**Dental Materials**
Prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products and impression materials. They also learn to take alginate impressions on mannequins and clean removable appliances. Prerequisite(s): Completion of currently enrolled in DENHyG-112 or DENAST-302.

**DENHyG-114**

**Dental Pharmacology**
Prepares student dental hygienists to select safe and effective patient pre-medication, local anesthetic, chemo therapeutic, and antimicrobial agents within the scope of dental hygiene practice. Students will also learn to recognize the potential pharmacological contraindications for specific patients, and to take measures to avoid negative impact or alert other members of the dental team to possible negative impact. Prerequisite(s): Completion of or currently enrolled in DENHyG-106.

**DENHyG-115**

**Community Dental Health**
This course prepares the Dental Hygiene program student to play a proactive role in improving the dental health of community members of all ages. Students perform and interpret dental health research to determine community dental health needs. They also participate in the development, implementation and evaluation of a community dental health program. Prerequisite(s): Completion of or currently enrolled in DENHyG-112.

**DENHyG-116**

**Dental Pain Management**
This course prepares the student dental hygienist to work within the scope of dental hygiene practice to manage pain for dental patients. Students receive instruction to prevent and manage common emergencies related to the administration of local anesthesia, prepare the armamentarium and administer local anesthesia. The course also addresses the recommendation of alternative pain control measures. Prerequisite(s): Completion of or currently enrolled in DENHyG-112 and DENHyG-114.
DENHYG – DIETNT

DEGREE/DIPLOMA COURSE DESCRIPTIONS

DENHYG –117  Dental Hygiene Process 4
Credits: 4
This course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process 3. With feedback from the instructor, students manage all aspects of cases in the course of providing comprehensive care for calculus case type 0, 1, 2 and 3 patients, and for perio case type 0, I, II, and III patients. Emphasizes optimization of delivery of care, efficiency and effectiveness. Prepares students to practice dental hygiene in a small examination situation. Prerequisite(s): Completion of or currently enrolled in DENHYG-112, DENHYG-113, DENHYG-114 and DENHYG-116.

DENHYG –130  Dental Hygiene: Transition Into Practice
Credits: 1
This course will prepare students to transition from the educational dental hygiene setting to the career of dental hygiene. Students will prepare for various licensure examinations, prepare a résumé, visit various practice settings to critically evaluate dental hygiene practices, and apply quality assurance and management principles to the practice of dental hygiene. Prerequisite(s): Completion of or currently enrolled in DENHYG-117.

DENHYG –165  Clinical Dental Hygiene Practicum
Credits: 1
The clinical skills learned in DENHYG-105 (preclinical) done primarily on mannequins, will be further developed through the treatment needs of clients. Evaluation simulations will provide feedback to student clinicians, preparing them for their second clinical course in the curriculum. Prerequisite(s): DENHYG-102, DENHYG-103 and DENHYG-105.

DENHYG –175  Practicum in Community Dental Hygiene
Credits: 2
As an independent study, this course helps students to use needs assessment, design, implementation, and evaluation of a community dental health program to identify barriers to accessing healthcare and learn to function as a dental professional in a non-dental community agency.

DENHYG –184  Periodontal Assessment and Treatment Planning
Credits: 2
Treatment planning and assessment options are discussed in relation to current research data. Case presentations provide opportunity for reflection as to the biologic basis of decision-making and potential treatment options. Prerequisite(s): Completion of or currently enrolled in DENHYG-157.

DENHYG –189  Predictable Local Anesthetics for Dental Hygienists
Credits: 1
This course is designed to provide students with comprehensive knowledge and skills in local anesthesia. The course will also include alternative approaches to pain control that could be utilized by a dental hygienist. Prerequisite(s): DENHYG-176.

DIESEL

DIESEL –301  Diesel Fuel Systems
Credits: 2
Students will perform diagnosis, testing and repair procedures on diesel engine fuel system mechanical components. Prerequisite(s): Admission to the Diesel and Powertrain Servicing (31-412-3) program.

DIESEL –306  Engine Construction and Installation
Credits: 5
Students will perform maintenance, adjustments, diagnosis, testing and engine construction. Students will remove and install an engine using the appropriate service manual procedures. Prerequisite(s): DIESEL-301 and DIESEL-307.

DIESEL –307  Electrical/Electronic Shop
Credits: 5
Students become proficient in the use of digital volt/ohm meters (DVOM) and specialized test equipment used for diagnosing electrical/electronic systems. Students will perform diagnosis, testing and repairs using proper service manual procedures. Prerequisite(s): Admission to the Diesel and Powertrain Servicing (31-412-3) program.

DIESEL –319  Driveline Components
Credits: 5
Students will perform service procedures on heavy-duty clutch assemblies, manual transmissions, automatic transmissions, differentials and power dividers. Service procedures include maintenance, adjustments, diagnosis, testing, removal, disassembly, assembly and installation. Prerequisite(s): Completion of or currently enrolled in DIESEL-307 and DIESEL-345.

DIESEL –333  Heavy Truck HVAC Systems
Credits: 2
Students will learn the theory and operation of vehicle heating, ventilation and air conditioning (HVAC) systems. Manual and electronic controls, air distribution and A/C system operation are the focus. Students will learn federal and state laws that pertain to refrigerant usage in vehicle A/C systems. This includes identifying, recycling, recovering, storing and selling refrigerants. Prerequisite(s): DIESEL-307.

DIESEL –338  Emission Control Systems
Credits: 2
Students perform diagnosis and testing of emission systems on mechanical and electronically controlled diesel engines. There will be an emphasis on computer-controlled fuel system diagnosis, testing and repair. Prerequisite(s): DIESEL-307 and DIESEL-301.

DIESEL –341  Front-End, Brake and Suspension Systems
Credits: 5
Students will perform diagnosis, testing and repair procedures of various types of steering and suspension systems, wheel alignment and heavy struck brake systems. Course content includes ABS (anti-lock brake systems) diagnosis, testing and repair. Prerequisite(s): DIESEL-307.

DIESEL –345  Preventive Maintenance
Credits: 2
Students will perform preventive maintenance inspections (PMI) on vehicles using industry standard procedures. Students will gain an understanding of the proper materials, procedures, safe handling and documentation needed to perform a PMI. Prerequisite(s): Completion of or currently enrolled in DIESEL-307 and DIESEL-319.

DIETETIC TECHNICIAN

DIETNT –101  Dietetic Technician Career Exploration
Credits: 1
This course is designed to provide an exploration of the dietetic technician field. This course is designed for those students who have an interest in becoming a Dietetic Technician Registered (DTR). It is an introductory course designed to give the student a greater knowledge of what a DTR does and what career opportunities are open in the field. The goal of this course is to help the student in making an appropriate career choice.

DIETNT –106  Food Service Sanitation
Credits: 1
Professional standards and practices in the prevention of food-borne illnesses are presented. Students prepare for the National Restaurant Association ServSafe Certification Exam. The FDA Food Code is reviewed.

DIETNT –107  Food Science
Credits: 2
Students utilize scientific and medical nutrition therapy principles involved in the preparation of food to provide optimum nutrition and palatability. Laboratory preparation techniques emphasize food quality, sanitation and safety.

DIETNT –108  Food Service Management 1
Credits: 3
In this course the basic principles of food preparation and service are reviewed and applied in a quantity food-production unit. Adjunct operational principles of procurement, menu planning, quality assurance, training, sanitation and safety will also be applied. Prerequisite(s): Student must be admitted to the Dietetic Technician program (10-313-I), completion of or currently enrolled in DIETNT-106.

For more information: matc.edu or 414-297-MATC. Page 216
DIETNT – DLABT

DEGREE/DIPLOMA COURSE DESCRIPTIONS

DIETNT-118 Credits: 1
Food Service Management 1: Coordinated Practice
Basic principles of food service management, human resource management, and sanitation are applied in a clinical setting. This course meets the food service management requirement of the Dietary Manager program. Prerequisite(s): CULMGT-100, CULMGT-112 or DIETNT-106, and completion of or currently enrolled for DIETNT-108.

DIETNT-120 Credits: 3
Nutrition for Living
This is an internet/Blackboard course focusing on practical solutions for everyday nutritional needs. Nutrition and menu planning tips will be reviewed for preventable diseases and the life cycle.

DIETNT-123 Credits: 1
Dietetic Technician Orientation
Policies of MATC, the Dietetic Technician program and American Dietetic Association are explained. Students identify and observe standards of practice to function with the healthcare team and to understand the healthcare system. Math calculations and vital signs used in nutritional assessments will also be introduced.

DIETNT-124 Credits: 3
Medical Nutrition Therapy 1
Students learn to access, plan, implement and evaluate the nutritional and educational needs of individuals at low to moderate nutritional risk. Prerequisite(s): Must be admitted to the Dietetic Technician program (10-313-1), DIETNT-123, DIETNT-151, DIETNT-160, and two semesters of high school chemistry or one semester of college-level chemistry.

DIETNT-125 Credits: 4
Medical Nutrition Therapy 2
A continuation of DIETNT-124 with emphasis on conditions of moderate to high nutritional risk. Students also evaluate the relevant scientific literature and develop personal resource files for professional practice. Prerequisite(s): DIETNT-124 and DIETNT-134.

DIETNT-127 Credits: 1
Seminar in Dietetics
Each student develops an in-depth seminar on a current topic in dietetics, and then presents this as a group facilitator and discussion leader. Prerequisite(s): DIETNT-125 and DIETNT-157.

DIETNT-134 Credits: 1
Medical Nutrition Therapy 1: Coordinated Practice
Clinic activities instruct how to access, plan, implement and evaluate medical nutrition therapy for conditions in children and adults at low to moderate risk in acute healthcare facilities, in coordination with DIETNT-124 didactic activities. Prerequisite(s): Admitted to Dietetic Technician (10-313-1), DIETNT-151, DIETNT-160, and completion of or currently enrolled in DIETNT-124.

DIETNT-135 Credits: 2
Medical Nutrition Therapy 2: Coordinated Practice
Clinical experiences in coordination with DIETNT-125 didactic classroom learning experiences. Prerequisite(s): DIETNT-134, DIETNT-152, DIETNT-156, and completion of or currently enrolled in DIETNT-125.

DIETNT-136 Credits: 3
Medical Nutrition Therapy Field Experience
Medical nutrition therapy field experience where students apply medical nutrition therapy and community principles in a healthcare facility or community health program. Career opportunities and preparation for the ADA registration exam will be discussed in an on-campus lecture format. Prerequisite(s): Completion of or currently enrolled in DIETNT-125 and DIETNT-135.

DIETNT-146 Credits: 3
Food and Nutrition Management Field Experience
Through clinical experiences, students apply management principles by completing department projects according to pertinent regulatory standards. Career opportunities and preparation for the ADA registration exam will be discussed in an on-campus lecture format. Prerequisite(s): DIETNT-124 and DIETNT-167.

DIETNT-151 Credits: 4
Nutrition for Dietetics
This course is a study of nutrients and the nutritional care process, including application to a clinic/lab supervised by a qualified preceptor. This course meets the nutrition care requirement of the Dietary Manager program.

DIETNT-152 Credits: 3
Physiology for Dietetics
The physiology of human organ systems will be studied as it relates to nutrient requirements in health and disease. Organ systems emphasized include renal, liver, gastrointestinal, muscular-skeletal, endocrine, nervous, sensory, lymphatic, respiratory and cardiovascular. Prerequisite(s): Must be admitted to the Dietetic Technician program (10-313-1), DIETNT-151 and either DIETNT-151 or NATSCI-172.

DIETNT-155 Credits: 3
Medical Nutrition Therapy 1: Coordinated Practice
Students learn, through classroom discussions and field trips, to identify and plan the nutritional and educational needs of community groups, including the utilization of local, state and federal nutritional education and food supplement programs. International and ethnic nutrition concerns will be explored. Prerequisite(s): DIETNT-124 and DIETNT-156.

DIETNT-156 Credits: 2
Nutrition in the Life Cycle
The nutrient and nutritional counseling needs for normal growth and for optimal health throughout the life cycle are explored in this course. Prerequisite(s): Must be admitted to the Dietetic Technician program (10-313-1), completion of or currently enrolled in DIETNT-124.

DIETNT-157 Credits: 3
Food Service Management 2
Students learn management techniques in planning, organizing, controlling, delegating and communicating to meet the needs of the various healthcare systems and their regulatory agencies. Prerequisite(s): DIETNT-118, DIETNT-119.

DIETNT-160 Credits: 1
Medical Terminology for the Dietetic Technician
Students study the components of medical words to learn medical terminology for communication with the members of the healthcare team. Emphasis is placed on recognition, pronunciation, definition and spelling of terms and abbreviations.

DIETNT-166 Credits: 1
Nutrition in the Life Cycle: Coordinated Practice
The nutrient and nutritional counseling needs for normal growth and optimal health throughout the life cycle are explored. Students develop and implement teaching plans for the various age groups in the clinical experience. Prerequisite(s): Must be admitted to the Dietetic Technician program (10-313-1), completion of or currently enrolled in DIETNT-156.

DIETNT-167 Credits: 2
Food Service Management 2: Coordinated Practice
Through clinic experiences, students learn modern management techniques to select and train employees, maintain departmental records, purchase food and supplies, supervise meal service, plan meetings, analyze, correct problems and develop interdepartmental communication. Prerequisite(s): DIETNT-118 and completion of or currently enrolled in DIETNT-157.

DIETNT-170 Credits: 2
Nutritional Counseling Skills
The role of the nutrition therapist is studied to develop counseling relationships with a client in order to achieve behavior change for improved nutritional health. Prerequisite(s): DIETNT-125 and DIETNT-156.

DENTAL TECHNICIAN

DLABT-102 Credits: 5
Dental Anatomy
This course is a study of the development, morphology, occlusion and function of the teeth. Laboratory sessions include tooth identification, functional waxing techniques and reproduction of the teeth in wax. Prerequisite(s): Admission to the Dental Technician (30-507-1) program.

For more information: matc.edu or 414-297-MATC.
DLABT – EDF

DEGREE/DIPLOMA COURSE DESCRIPTIONS

DLABT-111 Credits: 5
Introduction to Complete Dentures
This course is an introduction to complete dentures. The lecture sessions will cover the theory of complete denture fabrication. The lab sessions will include the procedures utilized to fabricate complete dentures. Lab projects include fabricating custom impression trays, base plates and occlusion rims, model articulation, tooth arrangement, denture wax-up, investing, boiling-out and packing, processing, selective grinding, finishing and polishing complete dentures. Repairs and relines will also be studied. Prerequisite(s): Completion of or currently enrolled in DLABT-102.

DLABT-121 Credits: 5
Introduction to Crown and Bridge
This course is an introduction to the theories and techniques required to design and fabricate cast metal crowns and bridges. Lecture topics include the theories of model and die production, pattern design, pattern making, investing, casting, finishing and polishing cast metal crowns and bridges. In the laboratory sessions, cast metal crowns and bridges are fabricated. Projects include model and die production, pattern waxing, spraying and investing, burn-out, casting, finishing and polishing metal crowns and bridges. Prerequisite(s): DLABT-128.

DLABT-128 Credits: 4
Dental Ceramics
This course is an introduction to the theories and techniques required to design and fabricate porcelain-fused-to-metal crowns and bridges. Lecture topics include substructure design, chemistry of dental porcelain and metal alloys, and fundamentals of porcelain application. Color science and shade modification are also studied. Laboratory projects include model and die production, substructure fabrication, porcelain application, and finishing and polishing procedures. Prerequisite(s): DLABT-121.

EBUS-118 Credits: 3
Social Media Technologies
This course provides an in-depth study on how social media is changing the way that companies are marketing to their audience and interacting directly with their customers. Hands-on activities using current and emerging social media tools and technologies, and how such tools can be used by both traditional and ebusinesses alike, are included. Practical social media marketing case studies will also be covered.

EBUS-165 Credits: 3
Web and Social Media Marketing
This course examines, analyzes and evaluates marketing issues facing firms wishing to employ the internet and emerging electronic media. The class combines lecture, discussion, case studies, student presentations, and computer lab assignments.

EBUS-174 Credits: 3
Business Information Systems
Students will review the components needed to support ebusiness applications. The integration of traditional business systems such as inventory, purchasing and shipping into an ecommerce website will be discussed. Emphasis will be placed on the fulfillment side of the business. Differences between internet, intranet and extranet will be explored, ebusiness will also be discussed including electronic data interchange (EDI) security, application development and Web 2.0.

EBUS-188 Credits: 1
eBusiness Portfolio
As part of the activities of this course, students prepare a portfolio which represents the diversity and caliber of their work. Participation in an annual portfolio exhibit is required. Prerequisite(s): MKTG-117, MKTG-173, BADM-134, VICOM-123 and VICOM-152.

EBUS-191 Credits: 3
eBusiness Relationship Management
This course focuses on customer-centric knowledge management in ebusinesses. Focus of this course is to explain the fundamental concepts and applications of knowledge management in ebusiness and customer relationship management. This is not a technology course dealing with the implementation of the system, but is a higher level strategy-driven discussion about the development of the blueprint for the system and the impact it will have on the business. This class is a guide to the systems development. Through reading, lecture, projects, case studies, speakers and web analysis, students will formulate CRM management strategies.

EBUS-198 Credits: 1
eCommerce Internship/Field Project
Utilizing a career management approach, students enhance their e commerce/web administration skills by working directly with area employers. With faculty approval, either a supervised internship experience or detailed field project is used to demonstrate the student’s ability to successfully work in a business environment. Prerequisite(s): 32 EBUS credits.

EBUS-199 Credits: 1
eCommerce Internship/Field Project
Utilizing a career management approach, students enhance their e commerce/web administration skills by working directly with area employers. With faculty approval, either a supervised internship experience or detailed field project is used to demonstrate the student’s ability to successfully work in a business environment. Prerequisite(s): 32 EBUS credits.

ECON-201 Credits: 3
Principles of Microeconomics
This course covers the following topics: price mechanisms, price determination in the products and factors markets, analysis of market structures, business decisions with regard to cost analysis, output determinations and employing factors of production. Other topics such as regulation vs. deregulation, international trade and economic development will also be discussed.

ECON-202 Credits: 3
Principles of Macroeconomics
This course covers national income and product analysis, financial institutions and the Federal Reserve System, as well as macroeconomic models and their application to the problems of inflation, unemployment and business fluctuations. The lines between economic problems, theory and public policy are emphasized.

EDF-182 Credits: 1
Preparation for the Pre-Professional Skills Test
This course provides pre-education students with an overview of the PPST/PRAXIS I test battery, including: (1) why it is required for admission to schools of education in the state of Wisconsin, (2) what content knowledge and skills are tested, and (3) how to prepare for test success with an emphasis on developing and reinforcing reasoning skills. Students will take a practice test and then be guided through an item-by-item analysis to help target areas in need of improvement. Prerequisite(s): ENG-202 and either MATGEN-110 or satisfactory MATC placement test score.

EDF-249 Credits: 2
Orientation to Urban Teaching
This course is designed for the student who is interested in exploring a career in urban K-12 teaching. Students examine the early history and philosophies of schooling, United States Abstract writing with APA documentation style is practiced. A classroom observation in the Milwaukee Public Schools system requires criminal background and TB check.

For more information: matc.edu or 414-297-MATC. Page 218
EDF – ELCTEC

DEGREE/DIPLOMA COURSE DESCRIPTIONS

EDF-253  Credits: 3
Issues in Urban Teaching
This course provides students with an opportunity to explore issues related to urban teaching and to familiarize themselves with programs and curriculum offered in the Milwaukee Public Schools system. Students also continue exploring career opportunities in teaching through observations in urban classrooms. Prerequisite(s): EDF-249 or SOCSCI-249 with minimum grade C.

EDF-254  Credits: 2
Field Experience in Urban K-12 Classrooms
This is a field experience/service learning course which provides an overview of school organization, professional standards, and classroom management models that have been used successfully in urban schools. Via weekly electronic journal writing in response to questions raised by the field experience and readings, students develop habits of observation and reflection. This is an opportunity for students in the teacher education program to (1) deepen their understanding of how race, language and socio-economic status impact teaching and learning, (2) learn and practice classroom management strategies, and (3) become familiar with the culture and expectations of schools and classrooms in the Milwaukee Public Schools system. Prerequisite(s): EDF-253 or SOCSCI-253.

EDF-255  Credits: 3
Introduction to Teaching
This course is intended for students who wish to pursue a degree in education at a four-year college. The course introduces students to the profession of education and the roles of teachers. It provides an understanding of the context in which education is delivered in culturally pluralistic settings and an opportunity to gain knowledge and experience in the interpersonal, observational and organizational skills that underlie teaching. Prerequisite(s): Consent of instructor is required to enroll in this course.

ELECTRONIC TECHNOLOGY

ELCTEC-100  Credits: 2
Electronics Co-Op
This course provides an opportunity to gain on-the-job training related to the electronics program in which the student is enrolled. The activities will be coordinated between industry and the student through the MATC co-op coordinator. Prerequisite(s): ELCTEC-140 or ELCTEC-119.

ELCTEC-102  Credits: 3
Introductory Electronics
This course introduces basic electricity and electronics including simple circuit fabrication and measurements while applying related mathematics. Hands-on lab activities will reinforce concepts. Electronic careers and programs will be explored. Prerequisite(s): Completion of or currently enrolled in MATGEN-110.

ELCTEC-108  Credits: 2
Fundamentals of DC/AC 1
This course is designed for students interested in electronics technology while enhancing their basic skills in mathematics. General mathematical and algebraic skills will be reinforced while being introduced to circuits, using Ohm’s Law and associated principles. Hands-on circuit building exercises, basic electronic instruments and report writing will be emphasized in the lab. Prerequisite(s): Completion of or currently enrolled in MATH-113.

ELCTEC-109  Credits: 3
Fundamentals of DC/AC 2
This course, along with ELCTEC-108, helps complete the sequence for students requiring DC and AC Electronics 1 in Electronic Technology programs, while enhancing their mathematical skills. Emphasis will include more complex circuits with the introduction and analysis of AC circuits. Students will perform laboratory experiments and will prepare technical reports. Prerequisite(s): ELCTEC-108 and completion of or currently enrolled in MATH-113.

ELCTEC-110  Credits: 4
DC and AC Electronics 1
An introductory course that presents the scientific foundation used throughout electronics technology. Topics include DC/AC forms of current, voltage, resistance, capacitance, inductance and power. Troubleshooting practices will be emphasized and computer technologies will be used to enhance abstract theory. Students perform laboratory experiments and prepare technical reports. Prerequisite(s): Completion of or currently enrolled in MATH-115.

ELCTEC-111  Credits: 3
DC and AC Electronics 2
An extension of and enhancement to ELCTEC-110 DC and AC Electronics 1. More advanced topics such as complex networks, applicable theorems, polyphase systems, and passive filters will be discussed. Computer simulation software will be used to reinforce theoretical analyses. Prerequisite(s): ELCTEC-110 or ELCTEC-115 and completion of or currently enrolled in MATH-116.

ELCTEC-115  Credits: 4
DC and AC Electronics 1 – Interactive
This is an alternative delivery, interactive course equivalent to ELCTEC-110. Theory presented via multimedia is reinforced by lab experimentation and written technical reports. Prerequisite(s): Completion of or currently enrolled in MATH-115.

ELCTEC-116  Credits: 3
DC and AC Electronics 2 – Interactive
This is an alternative delivery, interactive course equivalent to ELCTEC-115. Theory presented via multimedia is reinforced by lab experimentation and written technical reports. Prerequisite(s): ELCTEC-110 or ELCTEC-115 and completion of or currently enrolled in MATH-116.

ELCTEC-117  Credits: 3
Digital Electronics – Interactive
This is an alternative delivery interactive course equivalent to ELCTEC-130. Theory presented via multimedia is reinforced by lab experimentation and written technical reports. Prerequisite(s): Completion of or currently enrolled in ELCTEC-115 and MATH-115.

ELCTEC-118  Credits: 4
Electronic Devices and Circuits – Interactive
This is an alternative delivery, interactive course equivalent to ELCTEC-120. Theory presented via multimedia is reinforced by lab experimentation and written technical reports. Prerequisite(s): ELCTEC-110 or ELCTEC-115 and completion of or currently enrolled in MATH-116 and ELCTEC-116.

ELCTEC-119  Credits: 3
Introduction to Microprocessors – Interactive
This introductory course is equivalent to the ELCTEC-140 course. It is an alternative delivery course that presents microprocessor basics, including number systems and codes, terms and conventions, arithmetic, programming and interfacing. Lab experimentation reinforces theory. Prerequisite(s): ELCTEC-117 or ELCTEC-130 and completion of or currently enrolled in ELCTEC-118 and MATH-116.

ELCTEC-120  Credits: 4
Electronic Devices and Circuits
The basic operating principles of diodes, transistors, thyristors and linear integrated circuits are presented as they are used in rectifier, amplifier and oscillator circuits. Theory is reinforced with laboratory assembly, measurements, troubleshooting and technical report writing. Prerequisite(s): ELCTEC-110 or ELCTEC-115 and completion of or currently enrolled in MATH-116 and ELCTEC-111.
ELCTEC DEGREE/DIPLOMA COURSE DESCRIPTIONS

ELCTEC-121 Credits: 3
Advanced Electronic Devices and Circuits
This course is a continuation of ELCTEC-120 with additional emphasis on transistor models, IC amplifiers, oscillators, active filters, integrators and differentiators, waveshaping and control circuits. Circuit theory is reinforced with laboratory activities and technical report writing. Prerequisite(s): ELCTEC-118 or ELCTEC-120.

ELCTEC-124 Credits: 3
Electronic Circuit Analysis
This course covers advanced topics associated with the analysis of electronic devices and circuits. Students are introduced to using frequency as a variable when analyzing electronic circuits. Bode plots will be used to describe circuit characteristics, and the analysis of resonant circuits will be covered in detail. Small signal analysis of transistor amplifiers will be emphasized to reinforce theoretical analyses. Students will perform laboratory experiments and will prepare technical reports. Prerequisite(s): ELCTEC-112 and ELCTEC-121.

ELCTEC-130 Credits: 3
Digital Electronics
This is an introductory course in digital logic devices and circuits. Students will learn the basic logic functions, sequential and synchronous logic circuitry, general applications and troubleshooting techniques through hands-on lab work. The computer will be used to generate circuit simulations and technical reports. Prerequisite(s): Completion of or currently enrolled in ELCTEC-110 and MATH-I15.

ELCTEC-131 Credits: 3
Advanced Digital Electronics
This is a continuation of ELCTEC-130 Digital Electronics. It provides an in-depth study of logic family specifications, sequential circuits, A/D and D/A, as well as PLD operation and design. Design procedures and design verifications will be demonstrated. Laboratory work will help students gain skill and competence in digital circuit design and troubleshooting. Prerequisite(s): ELCTEC-117 or ELCTEC-130 and completion of or currently enrolled in ELCTEC-120.

ELCTEC-133 Credits: 4
Medical Imaging Equipment
Students develop a foundation in the field of medical imaging with a focus on x-ray systems service. Topics include applications and equipment theory for radiographic, fluoroscopic, vascular and cardiac imaging systems. Classroom knowledge is enhanced through hands-on lab activities that replicate real work situations. Students will calibrate, troubleshoot and repair a variety of radiographic and mammographic equipment. Prerequisite(s): ELCTEC-134, ELCTEC-137, NATSCI-I177, and completion of or currently enrolled in ELCTEC-176.

ELCTEC-134 Credits: 4
Biomedical Instrumentation
Students are introduced to the fundamentals of biomedical instrumentation and associated technologies. System and safety tests and measurements are performed using typical equipment found in area healthcare facilities. Students reinforce theoretical concepts while developing practical troubleshooting skills. Prerequisite(s): ELCTEC-120 or ELCTEC-118 and NATSCI-I177 and completion of or currently enrolled in ELCTEC-140.

ELCTEC-137 Credits: 2
Biomedical Electronics Technician Internship 1
Students are assigned to area hospitals or clinical technicians to assist with preventive maintenance, calibration and repair of medical equipment. The use and operation of basic test equipment is introduced along with guidelines for properly documenting procedures. Prerequisite(s): Completion of or currently enrolled in ELCTEC-134.

ELCTEC-138 Credits: 2
Biomedical Electronics Technician Internship 2
Under the supervision of hospital or clinic technicians, students enhance their skills by troubleshooting patient care and diagnostic equipment, and various medical imaging systems. Prerequisite(s): ELCTEC-137 and ELCTEC-134 and completion of or currently enrolled in ELCTEC-133.

ELCTEC-139 Credits: 3
Advanced Biomedical Electronics
This course is designed to help prepare students in the biomedical electronics field for taking related professional certification exams. Equipment demonstrations, along with in-depth technical discussions, will culminate internship experiences and previous classroom instruction as it relates to biomedical equipment technician certification. Prerequisite(s): Completion of or currently enrolled in ELCTEC-133 and ELCTEC-138.

ELCTEC-140 Credits: 3
Microprocessors
Students apply microprocessor and bus concepts by designing and building a parallel port, serial port, memory board and other modules that interface to an Intel-based PC system. Diagnostic software is written and oscilloscope measurements are made to test and troubleshoot interfaces built in the lab. Prerequisite(s): ELCTEC-130 or ELCTEC-117 and completion of or currently enrolled in ELCTEC-120 and MATH-I16.

ELCTEC-141 Credits: 3
Microcontrollers
This course covers the operation and applications of microcontrollers. Programming and interfacing of these devices and their peripherals are discussed in lecture and experienced in laboratory projects. Prerequisite(s): ELCTEC-140 or ELCTEC-119.

ELCTEC-154 Credits: 3
Electronic Communications
The traditional aspects of electronic communications, such as amplitude modulation (AM) and frequency modulation (FM), are studied. Important elements underlying data communication theory and systems are focused on as well. A unique approach, through the aid of laboratory exercises, will help develop abstract concepts into practical skills. Prerequisite(s): ELCTEC-111 or ELCTEC-116 and ELCTEC-120 or ELCTEC-118 and completion of or currently enrolled in ELCTEC-140.

ELCTEC-155 Credits: 4
TV Broadcast Systems
This course focuses on the technical aspects of analog and digital broadcast television and radio. Transmit and receive systems along with the discussion of operational parameters are emphasized. Associated FCC rules and regulations in the broadcast industry are also introduced. Signal analysis and equipment diagnosis are used in the lab to reinforce theory and aid in developing troubleshooting skills. Prerequisite(s): ELCTEC-140 or ELCTEC-119 and completion of or currently enrolled in ELCTEC-154.

ELCTEC-156 Credits: 4
Advanced Electronic Communications
Advanced study in electronic communications is presented, including wireless communication systems and equipment. Wave propagation, antenna theory, high frequency systems and FCC rules and regulations are introduced in this class; while lab exercises incorporating working systems reinforce the theory. Prerequisite(s): ELCTEC-154.

ELCTEC-157 Credits: 2
Telephone Systems
Students study plain old telephone systems (POTS) and equipment, with digital system theory incorporated where appropriate. The physical aspects of equipment interfacing with customer premise equipment, telephone switches, modems, computers and general data communication equipment are presented. Prerequisite(s): ELCTEC-140 or ELCTEC-119 and completion of or currently enrolled in ELCTEC-154.

ELCTEC-158 Credits: 2
Digital Communications Systems
This course is an introduction to digital communication and modulation techniques. After the introduction of source and line coding, methods of modulation and demodulation are studied. A block diagrammatic approach is used for experimenting with various formats. Discovery-based learning driven by computer technologies is used to enhance the theoretical concepts presented. Prerequisite(s): ELCTEC-154.
ELCTEC-162 Credits: 1
Digital Communications
This course is a lab-only version of ELCTEC-158. It provides an introduction to digital communications systems in a lab-based format. Discovery-based learning driven by computer technologies is used to enhance the theoretical concepts. Prerequisite(s): ELCTEC-154.

ELCTEC-165 Credits: 2
TV Broadcast Workshop 1
Students are introduced to the real-time operation of broadcast television in a state-of-the-art analog and digital facility. With the aid of professional broadcast engineers, students perform various operational and maintenance duties. An opportunity to assist in station productions is included. Prerequisite(s): ELCTEC-140 or ELCTEC-119 and completion of or currently enrolled in ELCTEC-155 and ELCTEC-154.

ELCTEC-166 Credits: 2
TV Broadcast Workshop 2
This course is a continuation of ELCTEC-165 TV Broadcasting Workshop 1. It provides the opportunity to enhance and acquire some additional skills. Advanced areas of operations and maintenance are included. Various options for production operations are offered throughout the semester. Prerequisite(s): ELCTEC-165 and completion of or currently enrolled in ELCTEC-166 and ELCTEC-188.

ELCTEC-170 Credits: 3
Computer Systems
Students install, configure and upgrade current computer-based hardware including system boards, memory, interface cards, printers and drives. Windows XP with internet and printing capability is installed, configured, protected, updated and used. Word and Excel documents are created. Students browse, search, email and transfer files on the internet. The internet is also used to obtain drivers and current computer technical documentation. Prerequisite(s): Completion of or currently enrolled in MATH-113.

ELCTEC-172 Credits: 3
Input/Output Programming
Students develop C programming language and Intel microprocessor language programs that monitor and control keyboards, displays, printers, serial devices and disk drives. To perform these tasks efficiently, a library of input/output functions is built that consists of ROM BIOS, operating system, and student-written function calls. Prerequisite(s): ELCTEC-173 and ELCTEC-174.

ELCTEC-173 Credits: 3
Computing With C
This course is a survey of computer programming and operation. The C programming language is introduced, with emphasis on developing an initial understanding of the architecture common to all computers. The C language becomes a tool in subsequent computer courses. Prerequisite(s): ELCTEC-140 or ELCTEC-119.

ELCTEC-174 Credits: 3
Hardware Systems
Students install, configure, upgrade, maintain, repair and learn the theory and operation of current computer hardware. Modular level troubleshooting techniques are introduced and developed. Computers, printers, displays and other devices are disassembled, analyzed and assembled. Technical manuals and the internet are used to obtain current computer technical documentation. Prerequisite(s): ELCTEC-170 and completion of or currently enrolled in ELCTEC-173.

ELCTEC-176 Credits: 3
Serial Communications and Networks
Students install, configure, test and solve compatibility problems with networked workstations and servers. Print servers, TCP/IP printers, routers, switches and other network devices are installed, configured for security and tested. Web, FTP, DHCP and DNS services are added and tested on Windows and Netware servers. Fundamental user and group management tasks are performed. Various communications media and technologies also are studied. Prerequisite(s): ELCTEC-170 and either ELCTEC-119 or ELCTEC-140.

ELCTEC-178 Credits: 3
Software Systems
Students install the current Windows operating systems, then add service packs, security, critical updates, printer and network services, and other essential components. Configuration, maintenance, troubleshooting and repair tools, integrated into Windows, are examined and utilized. Command line tools are also used. The iMac OS X operating system is installed, upgraded and maintained. The internet is used as a tool to obtain drivers and technical information. Prerequisite(s): Completion of or currently enrolled in ELCTEC-173.

ELCTEC-179 Credits: 3
Advanced Computer Systems
Students learn and practice powerful strategies to identify, isolate and correct failing hardware and software at the component and modular levels. Windows is installed using alternate methods including unattended installation and cloning. Students install the Linux operating system, add web and FTP services, create and manage users and groups, and write scripts. Prerequisite(s): ELCTEC-174 and ELCTEC-178.

ELCTEC-186 Credits: 1
Fabrication Techniques
This course is a practical approach to construction/repair of electronic equipment. Topics include shop safety, soldering techniques including SMDs, connectors, fasteners, ESD control, use of hand and power tools, PC board layout, schematic interpretation, and industrial/military standards. The course includes projects in which theories of topics are applied. Prerequisite(s): ELCTEC-110 or ELCTEC-115.

ELCTEC-192 Credits: 2
Basic Industrial Hydraulics/Pneumatics
Students are introduced to symbology, diagram logic, operation and application of various hydraulic/pneumatic devices used on an automated machine or automated process as they apply to electronic technology. Prerequisite(s): ELCTEC-140 or ELCTEC-119.

ELCTEC-195 Credits: 4
Motors and Controls
This course covers the operational characteristics of DC and AC motors, generators and transformers, with particular emphasis on applications. Servometers, tachometers, synchros, and resolvers are studied. Prerequisite(s): ELCTEC-111.

ELCTEC-196 Credits: 3
Programmable Controllers
This course is a study of programmable controllers. The history and principles of operation and the installation, programming and maintenance of the programmable controller are covered in lecture, demonstration and laboratory exercises. Prerequisite(s): ELCTEC-110 and ELCTEC-130.

ELCTEC-197 Credits: 3
Variable Speed Drive Systems
This course covers the operating characteristics of various types of motors and the operation of devices used in power control. Theory of operation and troubleshooting of speed controls and variable frequency drives are emphasized. Prerequisite(s): ELCTEC-140 and ELCTEC-198.

ELCTEC-198 Credits: 3
Advanced Programmable Controllers
This course is a study of advanced programmable controller concepts. The advanced features and instructions of the programmable controller are covered in lecture, demonstration and laboratory exercises. The student will apply these concepts to interface the PLC to HMI equipment, robots, VFD motor controls and various communication protocols. Prerequisite(s): ELCTEC-196.

ELCTEC-199 Credits: 3
Automated Systems
Built upon knowledge of machinery and control fundamentals from previous courses, the student will develop a systems approach to the control of manufacturing operations and industrial process. Systems are analyzed using block diagrams with programmable controllers and robotics incorporated into the systems. Prerequisite(s): ELCTEC-195, ELCTEC-196 and completion of or currently enrolled in ELCTEC-192.

For more information: matc.edu or 414-297-MATC. Page 221
ELECTRICITY

ELECTY-100 Credits: 5
Principles of Electricity
This course presents the fundamentals of direct and alternating current circuits. Various topics such as electrical instruments, electrical test procedures, and electrical symbols are covered. Lectures are reinforced by lab experiments.

ELECTY-120 Credits: 2
Electric Motor Control Wiring
Motor control diagrams are analyzed. Shop jobs are applied to control circuits. Motor control wiring skills are developed. Prerequisite(s): ELECTY-100, ELECTY-308 and ELECTY-340.

ELECTY-130 Credits: 2
Solid State Devices
The basic theories of diodes, transistors, and thyristors will be studied. The application of these in industrial process controls is analyzed. In addition, students study transducers used in control circuits for sensing heat, light, pressure and more. Prerequisite(s): ELECTY-100.

ELECTY-140 Credits: 4
Electrical Apparatus
This course covers the construction and principles of operation of transformers, and both DC and AC motors and generators. Lab experiments are designed to verify operational characteristics by testing the various types of electrical apparatus. Prerequisite(s): ELECTY-100.

ELECTY-150 Credits: 2
PLC Basics
An introduction to number systems and basic digital terminology leads into the principles of PLCs. Prerequisite(s): ELECTY-100.

ELECTY-155 Credits: 1
Hydraulics/Pneumatics
Students are introduced to symbology, diagram logic, operation and application of various hydraulic/pneumatic devices used on an automated machine or automated process. Prerequisite(s): Completion of or currently enrolled in ELECTY-100.

ELECTY-308 Credits: 2
Basic Skills for Electrical Wiring
Students learn the basic skills and basic code rules used in the electrical trade. Several of these skills are developed by repetition while wiring practical lighting control circuits. Prerequisite(s): Completion of or currently enrolled in ELECTY-392.

ELECTY-310 Credits: 2
Cable Wiring
Trade skills are developed through installing, connecting and controlling the common types of lighting circuits using metal-clad and nonmetallic sheathed cable. The work consists of practical shop jobs. Application of electrical code rules pertaining to concealed wiring is part of each job. Prerequisite(s): Completion of or currently enrolled in ELECTY-308.

ELECTY-312 Credits: 2
Electrical Raceway Installation
Training is given in the use of hand benders. Mechanical benders, hydraulic benders and wire pulling techniques are covered. The bending skills are utilized by doing several typical conduit installation jobs. Prerequisite(s): Completion of or currently enrolled in ELECTY-308.

ELECTY-314 Credits: 1
Electrical Service Installation
Practical experience is provided in wiring, installing and connecting the various types of services for lighting, heating and power. A study is made of single-phase and three-phase services requirements and code rules applicable to service installations. Prerequisite(s): ELECTY-392, ELECTY-308 and ELECTY-340.

ELECTY-318 Credits: 5
Electrical Power Distribution 1A
This course is an introduction to electrical power distribution systems. Emphasis is on the setting and securing of poles, mounting equipment on the poles and the stringing of power lines. Students work on in-class mockups and on real-height, outdoor setups. Safety is emphasized. Prerequisite(s): Admission to Electrical Power Distribution program (31-413-2).

ELECTY-319 Credits: 4
Electrical Power Distribution 1B
This course is an introduction to electrical power distribution systems. Emphasis is on the setting and securing of poles, mounting equipment on the poles, and the stringing of power lines. Students will be working on in-class mockups and also on real-height, outdoor setups. Safety is emphasized. Prerequisite(s): ELECTY-318.

ELECTY-320 Credits: 4
Electrical Principles and Applied Math 1
This introduction to basic electrical principles includes a review of arithmetic and the basics of algebra, which are applied to the solution of electrical problems. The course provides an introduction to DC circuits. Prerequisite(s): Admission to Electrical Power Distribution program (31-413-2) and completion of or currently enrolled in ELECTY-319.

ELECTY-321 Credits: 2
Line Mechanic Rescue and Safety
Instruction in pole top rescue, safety, accident prevention and analysis, electrical shock treatment and accident reporting. Standardized basic first responder and CPR training are included. Prerequisite(s): Admission to Electrical Power Distribution program (31-413-2) and completion of or currently enrolled in ELECTY-319.

ELECTY-322 Credits: 5
Electrical Power Distribution 2A
This course is a continuation of ELECTY-321 Electrical Power Distribution 1, with emphasis on modification of existing installations and live work. The student reads maps and system plans. Maintaining systems clearance and the use of chain saws are covered. Prerequisite(s): ELECTY-319.

ELECTY-323 Credits: 4
Electrical Power Distribution 2B
This course is a continuation of ELECTY-322; it features underground (URD) and street lighting systems. Prerequisite(s): ELECTY-322.

ELECTY-324 Credits: 4
Electrical Principles and Applied Math 2
The course will continue and conclude the study of DC circuits. This is followed by an introduction to trigonometry with applications to AC circuits and devices. Prerequisite(s): Admission to Electrical Power Distribution (31-413-2), and completion of or currently enrolled in ELECTY-323.

ELECTY-328 Credits: 2
Electric Motor Control Wiring
Motor control diagrams are analyzed. Shop jobs are applied to control circuits. Motor control wiring skills are developed. Prerequisite(s): ELECTY-392, ELECTY-308 and ELECTY-340.

ELECTY-340 Credits: 2
Electrical Code Fundamentals 1
A study is made of the code rules used most frequently by practicing electricians so that students may acquire a working knowledge of those rules. Prerequisite(s): Completion of or currently enrolled in ELECTY-392.

ELECTY-341 Credits: 1
Electrical Code Fundamentals 2
Students perform a comprehensive study of the NEC and Wisconsin electrical codes and develop skill in code interpretations, as applied to all phases of electrical work. Prerequisite(s): ELECTY-340.

ELECTY-378 Credits: 1
Construction Blueprint Reading
Students study the various types of drawings used in building construction. The reading and interpretation of not only the electrical plan, but also the structural, plot floor, plumbing, sheet metal and other plans are presented. Prerequisite(s): Completion of or currently enrolled in ELECTY-308.

ELECTY-382 Credits: 1
Electrical Equipment Circuit Analysis
The circuits, materials and installation of electrical equipment for residential heating, ventilating and air conditioning systems are studied. Various wiring diagrams are converted to practical installation layouts. Prerequisite(s): ELECTY-392 or ELECTY-391.
ELECTY-384  
Electrical Design and Estimating  
Credits: 1
Students draw on their knowledge from previous wiring courses to design and estimate several typical residential installations. Municipal licensing requirements and applicable code articles are studied. Prerequisite(s): ELECTY-310 and ELECTY-312.

ELECTY-386  
Solid State Devices  
Credits: 2
This course presents a comprehensive overview of solid state devices. Emphasis is on the practical applications of solid state power control. All lectures are back up by a lab to assure understanding of concepts. Prerequisite(s): ELECTY-392 or ELECTY-391.

ELECTY-390  
Principles of Electricity 1  
Credits: 3
This introductory course in DC/AC fundamentals offers hands-on experience in both the theoretical and practical phases of electricity. Developing skills and techniques associated with electrical circuits and test equipment will be emphasized.

ELECTY-391  
Principles of Electricity 2  
Credits: 2
This course is a continuation of ELECTY-390. Principles of Electricity 1. It provides a more in-depth study of DC/AC circuits with special emphasis on reactive circuits and power factor. In combination, the ELECTY-390 and ELECTY-391 course sequence equates in content to the five-credit ELECTY-392 course. Prerequisite(s): ELECTY-390.

ELECTY-392  
Principles of Electricity 3  
Credits: 5
This course presents the fundamentals of direct and alternating current circuits. Various topics such as electrical instruments, electrical test procedures and electrical symbols are covered. Lectures are reinforced by lab experiments. Required math topics are presented during the course.

ELECTY-394  
Electrical Apparatus  
Credits: 4
This course covers the construction and principles of operation of transformers and both DC and AC motors and generators. Lab experiments are designed to verify operational characteristics by testing the various types of electrical apparatus. Prerequisite(s): ELECTY-392 or ELECTY-391.

ELECTY-395  
Electricity for Power Engineering  
Credits: 3
Basic fundamentals of electricity in the power engineering field of facility maintenance, equipment operation, and repair and power generation are covered.

ELECTY-396  
HVAC/R Electrical Systems  
Credits: 2
This is a lab course designed to provide the heating, air conditioning and refrigeration student with hands-on experience in wiring mockups of HVAC/R systems. Students operate, analyze, describe sequences, and test these systems using various test instruments. Prerequisite(s): Completion of or currently enrolled in ELECTY-398.

ELECTY-397  
Electrical Wiring Methods for Air Conditioning and Refrigeration  
Credits: 1
This course is designed to familiarize the student with the wiring methods used for heating, air conditioning and refrigeration circuits. It also covers the use of wiring diagrams and the application of specifications and wiring codes.

EMERGENCY MEDICAL SERVICES

EMS-192  
Emergency Medical Technician – Basic  
Credits: 5
The Emergency Medical Technician (EMT) – Basic course is five credits of the 70 credits required in the Fire Protection Technician program. This course also serves as a vital link in the chain of the healthcare team. The EMT can recognize the nature and seriousness of the patient condition or extent of injuries to assess requirements for emergency medical care. The EMT will administer appropriate care based on assessment findings. The EMT will lift, move, position, and otherwise handle and transport the patient to minimize discomfort and prevent further injury.

EMS-301  
Emergency Medical Technician  
Credits: 5
This course is designed to provide knowledge and skills training in the area of pre-hospital emergency medicine with an emphasis on transport of sick and injured persons. This course provides students with the training necessary to participate in the state of Wisconsin examination for licensure as an Emergency Medical Technician. Prerequisite(s): Completion of or currently enrolled in EMS-301.

Advanced Intermediate Technician  
Credits: 4
EMT-Intermediate Technician students are Wisconsin licensed EMT-Basics seeking to upgrade their skills to the EMT Intermediate Technician level. EMT Intermediate Technician students perform emergency patient care, basic life support, and limited advanced life support in the field, transporting injured and ill patients to hospital emergency departments. They also perform care in hospital emergency departments. Prerequisite(s): EMS-301.

EMS-911  
Paramedic Fundamentals  
Credits: 2
This course provides the paramedic student with comprehensive knowledge of EMS systems, safety, well-being, legal issues and ethical issues, with the intended outcome of improving the health of EMS personnel, patients and the community. The students will obtain fundamental knowledge of public health principles and epidemiology as is related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations helps to foster the development of effective written and oral communications with colleagues and other healthcare professionals. Prerequisite(s): Student must be admitted to the Paramedic Technician program.

EMS-912  
Advanced Patient Assessment Principles  
Credits: 4
This course teaches the paramedic student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. By utilizing a structured and organized assessment process with knowledge of anatomy, physiology, pathophysiology, lifespan development, and changes that occur to the human body with time, the students will learn to develop a list of differential diagnoses through clinical reasoning, along with the ability to modify the assessment as necessary to formulate a treatment plan for their patients. Prerequisite(s): Completion of or currently enrolled in EMS-912.

EMS-913  
Advanced Prehospital Pharmacology  
Credits: 3
This course provides the paramedic student with the comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the overall health of the patient. Prerequisite(s): Completion of or currently enrolled in EMS-913.
EMS – ENG

DEGREE/DIPLOMA COURSE DESCRIPTIONS

EMS-915 Credits: 2
Paramedic Respiratory Management
This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a patient with a respiratory complaint. Prerequisite(s): Completion of or currently enrolled in EMS-914.

EMS-916 Credits: 4
Paramedic Cardiology
This course teaches the paramedic student to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a cardiovascular complaint. Prerequisite(s): Completion of or currently enrolled in EMS-915.

EMS-917 Credits: 3
Paramedic Clinical/Field 1
Students have the opportunity to enhance their learning through the practice of paramedicine in field and healthcare environment experiences, with actual patients under the supervision of instructors or approved preceptor. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Prerequisite(s): Completion of or currently enrolled in EMS-916.

EMS-918 Credits: 1
Advanced Emergency Resuscitation
By teaching Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) methodologies and protocols, this course prepares the paramedic student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest and peri-arrest states, with an emphasis placed on early intervention as a means to prevent respiratory and/or cardiac arrest if possible. Prerequisite(s): EMS-917.

EMS-919 Credits: 4
Paramedic Medical Emergencies
This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a medical complaint. Prerequisite(s): Completion of or currently enrolled in EMS-918.

EMS-920 Credits: 3
Paramedic Trauma
This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for an acutely injured patient. Prerequisite(s): Completion of or currently enrolled in EMS-919.

EMS-921 Credits: 3
Special Patient Populations
This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma, are also included within this course. Prerequisite(s): Completion of or currently enrolled in EMS-920.

EMS-922 Credits: 1
EMS Operations
This course will provide the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public and EMS personnel safety. Prerequisite(s): Completion of or currently enrolled in EMS-921.

EMS-923 Credits: 1
Paramedic Capstone Assessment
This course provides the student with a final opportunity to incorporate cognitive knowledge and psychomotor skills through labs and scenario-based practice and evaluations prior to taking the National Registry written and practical examinations. Technical skills attainment (TSA) for each student will be compiled and/or documented within this course as required by the DHS-approved paramedic curriculum. Prerequisite(s): Completion of or currently enrolled in EMS-922.

EMS-924 Credits: 4
Paramedic Clinical/Field 2
Students have the opportunity to enhance their learning through the practice of paramedicine in field and healthcare environment experiences, with actual patients under the supervision of instructors or approved preceptor. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by WI-DHS-EMS. Prerequisite(s): Completion of or currently enrolled in EMS-919.

ENGLISH/COMMUNICATION SKILLS

ENG-151 Credits: 3
Communication Skills 1
This course is designed to improve the student’s speaking, writing and listening skills through practical reading, writing, listening and speaking assignments. Particular emphasis is placed on the writing of sentences, paragraphs and essays, as well as the construction and presentation of short speeches. Prerequisite(s): Satisfactory MATC placement test score.

ENG-152 Credits: 3
Communication Skills 2
Continuation of ENG-151 Communication Skills 1. Emphasis is placed on the practical application of communication skills through group discussion, persuasion, business writing, the mass media and literature. Prerequisite(s): ENG-151.

ENG-201 Credits: 3
English 1
Introduces students to the basic principles of college-level composition, research, critical reading and critical thinking with an emphasis on academic writing conventions. In addition to examining the content and structure of academic essays, instruction in sentence structure and usage is provided as needed. Written work for this course consists of essays that are expository and analytical in nature. Major attention also is given to the preparation and writing of a research essay through writing assignments that emphasize finding, evaluating and incorporating appropriate secondary sources into students’ written work. Prerequisite(s): Satisfactory MATC placement test score or ENG-152.

ENG-202 Credits: 3
English 2
The intent is to give students training beyond ENG-201 in advanced composition, research and critical thinking by reading a selection of literary genres chosen by the instructor. Students will increase their understanding and appreciation of the genres by analyzing and writing about prose fiction, drama and poetry. Writing assignments and essays will consist of literary analysis, persuasion and, when appropriate, the use of secondary sources. Major attention also is given to the preparation and writing of a research essay through writing assignments which emphasize finding, evaluating and incorporating appropriate secondary sources into students’ written work. Prerequisite(s): ENG-201 with minimum grade C.

ENG-204 Credits: 1
Industrial Artists: Voices and Visions
This class connects the appreciation of one’s trade to the appreciation of art. The students will develop a deeper level of understanding
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<td>African-American Literature 2</td>
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<td>Native American Literature</td>
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Communications 1
This course is designed for students preparing to enter an occupation and focuses on practical use of written and oral language in the workplace, including cover letters, résumés, job interviews, telephone skills, and various formal and informal writing.

Communications 2
This course is designed for students preparing to enter an occupation and focuses on practical use of written and oral language in the workplace, including cover letters, résumés, job interviews, telephone skills, and various formal and informal writing.

ENTREPRENEURSHIP/ SMALL BUSINESS

Introduction to Entrepreneurship
This course takes the student from idea creation to development to monetization. Students will understand market forces, accentuate internal strengths, and evaluate market potential. Sections on building the management team, constructing operations, and financing the venture will be studied.

New Product Development
This course takes the idea for the product or service, researches the size of the market, and develops a plan to address the market. Understanding how the consumer values the product or service, and how to increase that usage or awareness will be stressed. Sections covered will be estimating the physical size or value of the market, pricing, creating a cohesive marketing plan, and building a distribution channel.


African American Literature
By And About Black Women
This course provides a reflection of women's social, economic and legal status, past and present. The course analyzes and evaluates literature written by and about black women with the goal of focusing our critical energy on recovering "her-story" as well as attaining keener insights into the important role of these women in both historical and contemporary life. Prerequisite(s): ENG-152 or ENG-201.

Holocaust Literature: Out of the Ashes
This course is designed to provide an understanding of the Holocaust through a variety of literary sources. Specific emphasis is placed on Holocaust events and resulting literature. Prerequisite(s): ENG-151, ENG-152 or ENG-201.

Literature of Horror
Reflecting the deepest concerns of the society producing them, works in the horror genre are marked by evil and chaos, danger and death, fear and phantoms, the unpredictable and the inexplicable. Literature of Horror is designed to acquaint students with literary works of masters of the genre. This course analyzes and evaluates themes and issues of horror, allowing students to gain keener insights into the impact literature of horror has on society, past and present. Major attention is also given to the preparation and writing of the research paper. Prerequisite(s): ENG-151, ENG-152 or ENG-201.

Utopian and Science Fiction Literature
A survey of selected utopian and science fiction literature that examines the various trends, themes and subgenres in speculative fiction. The course concentrates on the use of these literary genres as a vehicle for social criticism and exploring contemporary concerns. Major attention is also given to the preparation and writing of the research paper. Prerequisite(s): ENG-152 or ENG-201.

Introduction to Modern Cinema
An introductory course in contemporary films. Students view and discuss how films communicate. The course also considers the major theories of film. Out-of-class assignments include viewing and critiquing films. Major attention is also given to the preparation and writing of the research paper. Prerequisite(s): ENG-152 or ENG-201.

Applied Communications
This course is designed for students preparing to enter an occupation and focuses on reading, writing, speaking and listening skills in the workplace environment. Students will develop skills necessary for effective communication on the job. Basic grammar, word usage, spelling and editing skills are taught in the context of creating cover letters and résumés, preparing for job interviews, writing letters, emails and texts, telephone usage, writing and following instructions, and preparing and giving demonstrations.

English – EnPVHel DEgrEE/DiPloMA Course DescriptIoNS

Business Plan
This course covers the writing of a business plan in detail. Starting with the Executive Summary describing the venture, to the building of the management team, explaining the operations, targeting the market goals, and to projecting the detailed financials, a comprehensive document will be prepared. Accuracy and consistency of all sections of the plan will be expected.

Strategic Business Communications 2
This course specifically develops the skills needed to present the business plan with slides, charts and graphics. Public speaking and team building will be used to enhance the presentation. Networking events will create a level of professionalism.

Small Business Plan Development
Provides potential small business owners with an introduction to the entrepreneurial principles involved in business planning and operation. Emphasis will be placed on factors that contribute to a successful business operation. Through creation of an effective business plan, learners apply financing, marketing, developing, staffing and management principles. Prerequisite(s): BADM-134 or MKTG-102.

Environmental Health

Introduction to Environmental Health/Water Quality
This is an introductory course to the field of environmental health and water quality. This study will include: air, water, soil, and food quality; along with communicable and zoonotic diseases. The roles and responsibilities of the environmental practitioner including global environmental health, water quality, sustainability, energy conservation and renewable energy applications will be discussed.

Industrial Hygiene Technology
This course acquaints the student with basic principles of ecology pertinent to the field of environmental health with emphasis on aquatic ecosystems (ponds, lakes and rivers). Various organisms are studied as indicators of environmental quality or deterioration.
ENVHEL – EPROM

ENVHEL-105
Credits: 4
Fundamentals of Hazardous Materials Control
This course covers the properties of materials commonly used in the workplace that are potentially hazardous to workers and the techniques of detection of those materials, along with proper methods of transporting and handling those materials in the workplace. Completion of coursework will lead to 40-hour OSHA HAZWOPER Certification. Prerequisite(s): ENVHEL-104.

ENVHEL-109
Credits: 4
Applied Environmental Chemistry
The applied approach to environmental chemistry provides students with a review of basic principles and laboratory techniques. The specialized focus includes environmentally related areas of water and wastewater, toxics, air, soil and hazardous materials.

ENVHEL-111
Credits: 4
Applied Water Chemistry and Analysis
Students perform sampling, measurement and interpretation of field and laboratory analyses of water resources that are used and treated for drinking water, municipal reclamation, manufacturing, industry, food, beverage, medical use, and aquatic ecosystems. The course provides students with a better understanding of water quality monitoring, water treatment and environmental laboratories. It also covers chemical safety, approved methodology, instrumentation use, regulations and QA/QC concerns. Prerequisite(s): ENVHEL-101, ENVHEL-102 and ENVHEL-109.

ENVHEL-115
Credits: 4
Air Pollution Technology
This study of the effects of air pollution includes the types of air pollution, their sources and their prevention and control. Various air pollution sampling techniques and air analysis methods are performed by the student. Prerequisite(s): ENVHEL-101, ENVHEL-102 and ENVHEL-109.

ENVHEL-119
Credits: 3
Food and Dairy Quality Control
This course covers the application of sanitation principles necessary for food and milk protection. It includes preservation, distribution and serving of food and milk. Also covered are the microbiology of foodborne diseases, food code compliance, and milk pasteurization and testing. Prerequisite(s): ENVHEL-101 and ENVHEL-173.

ENVHEL-126
Credits: 3
Environmental Lab Projects
Practical experience in environmental health is gained through individualized placement in a laboratory of an area health department, treatment plant or other environmental health firm or agency. Assignments consist of lab projects, lab placement, and also an optional internship. Prerequisite(s): ENVHEL-111 and ENVHEL-115.

ENVHEL-127
Credits: 3
Environmental Field Projects
Practical experience in environmental health is gained through placement in an area health department, treatment plant, or other environmental health firm or agency. The assignments will be highly individualized. Prerequisite(s): ENVHEL-111 and ENVHEL-115.

ENVHEL-142
Credits: 3
Principles of Water Resources
This course is the study of water and its uses which includes: history, types of surface water and groundwater sources; water quality; federal, state and local legislation; water conservation; and today's emerging water issues that will affect human health and the environment.

ENVHEL-143
Credits: 3
Interpersonal Communication Skills and Environmental Management
Instruction is provided to develop and/or enhance people skills essential to an environmental manager. Students will observe and apply a variety of NLP strategies including conflict resolutions, recognizing people's communication patterns, and responding appropriately and effectively to those patterns. Prerequisite(s): ENVHEL-111 and ENVHEL-115.

ENVHEL-145
Credits: 3
Water/Wastewater Operations – Municipal
Operational procedures and facilities used in public water supply treatment and wastewater treatment are studied. Methods of establishing and maintaining hydraulic flow and techniques for chemical treatment, nutrient removal and an overview of applicable regulations also are integrated into the course.

ENVHEL-146
Credits: 2
Water/Wastewater Operations – Industrial
The process basics and operational procedures for treating industrial wastewater are studied. Emphasis is placed on proper operation and maintenance, chemical safety, sampling, remedial measures, waste minimization, recordkeeping and typical wastewater treatment process problems that are encountered in both the industrial and the food and beverage industries. Prerequisite(s): ENVHEL-145.

ENVHEL-173
Credits: 3
Environmental Bacteriology
Principles dealing with microbiological organisms, with emphasis on bacteriological applications to the environmental health field, are covered in this course. Students conduct laboratory procedures utilized in the field according to standard methods. Environmental parameters include: water, milk, food, and inanimate surfaces. Interpretation of laboratory results are based on applicable standards.

EPROM

EPROM-150
Credits: 3
Introduction to eProduction
This course survey provides an introduction to eproduction, the process of creating content for emerging multiphatform delivery. The course examines the importance of traditional video production techniques and their application within emerging content delivery. It also explores the similarities and differences between broadcasting and narrowcasting, long- and short-form production and large vs. small screen presentation. Learners differentiate between forms via hands-on exploration. Hardware and software products are surveyed and students become familiar with the technology needed to implement promotional schemes for successful eproduction program distribution (e.g. via the Web, social media outlets and mobile technology). Learners also review the legal ramifications of intellectual property ownership as applied to multi-platform digital authoring.

EPROM-151
Credits: 3
Data Content Management/Implementation
This program explores the workflow and organization of data from acquisition to editing to distribution to archive. By understanding the path that content takes from inception to delivery and beyond, the student will be able to plan distribution systems for content specifically designed for individual applications. Also, the learner will become competent in data asset management, file integration, understanding codes and resolution, and also transcoding and consolidation techniques.

EPROM-152
Credits: 3
eProduction Techniques/Implementation
This course focuses on the principles of design and operation of video systems as incorporated in multimedia, interactive and web design. This includes understanding, choosing and operating the appropriate lighting techniques, video cameras, digital SLR’s, audio acquisition and non-linear editing. Students will produce and post-produce several productions of increasing complexity for multiphatform delivery as it pertains to eproduction.

EPROM-153
Credits: 2
eProduction Practicum 1
This course prepares students to work in the eproduction field by giving them practical real-job experience in a nonthreatening environment. The fundamentals of teamwork, creative applications of technology and organization are emphasized. Job search techniques and job site observations are also discussed. As schedule allows, MPTV’s College Place initiative will serve as a practical lab for students.
EPROD – FIRE  DEGREE/DIPLOMA COURSE DESCRIPTIONS

EPROD-154  Credits: 3  
eProduction Integration  
As new media and technology evolve, students will need to problem-solve with current electronic tools, and also with an eye toward the future. This course will focus on the students’ application of their visual content creation skills and understanding of existing hardware and software to design an e-multimedia presence using current tools. Additionally, students will be challenged to anticipate the next wave of potential content distributors and plan for seamless multi-versioned delivery of their message using the technology of the future.

EPROD-155  Credits: 3  
eProduction Advanced Techniques  
Students will learn how to incorporate their basic and intermediary understanding of multiplatform delivery of audio/visual content with the advanced tools of the trade. Multi-versioning of content is emphasized, permitting the student producer to understand how to take concept to creation, as well as air, web, podcasting, social media, etc. An eye toward the future technologies and techniques is the focus.

FOUNDRY

FDRY-390  Credits: 3  
Molding Processes  
This is a shop course dealing with the basic skills required to produce quality castings. Various methods such as conventional sand molding, chemical cure processes and permanent mold casting will be presented.

FDRY-392  Credits: 3  
Mechanized Molding/Coremaking  
A shop course dealing with the operation of various machines associated with metal casting. Actual hands-on experience will be gained on both molding and coremaking machinery plus some ancillary machinery such as conventional sand mollers, continuous mollers, permanent mold machines, wax presses, ovens, chippers, grinders and cut-off machines.

FINANCIAL PLANNING

FIN-120  Credits: 3  
Introduction to Money, Banking and Financial Markets  
An introduction to the essential elements of money, banking and financial markets while emphasizing the relevance of each in the economy. Topics include financial markets and instruments, financial institutions, central banking, monetary policy and the Federal Reserve System, and business cycles.

FIN-122  Credits: 3  
Investment Principles  
In this course, students are presented with the information, tools and guidance needed to make educated investing decisions. The investment simulation project provides hands-on experience stock trading and structuring a portfolio. Prerequisite(s): ACCTG-110 or ACCTG-111.

FIN-170  Credits: 3  
Credit Management  
This course provides the knowledge and tools to establish, manage, analyze and control both consumer and business credit. Topics include the credit process, credit management policies and procedures, financial statement analysis, and regulation of consumer credit.

FIN-180  Credits: 3  
Financial Statement Analysis  
This is a capstone course for the Banking and Financial Services program. Students will learn the conceptual background and analytical tools necessary to understand the financial aspects of a business. Emphasis is placed on interpreting and analyzing financial statements to plan and forecast financial performance. Prerequisite(s): ACCTG-113 and BADM-126.

FIRE TECHNOLOGY

FIRE-104  Credits: 3  
Fire Internship  
This course provides an opportunity for students to experience learning and insight into fire department organization and procedures. Students are assigned to a local fire department where they can apply knowledge and skills they learned in the classroom while performing the same duties as a working member of that department. Prerequisite(s): EMS-144 or EMS-301.

FIRE-109  Credits: 3  
Emergency and Disaster Planning  
The purpose of this course is to provide students with the knowledge and information to assess current programs and/or to develop, implement and maintain a program to mitigate, prepare for, respond to and recover from disasters and emergencies. Students identify hazards, the likelihood of their occurrence and the vulnerability of people, property, the environment and the community to those hazards. Hazards to be considered at a minimum include, but are not limited to, natural events, technological events and human events. Prerequisite(s): FIRE-156.

FIRE-114  Credits: 3  
Employability Skills  
This course is designed to fine-tune the skills and abilities that a student has obtained and apply that knowledge to the application process of the fire service. Areas examined include the application process, written fire service entrance exams, the oral interview process, portfolios, and the fire fitness evaluation. Students will be given the opportunity to earn their CPAT certification. The course will also include a mock hiring process. Prerequisite(s): FIRE-142, FIRE-151 and FIRE-156.

FIRE-116  Credits: 2  
Fire Department Management  
Students are introduced to beginning management principles in dealing with personnel on the fire company and departmental level. These principles are adapted to both nonemergency and fireground situations. The course includes the administrative management functions of planning and organizing, as well as the problems and guidelines related to the functions of the budgeting process and personnel management. Prerequisite(s): EMS-144, FIRE-109, FIRE-114 and FIRE-152.

FIRE-139  Credits: 3  
Principles of Emergency Services  
Provides an overview to fire protection, careers in fire protection and related fields, philosophy and history of fire protection/service, fire loss analysis, organization and function of public and private fire protection services, fire departments as part of local government, laws and regulations affecting the fire service, and fire service nomenclature.

FIRE-142  Credits: 4  
Fire Fighting Principles  
Describes basic fire behavior, techniques used to control structural and related fire emergencies, and life safety practices. Students perform all practical evolutions necessary to control and extinguish fires and otherwise meet all requirements for the state of Wisconsin Firefighter Level 1 certification. Prerequisite(s): FIRE-139, FIRE-147, FIRE-143.

FIRE-143  Credits: 3  
Building Construction for Fire Protection  
Provides the components of building construction that relate to fire and life safety. Students are taught the basic principles of structural design such as: masonry, frame, veneer, structural steel and reinforced concrete constructions. Building codes and fire ordinances as they apply to basic construction are also covered.

FIRE-147  Credits: 4  
Fire Protection Systems  
Provides information relating to the features of design and operation of fire detection and suppression systems. Students gain an awareness of local, state, federal and NFPA fire safety codes and fire inspection procedures. Students also receive instruction on instilling awareness to the public about what to do in a fire or other disaster.

FIRE-151  Credits: 4  
Fire Prevention  
Provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, and identification and correction of fire hazards. Meets all requirements for the state of Wisconsin Fire Inspector I certification. Prerequisite(s): FIRE-139, FIRE-147 and FIRE-143.

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FOREIGN LANGUAGE

FLANG-101 Credits: 1
Survival Spanish for Law Enforcement Officers
Upon completion, participants will be able to use Spanish to disarm a suspect, make arrests and ID individuals, stop and search a vehicle, conduct field sobriety tests, issue warrants, assist in emergencies, read the Miranda Warning, render aid to victims and manage prisoners and bystanders.

FLANG-104 Credits: 1
Spanish for Dental Staff
Upon completion, participants will be able to use Spanish to register patients, obtain medical history, engage in office etiquette, explain routine procedures, give directions to patients during procedures, explain anesthesia, explain billing procedures, instruct patients concerning medications, instruct patients concerning post-operative problems.

FLANG-105 Credits: 1
Spanish for Nursing
Upon completion, participants will be able to use Spanish to obtain basic information and patient history, obtain vital signs, perform physical assessments, perform routine procedures, prepare patients for surgery or other procedures, administer medications and injections, feed and bathe patients, assist and interact with patients’ families, honor patients’ requests, assist in emergency situations, identify Hispanic culture traits relating to medical care, reduce a patient’s fear of hospital settings, and understand Hispanic health belief systems.

FLANG-107 Credits: 1
Survival Spanish – Work and Travel America
Upon completion, participants will be able to use Spanish to greet people, count and tell time, make telephone calls, communicate basic needs in business and travel situations, make simple purchases, ask for a taxi and give directions, request a room and services at a hotel, describe health issues, and order food and beverages at restaurants. They will also be able to identify and cope with common cross-cultural barriers.

FLANG-109 Credits: 1
Spanish for Business Professionals
Upon completion of the program, participants will be able to use Spanish to greet people; engage in etiquette and social niceties; introduce oneself and others; count to 2,000; offer compliments; order food and drink; give directions to a cab driver; register in a hotel; make simple purchases; request emergency assistance; and make and receive telephone calls.

FLANG-110 Credits: 1
Spanish for Child Care
Upon completion, participants will be able to use Spanish to greet and exchange general courtesies with parents and guardians, meet parents and register new students, speak about health issues, report on a child’s behavior, manage and direct children, compliment children, manage children in emergency situations, and teach basic songs and nursery rhymes.

FLANG-111 Credits: 1
Spanish for Restaurants
Upon completion, participants will be able to use Spanish to greet and depart; compliment people; engage in etiquette and social niceties; use holiday greetings; direct kitchen staff, servers and bussing staff; communicate general rules and safety issues.

FLANG-112 Credits: 1
Spanish for Horticulture
Upon completion, participants will be able to use key phrases in Spanish to greet, compliment and depart; engage in etiquette and social niceties; use holiday greetings; use common commands for planting, moving and removing shrubs, trees, plants, etc.; discuss worker safety and schedules; and utilize proper cultural norms to encourage worker satisfaction.

FLANG-113 Credits: 1
Spanish for Horticulture 2
This course is designed for non-Spanish-speaking landscapers and horticulturists who need functional language skills and cross-cultural training to comfortably interact with and manage Spanish-speaking employees in the landscaping industry. This is a continuation of FLANG-112. Prerequisite(s): FLANG-112.

FLANG-117 Credits: 3
Conversational Spanish for Service Occupations 1
This introductory approach to conversation presents everyday situations encountered on job sites. The course provides students with the basic vocabulary and cultural understanding needed for working with Spanish-speakers in targeted occupations, at home and abroad.

FLANG-118 Credits: 3
Conversational Spanish for Service Occupations 2
This continuation of FLANG-117 enables students to advance their conversational skills in realistic work-related contexts while further developing valuable cross-cultural insights needed for successful interaction with Spanish-speaking employees and clients.

FLANG-119 Credits: 1
Survival Spanish for School Administrators, Teachers and Support Staff
This is a comprehensive program designed to provide functional Spanish language skills for school personnel who have occasional contact with Spanish-speaking students and visitors. The course also includes extensive training for non-Spanish-speaking classroom teachers who have Spanish-speaking children in their classroom.

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through practice in listening, speaking, and customs provides an increased awareness of the cultures of the Spanish-speaking world. Upon completion of this course and FLANG-209, students have the equivalent of Spanish 1. Prerequisite(s): FLANG-200 or satisfactory MATC placement test score.

**FLANG-202**
Spanish 1
This beginning-level college transfer course offers students an opportunity to acquire communication skills and to develop an awareness of and appreciation for the various Hispanic cultures. One hour of language lab attendance per week is required.

**FLANG-203**
Spanish 2A
This course is for continuing students who feel they need more time to complete Spanish 2. In this continuation of FLANG-201, students in Spanish 2A develop additional communicative skills in real-life situations and gain a better understanding of the Spanish-speaking cultures of the world in relationship to their own. The course is college transferable as Spanish 2 only upon completion of both semesters. Prerequisite(s): FLANG-201 or FLANG-202 or satisfactory MATC placement test score.

**FLANG-204**
Spanish 2B
This course is for continuing students who feel they need more time to complete Spanish 2. In this second part of the continuation of FLANG-203, students in Spanish 2B develop additional communicative skills in real-life situations and gain a better understanding of the Spanish-speaking cultures of the world in relationship to their own. The course is college transferable as Spanish 2 only upon completion of both semesters. Prerequisite(s): FLANG-203 or satisfactory MATC placement test score.

**FLANG-205**
Spanish 2
In this continuation of FLANG-202, students develop additional communicative skills in real-life situations and gain a better understanding of the Spanish-speaking cultures of the world in relationship to their own. One hour of language lab attendance per week is required. Prerequisite(s): FLANG-201, FLANG-202 or satisfactory MATC placement test scores.

**FLANG-213**
Spanish 3
This course is designed to help students build language proficiency and gain cultural awareness by discussing in the target language a variety of cultural topics and pertinent current issues. Students will refine grammar skills to improve conversational abilities. One hour of language lab attendance per week is required. Prerequisite(s): FLANG-205 or satisfactory MATC placement test score.
FLANG – FSTEC

DEGREE/DIPLOMA COURSE DESCRIPTIONS

exercises are presented when appropriate. Use of the language laboratory one period each week is mandatory.

FLANG-222 Credits: 4
French 2
The student further develops the ability to comprehend and speak French. The student also completes the study of elementary grammar and applies the principles of French grammar and syntax to translations and short compositions. Longer and more complicated reading assignments test the student’s comprehension. Use of the language lab one period each week is mandatory. Prerequisite(s): FLANG-221.

FLANG-225 Credits: 2
French Conversation 1
This introductory audio-visual course offers students an opportunity to begin developing conversational French skills through speaking and listening activities. The emphasis is on using the spoken language in basic situations. Reading and writing skills are also developed, but to a lesser degree.

FLANG-226 Credits: 2
French Conversation 2
In this continuation of FLANG-225, students develop additional conversational French skills through speaking and listening activities. The emphasis is on using the spoken language in everyday situations. Additional reading and writing skills are also developed. Prerequisite(s): FLANG-225.

FLANG-228 Credits: 3
Spanish for Spanish Speakers
Fosters further linguistic development through the emphasis on contemporary issues facing Latinos. This stresses the improvement of writing and speaking professional Spanish as well as gaining a deeper understanding of the broader Spanish-speaking world. Upon successful completion, students possess an intermediate-mid level of written and spoken Spanish. Prerequisite(s): FLANG-213 or satisfactory placement test score.

FLANG-250 Credits: 2
Chinese 1A
This course is the first of a curriculum that divides Chinese 1 into two semesters. It moves gradually and includes an emphasis on how to learn a foreign language. The course stresses the development of basic communicative skills through practice in listening, speaking, reading and writing. Vocabulary and grammar are emphasized. A study of values and customs provides an increased awareness of Chinese culture. The course is college transferrable as Chinese 1 only upon completion of both semesters. Prerequisite(s): FLANG-250.

FOOD

FOODS-300 Credits: 1
Basic Foods and Equipment
This course emphasizes standards of finished products, conservation of nutritive values, foundation recipes, recent developments in food processing and the relationship of all these to organization and work techniques. The basic equipment for food production is also introduced.

FOODS-305 Credits: 4
Fundamentals of Food Production
The student applies principles of cookery and receives practical experience in institutional food service operations. Instruction focuses on methods of preparation, standards of finished products, and proper use of production equipment.

FOODS-306 Credits: 4
Fish, Meat and Poultry
The principles of protein cookery are taught in relation to the preparation of meat, fish and poultry. Areas of instruction include identification of meat cuts, basic types of meat cookery, and the selection and application of appropriate cooking methods.

FOODS-307 Credits: 4
Short-Order Cookery
A short order line provides practical experience in the methods of frying and grilling foods; sandwich-making techniques; quantity salad, fruit and dessert preparation; and dispensing of fountain items. A unit on breakfast cookery is included.

FOODS-308 Credits: 4
Basic Baking
Laboratory activities provide practical experience in scaling ingredients, mixing and handling batters and doughs, and applying icings to baked products. Hot breads, yeast breads and rolls, pies, cakes, cookies and convenience products are prepared.

FOODS-315 Credits: 1
Sanitation and Safe Use of Equipment
Students learn to recognize and practice the prevention of food contamination and spoilage. Attention is given to federal, state and local legislation regulating sanitation and safety standards. Candidates are prepared for the National Restaurant Association certification examination in Applied Food Service Sanitation.

FOODS-340 Credits: 1
Nutrition and Menu Planning
Standards of adequate nutrition are presented through lectures, visual aids and class discussions. The basic “Eating Right Pyramid” is introduced as a guide to menu planning and good nutrition. To avoid waste and poor nutrition, instruction focuses on a systems approach to menu design and portion control. Menu cycles are also discussed.

FOODS-346 Credits: 1
Purchasing and Cost Control
This course will enable the student to identify ways of purchasing food items and equipment for the kitchen. The student will also be able to accurately calculate costs of producing recipes in different amounts.

FOODS-352 Credits: 2
Fundamental Cake Decorating
Practical training is offered in the fundamentals of color and design as applied to cake decorating. Practice is given in executing different borders, flowers and cake tops. Emphasis is on development of skills necessary to carry out decorations that are artistic and appropriate.

FOOD SCIENCE/INDUSTRIAL MANUFACTURING TECHNICIAN

FSTEC-101 Credits: 4
HAACP for Food Manufacturing
This course covers the properties of materials commonly used in the workplace that are potentially hazardous to workers and the techniques of detection of those materials, along with proper methods of transporting and handling those materials in the workplace. Completion of coursework will lead to 40-hour OSHA HAZWOPER certification.

FSTEC-102 Credits: 2
Core Manufacturing Skills
Today’s manufacturing workplace requires employees at all levels to take initiative to solve problems, work cooperatively in teams, and adapt to an ever-changing environment. The Critical Core Manufacturing Skills training targets these areas and more, to empower you to meet current and future production and customer demands. Topics such as productivity skills, problem-solving skills, team skills and adaptability skills will be covered.

FSTEC-103 Credits: 2
Manufacturing Processes and Lab Science
This course will provide students with an overview of manufacturing processes used in a variety of industries from electronics to pharmaceuticals. This may include wet chemical, food, refining, semiconductor, biomedical device, polymers and pharmaceutical processing methods used in manufacturing. This may also include computer controlled machining, rapid prototyping and applications of computer-aided design.

For more information: matc.edu or 414-297-MATC. Page 231
FSTEC-104  Credits: 3  
**Food Processing Regulations**
This course will examine the Food and Drug Administration and the U.S. Department of Agriculture regulations of meat and food products in the United States, and the primary responsibility for the safety of these products. Topics addressed will include other food regulating agencies, food security, genetic modifications, additives, dietary supplements and food labeling.

FSTEC-105  Credits: 3  
**Industry Practicum**
The student will conduct 216 hours in an onsite work environment in the food processing, electronics fabrication or other micro/nano technology-related work environment. For students unable to coordinate an internship, a practicum opportunity may be available.

FSTEC-106  Credits: 3  
**Manufacturing Applications Using STEM**
See INFOline at matc.edu for information.

FSTEC-107  Credits: 3  
**Manufacturing Food Processes/Schematics/Blueprints**
This course presents the fundamental principles, concepts, symbols, standards, terminology, and manufacturing process notes of food process manufacturing schematics and blueprints. Students visualize parts, sections, and assemblies through interpretation and sketching.

FSTEC-137  Credits: 3  
**Fundamentals of Biotechnology**
See INFOline at matc.edu for information.

**FUNERAL SERVICE**

FUNERL-105  Credits: 5  
**Funeral Service Internship Management/Embalming**
Students complete a 10-week practical experience in embalming and funeral directing under the direction of a licensed funeral director and college supervisor in an off-campus funeral home approved by the college. Onsite meetings, assigned readings, independent research and case reports are required for the course. Prerequisite(s): FUNERL-110, FUNERL-112, FUNERL-116, FUNERL-117, FUNERL-120, FUNERL-131, FUNERL-132, FUNERL-153.

FUNERL-110  Credits: 2  
**Introduction to Funeral Service**
An orientation and overview of the funeral and funeral service profession. Primary objectives include the role of the funeral director including personal, professional and ethical qualifications. Study also includes a survey of the history of funeral and burial practices from ancient times to the present. Prerequisite(s): Completion of or currently enrolled in FUNERL-116.

FUNERL-112  Credits: 2  
**Funeral Service Law**
The study of principles and rules governing the practice of mortuary science as they relate to both practitioners and establishments. Topics include legal and disposal status of human remains, liability for funeral expenses, etc. Emphasis is on laws of the state of Wisconsin. Prerequisite(s): BADM-160.

FUNERL-116  Credits: 4  
**Funeral Service Practices**
The mechanics of funeralization from the first notification of death through the committal are presented, with emphasis on the funeral service procedures of various religions, as well as fraternal and military groups. Includes some computer application.

FUNERL-117  Credits: 4  
**Funeral Service Management**
The funeral director as an effective managerial person is presented. Topics will include small business management, FTC regulations, governmental death benefits, trusting, employer/employee relations and public relations. Merchandising – including casket/vault construction and merchandise arrangement, presentation and pricing – is presented, as well as computer applications to funeral service. Prerequisite(s): FUNERL-112 and FUNERL-116.

FUNERL-120  Credits: 3  
**Restorative Art**
Proportional relationships and the anatomical structure of the facial area of the human skull are studied. Principles of wax modeling, color theory and cosmetic principles are presented. The sequence, materials and legal aspects for most restorations are discussed. Students will practice restorative art in laboratories provided by the college. Prerequisite(s): NATSCI-138 or NATSCI-177.

FUNERL-131  Credits: 4  
**Embalming 1**
The history, purpose, ethical and sanitary considerations in handling human remains are stressed. Basic procedures, instruments, equipment employed, body positioning, feature posing, vessel selection, injection methods, types of embalming chemicals and dilution of arterial fluids are introduced. Students practice embalming in laboratories provided or approved by the college. Prerequisite(s): NATSCI-138 or NATSCI-177.

FUNERL-132  Credits: 4  
**Embalming 2**
Continuation of Embalming 1, dealing primarily with drainage, cavity treatment, trauma and post-mortem conditions. Special emphasis is placed on problem cases and their treatment. Students practice embalming in laboratories provided or approved by the college. Prerequisite(s): FUNERL-131.

FUNERL-153  Credits: 3  
**Psychology of Funeral Service**
Grief, its manifestations and the effects of the manner and cause of death on the grief reaction are studied. Counseling techniques used by the funeral director, along with methods of grief resolution, are discussed. Emphasis is also placed on the application and purpose of sociology in funeral service. Prerequisite(s): PSYCH-199.

**GENERAL STUDIES/COLLEGE SUCCESS**

GENCOL-104  Credits: 2  
**College Success**
This course assists the incoming student in developing strategies essential to success in college. These strategies are planning/time management, responsibility, self-confidence, assessing career goals, developing research and critical thinking skills, and becoming familiar with college resources and services. This course has a mandatory service learning component for all students.

GENCOL-106  Credits: 3  
**College, Work and Life Success**
This course provides learners with strategies to develop skills for success in college. Learners will apply self-management techniques, explore resource management strategies, create a personalized “College Success Tool Kit,” and learn about ways to improve personal effectiveness.

**GENERAL STUDIES/ENGLISH**

GENENG-103  Credits: 3  
**Introduction to College Writing**
This course introduces basic principles of composition including development, unity, and coherence in paragraphs and multi-paragraph documents. A further goal of this course is to assist students in demonstrating the correlation between paragraphs and an essay. Prerequisite(s): COMMB6-761 or satisfactory MATC placement test score.

**GENERAL STUDIES/READING**

GENREA-105  Credits: 3  
**Introduction to Reading and Study Skills**
Prerequisite(s): READB6-767 or satisfactory MATC placement test score.

**GENERAL STUDIES**

GENST-103  Credits: 3  
**College Success Strategies**
This class focuses on developing the skills and attitudes students need to be successful in college. Topics studied include time management, research and writing skills, oral communication, study skills, and making a career choice.
GLOBAL SERVICES
GLOBAL-120  
Hmong 1  
Credits: 2  
This course will introduce the basic Hmong language through listening, speaking, reading and writing exercises. Students will be given opportunities to analyze language and its continuing significance. Students will become familiar with key aspects of Hmong tradition, culture and contemporary life.

HEALTH

HEALTH-100  
Success Strategies/Service Learning  
Credits: 1  
This interactive, blended course is designed to provide learners interested in health science careers to investigate a variety of health-related careers. Academic and community service learning activities are integrated into the course. Service learning will provide an authentic exposure to healthcare careers. Students will explore health careers and critically analyze the role of various healthcare team members. Service learning experiences will provide an opportunity to compare personal motivations, skill sets and desires with the roles and responsibilities of various healthcare professionals. This course will provide opportunities to strengthen positive academic and personal skills necessary for success in the chosen field of study. Students will integrate academic success strategies with experiences learned through engaged service learning activities.

HEALTH-101  
Medical Terminology  
Credits: 3  
Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. The course emphasis is on spelling, definition and pronunciation. It provides an introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems as well as systemic and surgical terminology.

HEALTH-104  
Healthcare Customer Service  
Credits: 2  
This course is designed as an introduction to customer service for students interested in working in various healthcare settings. The student investigates healthcare systems, safety standards and the workforce. The student also examines professionalism, interpersonal and written communication skills and confidentiality as they relate to customer service in healthcare.

HEALTH-105  
Medical Terminology Introduction  
Credits: 1  
This course promotes knowledge of the elements of medical terminology for professional development. Emphasis is placed on the ability to spell and pronounce medical terms, an understanding of medical abbreviations, and an appreciation of the logical method found in medical terminology including word analysis and word building.

HEALTH-107  
Introduction to Healthcare Computing  
Credits: 2  
This course provides an introduction to basic computer functions and applications utilized in contemporary healthcare settings. Students are introduced to the hardware and software components of modern computer systems and the application of computers in the workplace. The course emphasizes the use of common software packages, operating systems, file management, word processing, spreadsheet, database, internet and electronic mail.

HEALTH-160  
Study Strategies for Health Occupations  
Credits: 2  
This course focuses on creative thinking, brain-based learning principles, information processing and memory strategies, as well as life management skills. Learning strategies are taught to assist learners in integrating and processing technical information in a meaningful way.

HEALTH-308  
Pharmacology for Allied Health  
Credits: 2  
Introduces students to classifying medications into correct drug categories and applying basic pharmacology principles. Students apply basic pharmacodynamics to identifying common medications, medication preparations, and administration of medications used by major body systems. Prerequisite(s): HEALTH-101, MEDAST-302.

HISTORY

HIST-201  
Europe From the Renaissance to Napoleon  
Credits: 3  
This course is a survey of the political, economic, social and cultural developments in European history, from the late Middle Ages to 1815.

HIST-202  
Europe from Napoleon to the Present  
Credits: 3  
This course is a survey of the political, economic, social and cultural developments in European history from 1815 to the present.

HIST-203  
Western Civilization From Ancient Times to 1776  
Credits: 3  
This course surveys the evolution of Western civilization from ancient times to 1776. Special emphasis is placed on the development and interactions of the political, social, religious and economic institutions that form the foundations of Western civilization today.

HIST-204  
Western Civilization From 1776  
Credits: 3  
This course surveys the evolution of Western civilization from 1776 to the present time. Special emphasis is placed on the development and interactions of the political, social, religious and economic institutions that form the foundations of Western civilization today.

HIST-205  
Contemporary World Affairs  
Credits: 3  
This course begins with an overview of the Cold War and the post-Soviet world, and then examines the most important foreign policy issues and controversies, including U.S.-Russian relations and the Middle East. The course changes yearly to focus on the most current events and conflicts. Emphasis is placed on the historical background, key events and individuals as well as differing interpretations of these issues.

HIST-206  
America Since 1945  
Credits: 3  
This course analyzes domestic and foreign policy of the United States since World War II. Beginning with the Truman administration, it moves through the current time. The emphasis is on changes in America's role in international affairs, growth in presidential power, and changes within American society. Special attention is devoted to the Middle East, Asia, Latin America, the civil rights movement, the cultural revolution of the '60s, and New Federalism.

HIST-207  
20th Century European History  
Credits: 3  
This course is designed to help the student develop a sensitive appreciation of present-day Europe and will cover the significant events and changes that have occurred in Europe since 1900. Special emphasis is given to the institutions, ideas and creative works the Europeans developed during the 20th century.

HIST-210  
Women in American History  
Credits: 3  
This course provides an analysis of the experiences of women in the development of America. Emphasis is placed on the impact of women in the political, economic and social events that shaped the nation, and the growing awareness in women of their role in society.

HIST-211  
America Through 1877  
Credits: 3  
A survey of the history of the United States from 1500 to 1877. Emphasis is placed on the experiences of women in the development of the Western Civilization. The course changes yearly to focus on the most important foreign policy issues and controversies, including U.S.-Russian relations and the Middle East. The course changes yearly to focus on the most current events and conflicts. Emphasis is placed on the historical background, key events and individuals as well as differing interpretations of these issues.

HIST-212  
America Since 1877  
Credits: 3  
The major developments in United States history from 1870s to the present are traced. Attention will be focused on the country's industrialization, urbanization, development of the West, reform movements, and the emergence of the United States as a world power.

For more information: matc.edu or 414-297-MATC.
HIST-213 Credits: 3
America: 1921-1945
This course focuses on Americans in prosperity, Depression and war. It assesses the successes and failures of people, famous and not so famous, who confronted economic and social disasters at home, and experienced tyranny abroad.

HIST-214 Credits: 3
African-American History
A comprehensive introduction to the historical and sociological background of African-American people. An African-centered approach will be used to focus on the political, economic and cultural history of African-Americans from 3900 B.C. to 1865. An analysis is made of the cultural and historical policies and practices that have shaped African-American people’s relationship to other people of the world.

HIST-215 Credits: 3
African-American History and Culture
A comprehensive study of African-American history since the Civil War. An African-centered approach will be utilized to analyze the political, economic and cultural history of African-Americans from 1865 to the present.

HIST-216 Credits: 3
History of American Minorities
This course highlights the role of minorities in the history of America. The cultural, social and political history of African-Americans, Hispanic-Americans, Asian-Americans and European immigrants are studied. A cross-cultural approach shows the distinctive cultural patterns of the various groups and their contributions to the dominant culture.

HIST-217 Credits: 3
Contemporary Civil Rights
This course familiarizes the student with the period of history commonly referred to as the modern Civil Rights era, 1953 to 1969. It introduces the student to the events, individuals, social, political and religious linkages, and activities that give this period its historical relevance and prominence.

HIST-218 Credits: 3
Native American History
The purpose of this course is to provide an introduction to Native American history and culture. Indian/non-Indian relationships over time will be the central focus of the course.

HIST-219 Credits: 3
Wisconsin Indians Past/Present/Future
This course presents the history of Wisconsin Indians as designed to provide all Wisconsin residents, Indian and non-Indian, with an in-depth understanding of indigenous people from Wisconsin. The course provides the student with data, prehistorical and historical, in order to cover the broad range of time involved in the study of the Wisconsin Indian Nations.

HIST-220 Credits: 3
History of Capitalism and Labor
This course traces the development of capitalism from its origins in self-sufficient, nonmarket agrarian societies through the Industrial Revolution to postindustrial capitalism. Emphasis is placed on the relationship of business organization, managerial techniques, technological change, and emergent forms of labor organization.

HIST-221 Credits: 3
African History 1 Before 1800 C. E.
This course discusses African history from the start of European territorial expansion in tropical Africa. It examines the scientific data that human beings originated in Africa, the early African civilizations, the centralized kingdoms and empires developed by Africans in West, Central and East Africa, African city-states, and the spread of Christianity and Islamic influence in Africa. It also examines the migration of the major African ethnic groups, African slave trade and its abolition, the introduction of legitimate trade by the European powers, and the regional diversity of Africa on the eve of colonial rule.

HIST-222 Credits: 3
African History 2 Since 1800 C. E.
This course discusses African history from the start of European territorial expansion in tropical Africa to the end of colonial rule and the challenges of modern African governments. It explores colonial rule, the decolonization process, and the condition of independent African countries.

HIST-223 Credits: 3
World History to 1500
This course examines global history from antiquity to 1500 C. E. From the first River Valley Civilizations through the Bronze Age, the development of writing, depiction of the human form, the creation of new communities in the Middle East to the spread of world religions and the building of huge empires in Europe, Asia, the Americas and Africa, the course stresses that history, with its different definitions and ways of studying the past, is not reserved for a particular group. It involves written and material culture and activities carried out by people all over the world.

HIST-224 Credits: 3
World History Since 1500
This is a survey of the world’s last five centuries stressing its social diversity, interconnectedness, cross-cultural contact, and geography in a way that enhances understanding about the way in which we live today.

HIST-225 Credits: 3
Latin American History
This course is subdivided into the following topics: precolumbian civilizations, the colonial period, independence, the republican period, and contemporary Latin America. Special emphasis is given to U.S.-Latin American relations and to the problems of development.

HIST-226 Credits: 3
History of Wisconsin
This course covers the history of the state of Wisconsin and of Milwaukee as a Wisconsin hub city. It traces the formative and developmental stages and patterns in Wisconsin and Milwaukee’s unique social, political and economic history with special focus on their rich and diverse multiethnic and multicultural heritage, and the backdrop of Wisconsin’s seasonal array of natural beauty, wonderlands and festivals.

HIST-227 Credits: 3
Introduction to the History of Southeast Asia
This course focuses on the region of Southeast Asia. It gives an introduction to the history of the region as a whole, from its early beginnings until World War II and its aftermath. It also provides the necessary introductory background to the study of each individual Southeast Asian nation.

HIST-228 Credits: 3
History of the Vietnam War Years
This course examines the American experience in the Vietnam War. It will deal with the roots of the conflict in French colonialism in Southeast Asia and the containment principles of U.S. foreign policy, and traces the course of the war through the Kennedy, Johnson and Nixon administrations. It also examines the domestic political response to the war and the literature produced by Vietnam veterans.

HEALTH INFORMATION TECHNOLOGY/MEDICAL RECORDS

HIT-101 Credits: 2
EHR Introduction to Healthcare Information Technology
Introductory survey of how healthcare and public health are organized and services are delivered in the U.S. The course is divided into three parts with the first part covering public policy, relevant organizations and their interrelationships, professional roles, legal and regulatory issues, privacy laws, jobs in the healthcare settings and professional and ethical issues encountered. The second part introduces students to healthcare and computer terminology that is used in healthcare settings. The third part of the course provides a brief history of healthcare and healthcare technology, culminating in healthcare reform initiatives and the HITECH Act. The concepts of meaningful use are introduced. Prerequisite(s): Admission to the appropriate EHR certificate.
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HIT-102 Credits: 3
EHR Health MIS/Configuring EHRs
A theory and laboratory course that is specific to healthcare and public health applications. Introducing health IT standards, health-related data structures, software applications; enterprise architecture in healthcare and public health organizations. The laboratory part of the course involves practical experience addressing approaches to assessing, selecting and configuring EHRs to meet the specific needs of customers and end-users. Prerequisite(s): Admission to the appropriate EHR certificate.

HIT-103 Credits: 2
EHR Quality Improvement
This course introduces the learner to concepts of health IT and practice workflow redesign as instruments of quality improvement. The learner will address establishing a culture that supports increased quality and safety. Approaches to assessing patient safety issues and implementing quality management and report through electronic systems will be discussed. Prerequisite(s): HIT-101.

HIT-104 Credits: 2
EHR Project Management
In this course, the learner will apply project management tools and techniques to construct a project management plan. This course will also prepare the learner for leadership roles, principles of leadership, and working with effective management teams. Emphasis is placed on the leadership modes and styles best suited to IT deployment. Prerequisite(s): Admission to the appropriate EHR certificate.

HIT-105 Credits: 3
EHR Workflow Process Analysis Redesign
This course goes into depth on the fundamentals of health workflow process analysis and redesign as a necessary component of complete practice automation. The course includes topics of process validation and change management. Prerequisite(s): HIT-103.

HIT-107 Credits: 1
Introduction to Healthcare Informatics
Designed to give students a broad introduction to the field of healthcare informatics, including definitions and industry applications. The history of informatics will be explored as well as the tools needed to support today’s healthcare technology demands. Prerequisite(s): HIT-181 or HEALTH-107.

HIT-108 Credits: 2
Project Management and Team Communication
This course develops skills to plan and track complex projects, translating project design to an electronic format, and accurately record/modify project schedules. Prerequisite(s): HIT-190.

HIT-109 Credits: 1
Healthcare Informatics Practicum
An off-campus internship that places the student within an assigned healthcare facility to complete a focused informatics needs assessment and work with facility staff to provide a solution for at least one identified informatics need within the facility. Prerequisite(s): HIT-108.

HIT-130 Credits: 4
EHR Overview of EHR Systems
This course starts with a theory component specific to healthcare and public health applications, introducing basic health IT standards, health-related data structures, and software applications. A laboratory component of the course then allows students to work with a simulated electronic health records (EHR) system, playing the role of a practitioner to learn a framework for how healthcare applications work together, understand why standards are important, why there is a need for usability requirements, and how errors can occur. Prerequisite(s): Health Information Technology program (10-530-1); HIT-101.

HIT-131 Credits: 4
EHR Configuring, Installing, Maintenance
This is an advanced course building upon the Overview of EHR Systems course, looking more in-depth into how EHR systems are constructed and configured for implementation, including security standards, interfaces and integration of systems, application testing, deployment, troubleshooting problems and system maintenance. A secondary component of the lab then provides a practical experience for addressing how to design and build an EHR to meet specific needs of customers and end-users. Prerequisite(s): Health Information Technology program (10-530-1); HIT-101.

HIT-132 Credits: 2
EHR Standards, Supporting
The final course in the certificates goes into more depth on the necessary standards for meaningful use requirements of EHR systems. Prerequisite(s): Health Information Technology program (10-530-1); HIT-101.

HIT-160 Credits: 4
Healthcare Informatics
Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learners will develop skills to assist in information systems design and implementation. Prerequisite(s): Must be admitted to Health Information Technology (10-530-1) or Medical Coding Specialist (31-530-2) program; and HIT-176, HEALTH-107, HIT-185 and HIT-195.

HIT-161 Credits: 3
Health Quality Management
Explores the programs and processes used to manage and improve healthcare quality. Addresses regulatory requirements as related to performance measurement, assessment, and improvement, required monitoring activities, risk management and patient safety, utilization management, and medical staff credentialing. Emphasizes the use of critical thinking and data analysis skills in the management and reporting of data. Prerequisite(s): HIT-177.

HIT-176 Credits: 2
Health Data Management
Introduces the use and structure of healthcare data elements, data sets, data standards, their relationships to primary and secondary record systems and health information processing. Prerequisite(s): HIT-181, HIT-182, HIT-197; HIT-199 and student must be admitted to a medical coding program (30-530-2 or 31-530-2).

HIT-177 Credits: 2
Healthcare Law and Ethics
Examines regulations for the content, use, confidentiality, disclosure and retention of health information. An overview of the legal system and ethical issues are addressed. Prerequisite(s): Must be admitted to Health Information Technology (10-530-1) or Medical Coding Specialist (31-530-2).

HIT-178 Credits: 2
Healthcare Stats and Research
Explores the management of medical data for statistical purposes. Focuses on descriptive statistics, including definitions, collection, calculation, compilation and display of numerical data. Vital statistics, registries, and research are examined. Prerequisite(s): HIT-176 and must be admitted to Health Information Technology (10-530-1) or Medical Coding Specialist (31-530-2).

HIT-181 Credits: 1
Introduction to the Health Record
This course prepares students to illustrate the flow of health information in various healthcare delivery systems and within the health information department. It also prepares students to retrieve data from health records. Professional ethics, confidentiality and security of information are emphasized. Prerequisite(s): NATSCI-177 or NATSCI-189 with a minimum grade C; HEALTH-101 with minimum grade C. Student must be admitted to Health Information Technology (10-530-1) or Medical Coding Specialist (31-530-2).

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HIT-182  Credits: 3
Human Disease for Health Professions
This course focuses on the common diseases of each body system as encountered in all types of healthcare settings by health information professionals. Emphasis is placed on understanding the etiology (cause), signs and symptoms, diagnostic tests, and treatment (including pharmacologic) of each disease. Prerequisite(s): NATSCI-177 or NATSCI-189 with minimum grade of C and HEALTH-101 with a minimum grade of C. Student must be admitted to Medical Coding Specialist (31-530-2) or Health Information Technology (10-530-1).

HIT-183  Credits: 3
ICD-9-CM Coding
This course prepares students to assign ICD-9-CM codes supported by medical documentation with entry-level proficiency. Students apply ICD-9-CM instructional notations, conventions, rules and official coding guidelines when assigning ICD-9-CM codes to case studies and actual medical record documentation. Prerequisite(s): NATSCI-189 and completion or currently enrolled in HIT-182. Student must be admitted to Medical Coding Specialist (30-530-2).

HIT-184  Credits: 3
CPT Coding
This course prepares students to assign CPT codes, supported by medical documentation, with entry-level proficiency. Students apply CPT instructional notations, conventions, rules and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation. Prerequisite(s): HIT-181, HIT-182, HIT-197, HIT-199; student must be admitted to a medical coding program (30-530-2 or 31-530-2).

HIT-185  Credits: 2
Healthcare Reimbursement
This course prepares students to compare and contrast healthcare payers, illustrate the reimbursement cycle and to comply with regulations related to fraud and abuse. Learners assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs) and Resource Utilization Groups (RUGs) with entry-level proficiency, using computerized encoding and grouping software. Prerequisite(s): HIT-181, HIT-182, HIT-197, HIT-199; student must be admitted to a medical coding program (30-530-2 or 31-530-2).

HIT-190  Credits: 3
Healthcare Information Systems
Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Students will develop skills to assist in information systems design and implementation. Prerequisite(s): HIT-176.

HIT-194  Credits: 2
HIM Organizational Resources
Examines the principles of management to include planning, organizing, human resource management, directing and controlling as related to the health information department. Prerequisite(s): Completion of or currently enrolled in HIT-161.

HIT-195  Credits: 2
Applied Coding
This course prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation with intermediate level of proficiency. Students prepare appropriate physician queries in accordance with compliance guidelines and will assign codes to optimize appropriate reimbursement. Prerequisite(s): HIT-181, HIT-182, HIT-197, HIT-199; and the student must be admitted to a medical coding program (30-530-2 or 31-530-2).

HIT-196  Credits: 3
Professional Practice 1
Applies previously acquired skills and knowledge by means of clinical experiences in healthcare facilities. This is the first of a two-semester sequence of supervised clinical experiences in healthcare facilities. Prerequisite(s): Must be admitted to Health Information Technology (10-530-1) or Medical Coding Specialist (31-530-2) and completed HIT-176, HIT-181, HIT-184, HIT-185, HIT-195, HIT-197 and HIT-199, and completion of or currently enrolled in HIT-177, HIT-178.

HIT-197  Credits: 3
ICD Diagnosis Coding
This course prepares students to assign ICD diagnosis codes supported by medical documentation with entry-level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation. Prerequisite(s): NATSCI-177 or NATSCI-189 with a minimum grade of C, HEALTH-101 with a minimum grade of C. Student must be admitted to Medical Coding Specialist (31-530-2) or Health Information Technology (10-530-1).

HIT-198  Credits: 3
Professional Practice 2
Applies previously acquired skills and knowledge, and discussion of clinical situations. This is the second of a two-semester sequence of supervised technical and managerial clinical experiences in healthcare facilities. Prerequisite(s): HIT-178, HIT-196 and completion of or currently enrolled in HIT-177, HIT-184 and HIT-197.

HIT-199  Credits: 2
ICD Procedure Coding
This course prepares students to assign ICD procedure codes supported by medical documentation with entry-level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation. Prerequisite(s): NATSCI-177 or NATSCI-189 with minimum grade of C, HEALTH-101 with minimum grade of C. Student must be admitted to Medical Coding Specialist (31-530-2) or Health Information Technology (10-530-1).

Horticulture

HORT-111  Credits: 3
Introduction to Horticulture
This course provides an overview of the horticulture profession. Its role and importance throughout history, current trends and horticulture-related career opportunities will be covered. Particular attention is given to horticulture crops, plant classification, their use, and the interrelationships between the environment, plant growth and plant development.

HORT-112  Credits: 3
Horticulture Soils
This course explores the properties of soils and applies them to horticultural uses as a growing medium and as an engineering base for landscaping.

HORT-113  Credits: 3
Ornamental Plant Health/Care
The identification of and control of insects and diseases with a focus on plant health, care and maintenance will be emphasized. An integrated pest management approach in diagnosing pest problems and the control of pests using biological, cultural, physical and chemical applications will be included. Calibrations, laws, regulations, safety and ecological impact are also covered. Training and testing for the Wisconsin State Certified Pesticide Applicator Exam, Category 3.0, Landscape, Turf and Interiorscape is part of this course. Students who pass the exam will receive state certification.

HORT-114  Credits: 3
Woody Ornamental Plants
Plant classification and the techniques of plant identification are explained. The student utilizes these techniques in identifying commonly used deciduous and evergreen trees and shrubs.

HORT-116  Credits: 3
Landscape Equipment
This course covers maintenance, adjustment, and productive use of specialized rolling stock and tools used in landscaping. Students practice safe operation of an array of landscape equipment.
Horticulture Degree/Diploma Course Descriptions

Horticulture (HORT)

**HorT-122 Credits: 3**
**Landscape Design I**
This course provides the student with the initial experience needed to understand the fundamental processes used in creation of a landscape design. This includes contracting with a client, assessing fundamental client needs, site measurement, client analysis, environmental analysis, functional analysis, the use of geometric form and planting design principles.

**HorT-123 Credits: 3**
**Landscape Design II**
Students learn to draw landscape graphics and understand what makes them readable. Students will review and practice design processes including planting design and its basic elements, and will practice planting a design developed in a class-client contact project. Prerequisite(s): HORT-122.

**HorT-124 Credits: 2**
**Landscape Design 3**
This course briefly reviews outdoor rooms and planting design. Actual situations with clients are used. Projects include study and design of vehicular circulation, steps and walls, a community project, and a specialty project. There are class collaboration and class presentations to clients. Students are encouraged to review each other's work. Color projects are also encouraged. Prerequisite(s): HORT-123.

**HorT-125 Credits: 3**
**Landscape Maintenance Application**
Students will learn concepts in landscape management and health such as establishment, pruning, weed control, mulching, fertilization, winter protection, and basic turf management.

**HorT-126 Credits: 3**
**Landscape Estimating and Bidding**
The numerical aspects of landscape installations and maintenance are studied, including estimation of labor and material costs. Linear, area and volume calculations of materials needed for landscape projects from landscape plans are thoroughly covered as well as garden center figuring, landscape design calculations, nursery and greenhouse setup, and fertilizer materials and calibration.

**HorT-127 Credits: 3**
**Arboriculture I**
Students will learn concepts in landscape tree management and health such as establishment, pruning, bracing and cabling, problem treatments, fertilization, decay and risk, and rigging and removal. Rope and harness tree-climbing skills and equipment are provided, as well as knot tying, reduction and treatment of construction damage, and tree inventory systems. Power equipment such as brush chippers, stump cutters, aerial lifts, root excavators and chainsaws are covered. The current Safety Requirement Standards (ANSI Z133.1) and Standard Practices (ANSI A300) are stressed.

**HorT-128 Credits: 3**
**Arboriculture II – Climbing and Pruning**
In an outdoor setting, this course provides practical application to principles presented in the previous arboriculture course. The students observe and perform skills in tree climbing and pruning, as well as tree repair, pracial rigging, and tree removal as opportunities present themselves. Knowledge of safe, tree care operations and tree pruning standards are stressed. Students will also gain skills in knot tying, aerial rescue, and clear communication.

**HorT-129 Credits: 3**
**Arboriculture III - Rigging and Removal**
In an outdoor setting, students rig and remove trees using various techniques and equipment. Students become competent in determining methods of tree removal, and skilled in operation of chainsaws and selection of removal equipment. Safe work practices, clear communication, and knots needed for removals are stressed.

**HorT-130 Credits: 3**
**Garden Center Marketing**
This course provides students an overview of garden center marketing and how a garden center operates.

**HorT-132 Credits: 2**
**Communications and Marketing**
The course discusses communication and marketing skills, techniques and strategies as they apply to the horticulture profession. Students will learn and practice interpersonal skills as they relate to customers, co-workers, employees and employers.

**HorT-133 Credits: 3**
**Turf Management and Related Equipment**
The description and identification of turf grasses used in the landscape industry are studied. Emphasis is on cultural requirements, pet problems, and equipment used in establishing and maintaining turf.

**HorT-134 Credits: 3**
**Greenhouse Production – Fall Crops**
This course provides an overview of greenhouse production of crops grown in fall and winter. Planning and growing of the crops is the main focus.

**HorT-140 Credits: 3**
**CAD Landscape Design 1**
This course provides the horticulture student with the skills and knowledge to draw landscape plans with a computer-aided design (CAD) program. The concepts of the program will be discussed and an understanding of the basic commands of AutoCAD and the site planning module of LandCAD will be covered.

**HorT-141 Credits: 3**
**CAD Landscape Design 2**
Provides the horticulture student with the skills and knowledge to draw landscape plans with AutoCAD and Land F/X, computer-aided design (CAD) programs. The concepts of Land F/X will be discussed, and an understanding of the landscape-design related commands of Land F/X will be covered. Prerequisite(s): HORT-140.
HORT-142 Credits: 2
Introduction to Organic Vegetables/Culinary Herbs
Identification and cultural requirements of culinary herbs, and cool and warm season vegetables suitable for growing in Wisconsin are studied. Attention is given to bed layout and preparation, propagation, planting techniques, maintenance and harvesting. Special consideration is given to urban agriculture, including contained space gardening containers, vertical cropping and rooftop gardens.

HORT-143 Credits: 2
Survey of Edible Landscaping
Identification, uses and growing requirements of fruit-bearing and edible plants for landscapes are studied. The culinary and ornamental values of common trees, shrubs, vines and herbaceous perennials and annuals are discussed. Prerequisite(s): HORT-159.

HORT-152 Credits: 3
Greenhouse Production – Spring
Students will grow spring greenhouse crops from propagation, transplanting and fertilization, to market. Cultural care for each crop will be done under greenhouse growing conditions. Schedules of crops and planning of greenhouse space will be covered.

HORT-159 Credits: 2
Survey of Herbaceous Plants
Commonly used annual and perennial herbaceous plants are studied, with an emphasis on identifying flower and foliage characteristics and their utilization in the landscape. Ground covers, vines and roses are included.

HORT-160 Credits: 2
Landscape Plants – Trees
The study of landscape trees is broadened to include evergreen and deciduous tree cultivars (landscape zone five and colder) used in the landscape industry. Emphasis is on identification, cultural requirements, and uses in various landscape settings. Prerequisite(s): HORT-158 or HORT-114.

HORT-161 Credits: 2
Landscape Plants – Shrubs
The study of landscape shrubs is broadened to include evergreen and deciduous shrub cultivars (hardiness zone five and colder) used in the landscape industry. Emphasis is on identification, cultural requirements, and uses in various landscape settings. Prerequisite(s): HORT-158 or HORT-114.

HORT-162 Credits: 3
Advanced Study of Herbaceous Plants
This course expands on the study of herbaceous plants used in the landscape industry. Emphasis is on recognizing the attributes of new and less frequently used cultivars. Their requirements and their specific utilization in the landscape are stressed. Prerequisite(s): HORT-159.

HORT-163 Credits: 3
Native Plants – Fall
In this course, students identify the basic plant communities that are native to Wisconsin, especially to southeastern Wisconsin. Students become familiar with a selection of native plants that make each of these communities unique. Students also study how to cultivate these plants for use in ecologically based landscape design.

HORT-170 Credits: 2
Landscape Design: Exterior
Residential design methodology is studied. Fundamentals are practiced on preparing landscape plans. Preparation of sections and elevations is included. Prerequisite(s): HORT-174.

HORT-171 Credits: 2
Exterior Plant Pests
The animal, insect and disease pests of landscape plants are studied along with control methods specific to each. Emphasis is on correct diagnosis and the integrated pest management controls used in an urban setting.

HORT-172 Credits: 2
Specifics of Land Maintenance
This course examines specific problems that arise in maintaining a landscaped area. These problems are related to the environment in general and to sites, soils, plant characteristics and hardscape features in the landscape.

HORT-173 Credits: 2
Tree Maintenance
Emphasis is on large tree maintenance including planting, pruning, removal, bracing and cabling, cavity work, fertilizing and water-related problems. Care and safety with ropes, saddles and chain saws are stressed.

HORT-175 Credits: 2
Landscape Design: Exterior
Residential design methodology is studied. Fundamentals are practiced on preparing landscape plans. Preparation of sections and elevations is included. Prerequisite(s): HORT-174.

HORT-177 Credits: 2
Landscape Design IV
This course provides students with additional hands-on assignments that will assist them in gaining greater expertise in landscape practices. Prerequisite(s): HORT-124.

HORT-180 Credits: 2
Landscape Construction: Patios, Steps, Walls
The basic construction of patios, retaining walls, steps and walls, as taught in Landscape Construction: Fundamentals, is practiced in a hands-on construction lab. Prerequisite(s): HORT-179.

HORT-193 Credits: 3
Native Plants – Spring
This course teaches landscaping with native plants through onsite observation of native plant communities. Students also learn basic preservation and restoration techniques for native plant communities. Landscape design principles will be observed and noted.

HORT-196 Credits: 3
LandCADD 1
In this course, students will be introduced to the basic tools of AutoCAD and LandCADD. Prior training in AutoCAD or familiarity with AutoCAD is strongly recommended. Prerequisite(s): HORT-175.

HORT-197 Credits: 3
LandCADD 2
This course is a continuation of the tools available on AutoCAD and LandCADD. Students will also transfer these tools to other software programs such as Site Designer 2 and LandDesignerPro. Prerequisite(s): HORT-196.

HORT-198 Credits: 2
Horticulture Internship
This course provides a broad variety of specific occupational experiences in the horticulture industry. Students work with faculty to develop an internship plan and identify, coordinate and evaluate learning experiences appropriate to the field of study and major career focus of the student. Students will engage in hands-on practical work experience with employers identified in the internship plan.

HORT-199 Credits: 1
Horticulture Issues and Trends
Review and analysis of current horticulture issues and trends will be presented.

HOTEL/HOSPITALITY

HOTEL-100 Credits: 3
Introduction to Hotel/Hospitality Management
Students trace the development of the hotel/motel industry from early inns to modern high-rise and commercial hotels, and highway motels. The organization of the hotel, including food and beverage operations, is discussed.

HOTEL-105 Credits: 2
Hospitality Marketing and Sales
Fundamental principles of marketing and sales serving the hospitality industry are developed through discussion and analysis. The functions and responsibilities of the sales department are presented, including advertising and sales techniques.

HOTEL-110 Credits: 3
Front Office Procedures and Management
This course emphasizes front office techniques and management principles for the organization and operation of the lodging facility. The human and public relations responsibilities of the front office, as well as routine procedures, are an integral part of the course.

HOTEL-112 Credits: 3
Front Office Computerized Procedures
This course emphasizes computerized front office techniques. The student uses the latest software for hotel/hospitality management, from reservation systems to daily reports and management reports. Up-to-date housekeeping reports are generated as needed.

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HOTEL-115 Credits: 2
Legal Aspects of Hotel/Hospitality Industry
The identification and investigation of the laws that affect the hospitality industry help the student understand problems in litigation. The ability to recognize property owners’, managers’ and guests’ legal responsibilities is described and discussed.

HOTEL-120 Credits: 3
Building Operations and Security
Technical information necessary to establish effective maintenance and engineering functions is explored. An effective energy management program is discussed. Common mechanical problems and the procedures to correct them are emphasized. Security management to protect guests is reviewed.

HOTEL-122 Credits: 3
Basic Hospitality Accounting
The basic structure of hospitality accounting is studied. The student will recognize the differences in hotel/hospitality accounting. Emphasis is placed on analysis and interpretation, as well as recording, classifying and summarizing phases.

HOTEL-124 Credits: 3
Managerial Accounting for the Hospitality Industry
Accounting data is an aid to managerial decision-making. Emphasis is placed on the use of internal cost and segment data. Managerial accounting is an integral tool in planning and controlling operations. Prerequisite(s): HOTEL-122.

HOTEL-127 Credits: 3
Catering Weddings, Convention Sales and Contracts
This course provides the Hotel/Hospitality Management student with the overall concept of conventions, weddings and catering sales and their contracts, including coordination of functions, to achieve the ultimate result – a satisfied customer.

HOTEL-130 Credits: 3
Internship in Hotel/Hospitality Management
The internship affords students the opportunity to experience employment while simultaneously having the advantage of being supervised by a program instructor/coordinator. Students complete a 16-week practical experience in an off-campus location.

HOTEL-133 Credits: 2
Supervision in the Hospitality Industry
Topics related to hospitality supervision and obligations to the owners, customers and employees are addressed including line supervising, planning and problem-solving. Learning to make good decisions and transitions from worker to supervisor to line management and top management are also covered.

HOTEL-135 Credits: 2
Professional Presence in Hospitality
Course content focuses on approaching every business situation with a strong belief in your skills and a clear knowledge of how your presence will impress and affect others. Emphasis is on telephone etiquette, body language, color analysis, body typing and voice projection.

HOTEL-150 Credits: 2
Housekeeping Operations
This course covers the functions of the housekeeping department and the role of its managers in operating the department, and introduces students to basic production skills. The housekeeping department is the training ground for room-division managers.

HUMAN RESOURCE MANAGEMENT

HRMGT-133 Credits: 3
Legal Issues and Employment Law
Students apply the skills and tools necessary for human resource professionals to effectively perform related functions in today’s work environment. Each student will demonstrate the application of legal practices in both union and nonunion environments, analysis of the impact of U.S. employment laws, the impact of the global economy, the appeal process, reacting to legal charges, documenting the hiring and firing process, dealing with harassment issues, privacy issues, and summarizing legal issues facing contemporary human resource professionals.

HRMGT-136 Credits: 3
Safety in the Workplace
In this course, students apply the skills and tools necessary to provide a safe and secure work environment. Each student demonstrates the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, risk analysis, issues of workplace violence, substance abuse, health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

HRMGT-169 Credits: 3
Diversity and Change Management
In this course, students apply the skills and tools necessary to implement and maintain a diverse work environment that values change. Each student demonstrates the application of effective compensation and benefit programs to effectively value and apply employees’ abilities and needs to organization goals. Each student demonstrates the application of the differences in hotel/hospitality management to protect guests is reviewed.

HRMGT-170 Credits: 3
Employee and Labor Relations
The student gains a fundamental understanding of employee and labor relations that involve the process of analyzing, developing, implementing, administering and performing ongoing evaluation of the workplace relationship between the employer and employee. It also includes the collective bargaining process.

HRMGT-192 Credits: 3
Strategic Management
This course focuses on understanding the operation of the total business enterprise. It will help the student understand the challenges and the environment in which the business operates, the direction the management tends to head, the strategic plans for getting the enterprise moving in the intended direction, and tasks of implementing the strategy successfully. This courses equips the student with core concepts, frameworks, and techniques of strategic management for understanding what managers must do to make an organization achieve superior performance.

HRMGT-193 Credits: 3
Human Resource Management
Students apply the skills and tools necessary to effectively value and apply employees’ abilities and needs to organization goals. Each student demonstrates the application of the various functions performed in contemporary human resources management, including impacts of EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies and procedures, training, performance management, employee counseling and development, and effective use of compensation and benefit strategies.

HRMGT-194 Credits: 3
Fundamentals of Compensation
In this course, students apply the skills and tools necessary to develop and manage an effective compensation and benefit program for organizational employees. Each student demonstrates through application how to use compensation strategies to reinforce organizational goals, and to recruit and retain a motivated workforce; determine wage ranges tied to internal and external equity; develop incentive programs for different types of positions; establish a cost-effective benefit program; and comply with legal requirements.

HRMGT-195 Credits: 3
Human Resource Management
This course focuses on understanding the operation of the total business enterprise. It will help the student understand the challenges and the environment in which the business operates, the direction the management tends to head, the strategic plans for getting the enterprise moving in the intended direction, and tasks of implementing the strategy successfully. This courses equips the student with core concepts, frameworks, and techniques of strategic management for understanding what managers must do to make an organization achieve superior performance.

HRMGT-196 Credits: 3
Recruiting and Selection
Students will learn the importance of effective recruitment and selection processes as related to organizational effectiveness, sustainability, and competitive advantage. Students will gain an understanding of the role of human resource management in strategic planning (specifically as it relates or links to employment and workforce planning). Emphasis will be placed on the recruitment process, recruitment budget, and critical steps in the selection process, selection assessments, interviewing, and compliance with state and federal employment laws, regulatory agencies, and internal company policies.
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they work 24 hours per week under the joint supervision of the agency and MATC field supervisors. Advanced Field Experience is designed to enhance the knowledge, skills and behaviors essential for human service workers in the professional setting. Students apply the material from their coursework to a real work situation. Prerequisite(s): HUMSVC-142 or HUMSVC-105 or AODA-151 or HUMSVC-115 or AODA-154 or HUMSVC-104.

HUMSVC-107 Credits: 2
Field Experience Seminar
Field Experience Seminar must be taken concurrently with HUMSVC-106 Advanced Field Experience. This seminar provides the opportunity for students to discuss their field placement experiences and engage in consultation, networking and problem-solving. Students develop a strong knowledge base of community human service agencies and resources. Prerequisite(s): Completion of or currently enrolled in HUMSVC-106.

HUMSVC-113 Credits: 3
Documentation and Recordkeeping
Students will practice techniques involved in maintaining clinical records, documentation of referrals, staffing and consultations. Prerequisite(s): HUMSVC-101 and HUMSVC-144.

HUMSVC-115 Credits: 3
Methods of Social Casework
The application of casework theories, models and techniques, along with the management and coordination of case records, is the major focus of this course. Exercises will be designed to reflect variations in casework intervention techniques, depending upon the goals of the practice setting. This course should be taken the semester before entering field placement. A competency exam is given in the final stages of the course. Prerequisite(s): HUMSVC-102, HUMSVC-103 and HUMSVC-113.

HUMSVC-118 Credits: 3
Introduction to Gerontology
This introductory course includes a demographic, cultural and ethnic profile of older adults. The major theories about aging are explored, in addition to the interrelationships of biological, psychological and social aspects of aging. Prerequisite(s): Completion of or currently enrolled in HUMSVC-101 and HUMSVC-144.

HUMSVC-121 Credits: 3
Family Issues and Interventions
This course focuses on issues related to families and family functioning relevant to the human services field. Special attention is paid to child maltreatment, domestic violence and addiction, with an emphasis placed on the helping skills and services that are most effective. Prerequisite(s): Completion of or currently enrolled in HUMSVC-101 and HUMSVC-144.

HUMSVC-127 Credits: 3
Disabilities and the Helping Profession
This course emphasizes awareness of physical, psychological and developmental disabilities, and examines the unique needs and resources of people with disabilities. Emphasis is placed on developing effective strategies for working with clients who are disabled.

HUMSVC-142 Credits: 3
Multicultural Competence in Human Service Professions
Students learn to build a foundation of culturally competent social work/human service practices that enable them to work effectively with diverse populations. Students develop skills through the acquisition of knowledge and awareness of various groups, cultures and lifestyles. Prerequisite(s): HUMSVC-101 and HUMSVC-144.

HUMSVC-144 Credits: 3
Ethics in the Human Service Professions
This is a survey course for the Human Service Associate program. Relationships between client and worker are emphasized, as well as the responsibilities of workers to engage in decision-making reflective of exemplary ethics codes. Prerequisite(s): Admission to Human Service Associate (10-520-3).

HVAC1/AIR CONDITIONING, REFRIGERATION AND HEATING

HVAC1-300 Credits: 4
Basic Refrigeration/System Operations
Includes theory and principles of refrigeration and practical lab work. Students perform such skills as tube bending, flaring, soldering and brazing. The pressure, temperature relationship of refrigerants and pressure/enthalpy diagrams are studied to understand the basic refrigeration cycle. Refrigeration system leak checking, evacuation and charging are performed, along with refrigerant recovery in accordance with Environmental Protection Agency regulations.

HVAC1-301 Credits: 4
Introduction to Refrigeration Service/Applications
This course covers types of compressors, refrigerant expansion devices, condensers, evaporators, accessories and system applications. Refrigeration piping design and installation are discussed and practiced. Refrigerant and oil management, recovery, recycling, reclaiming and retrofit are practiced following proper EPA procedures. Service and troubleshooting of small hermetic, commercial and central air conditioning systems are covered. Prerequisite(s): HVAC1-300.

HVAC1-325 Credits: 3
Oil Furnace Service and Maintenance
This is a lecture/discussion and lab course which focuses on the basics of residential oil-fired forced air heating systems and its use as a commercial fuel. Students will learn such skills as knowing all the components high-pressure gun oil burners, learning the sequence of operations, understanding wire schematics, basic servicing skills, troubleshooting and combustion testing.

HVAC1-326 Credits: 3
Gas Furnace Servicing and Maintenance
This is a lecture/discussion and lab course which focuses on the basics of natural gas-fired forced air heating systems. The course includes covering basic atmospheric furnaces, induced draft, and high efficient condensing furnaces. Students will learn such skills as knowing the components, learning the sequence of operations, understanding wire schematics, basic servicing skills, troubleshooting, and digital combustion testing. Also included is an overview of the use of a sustainable solar energy in residential hydronic heating. Prerequisite(s): HVAC1-325.

HVAC1-332 Credits: 2
Math for Heating, Ventilation, Air Conditioning and Refrigeration Service Technicians
This math course provides a step-by-step approach to math problems that students will encounter as heating and cooling technicians. This course provides the basic computational and problem-solving skills required for many aspects of HVAC industry, and for further study in trades' math and in intermediate-level algebra, geometry and trigonometry. Topics include: whole numbers, fractions, decimals, proportion, percent, graphs, statistics, measurement and geometry.

HVAC1-350 Credits: 2
Air Conditioning Principles
This basic course covers air distribution, heating, filtering and refrigeration as applied to air conditioning for residential, commercial and industrial applications. Calculating heat gains and the use of a psychrometric chart are included.

HVAC2/AIR CONDITIONING AND REFRIGERATION TECHNICIAN

HVAC2-109 Credits: 1
Introduction to the HVAC Industry
Students are introduced to the career opportunities and responsibilities in the air conditioning, heating and refrigeration industry. This course offers an orientation to the different duties, educational requirements and specialty areas within the HVAC industry.

HVAC2-110 Credits: 3
Air Conditioning Fundamentals
This course is a study of the fundamentals of air conditioning, including heating, cooling, humidification, human comfort and psychrometrics. The laboratory will cover the use of measuring instruments during operation of boilers, pumps, furnaces, and air handling units.

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HVAC2 – HYDPNU

DEGREE/DIPLOMA COURSE DESCRIPTIONS

HVAC2-113 Credits: 3
Electrical Fundamentals
This course provides experience with electrical theories, circuits, devices and equipment that may be needed by those who work in the field of heating, air conditioning and refrigeration.

HVAC2-114 Credits: 4
Electrical Controls and Systems
Function and basic operating principles of the controls and circuit components are verified as students wire complete heating and cooling systems on panel boards in the lab. Servicing and troubleshooting procedures are also covered. Prerequisite(s): HVAC2-113.

HVAC2-115 Credits: 4
Refrigeration 1
Studies and calculations are made of the basic refrigeration cycle using the Mollier diagram. The operation of the major parts is discussed along with the use of service tools such as gages, meters, vacuum pumps, and refrigeration recovery. Prerequisite(s): HVAC2-110 and HVAC2-113.

HVAC2-116 Credits: 4
Refrigeration 2
Studies and calculations are made of commercial and industrial refrigeration systems, along with the design and selection of equipment. Meters and service tools are used to diagnose and troubleshoot compressors, coolers, ice makers and freezers. Prerequisite(s): HVAC2-115.

HVAC2-118 Credits: 2
Wiring Diagram Interpretation for HVAC/R
See INFOnline at matc.edu for information. Prerequisite(s): HVAC2-114.

HVAC2-120 Credits: 4
Heating Systems 1
This lecture and laboratory course on forced-air systems covers the principles of gas and oil combustion units. Also included are large industrial complex designs and their practicability, with emphasis on variable volume, dual duct, and multi-type systems. Prerequisite(s): HVAC2-110 and HVAC2-113.

HVAC2-121 Credits: 4
Heating Systems 2
This course includes instruction and laboratory work on hydronic hot water systems and steam applications. Students will be able to design systems, estimate load conditions, and size pumps and expansion tanks. Prerequisite(s): HVAC2-120.

HVAC2-125 Credits: 4
Control Application and Circuits
Students gain an understanding of the operation of various types of control devices and how combinations of these devices can be applied and varied to secure the desired conditions in heating and cooling systems. Prerequisite(s): HVAC2-116 and HVAC2-121.

HVAC2-126 Credits: 3
Air Conditioning Systems
A practical approach to design, equipment selection and energy conservation for an air conditioning system, with a visit to a commercial building to observe the operation of a complete mechanical and HVAC system with computer operation and monitoring. Prerequisite(s): HVAC2-116 and HVAC2-121.

HVAC2-132 Credits: 4
Architectural and Mechanical Fundamentals
Instruction is given in design, application, blueprint reading, symbols and drawings of mechanical systems. Outlays of various heating and cooling systems in relation to architectural buildings are used. Proper mechanical schematics, isometric piping, and flow diagrams are discussed and drawn.

HVAC2-144 Credits: 3
Servicing and Troubleshooting Refrigeration and Air Conditioning
Various methods of troubleshooting and servicing of refrigeration and air conditioning systems are studied, along with the use of service tools and meters on commercial and industrial equipment. Prerequisite(s): HVAC2-116.

HVAC2-146 Credits: 2
Digital Energy Management Systems
Major types of automatic electrical control systems are described and compared. Programs, sensing and control points, signal transmission and processing, and other peripheral equipment that make up a complete building monitoring and control automation system are explored. Prerequisite(s): HVAC2-114.

HVAC2-148 Credits: 3
Heat Pumps
Course is aimed at the servicing and installation of heat pumps. Curriculum provides instruction on equipment and procedures needed to check the heating and cooling performance of a heat pump system. Calculating heat gains and the use of a psychometric chart are included. Due to concerns for both comfort and energy conservation, there is a need for technicians who have current training in the installation, troubleshooting and repair of heat pump equipment. Prerequisite(s): HVAC1-300 or HVAC2-115.

HYDRAULICS-PNEUMATICS/INDUSTRIAL

HYDPNU-101 Credits: 2
Field Logic Controls
See INFOnline at matc.edu for information.

HYDPNU-310 Credits: 3
Fluid Power Maintenance Shop Practices
In this course, students will start with an introduction to basic hand tools, their description and how they should be used.

Students then identify components using manufacturers’ catalogs and literature, and use service manuals and other manufacturer literature to modify component operation and order repair parts. In the last part of the course, students overhaul/repair and test several different types of fluid power components. Prerequisite(s): HYDPNU-330.

HYDPNU-318 Credits: 3
Hydraulic Servo Systems
Hydraulic servo systems and their components are studied in this course. Items that are covered include basic servo valves, basic input and feedback devices, electronic components and related items. Setup, adjustment, minor troubleshooting and repairing of these systems/components are also included. Introduction to basic proportional valves and related components will be covered as well. Prerequisite(s): Completion of or currently enrolled in HYDPNU-330.

HYDPNU-330 Credits: 5
Basic Hydraulics/Pneumatics
Students will be introduced to the basic principles of hydraulics and pneumatics, along with some of the basic components used in each system. This includes the principles of operation and more common problems. Some of the components covered are: pumps, compressors, directional control valves, actuators, fluid conditioning devices, pressure control valves, conductors and sealing devices.

HYDPNU-334 Credits: 2
Fluid Power Schematic Reading
This course covers the interpretation of fluid power schematics, and their symbols used by personnel in the fluid power industry and machine repair trades. This includes going from schematics to machines and vice-versa. Students will learn how to read and draw fluid power symbols and schematics. Troubleshooting with the use of schematics is also included.

HYDPNU-336 Credits: 4
Fluid Power Circuits
This course starts with basic hydraulic/ pneumatic circuits and then goes into electrically/electronically operated circuits. Students learn how to do this with schematics. Basic troubleshooting is included. Prerequisite(s): Completion of or currently enrolled in HYDPNU-330.

HYDPNU-338 Credits: 4
Mechanical Drives and Linkages
This course will cover basic mechanical drives and systems such as levers, pulleys and pulley systems, the different types of belts and related parts, different types of chains and related parts, and the different types of gears and related parts.
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HYDPNU-340 Credits: 2
Basic Electric Motors and Controls
This course is specifically designed for the maintenance technician in dealing with the fundamental operation of motors and their controls. Topics will include basic electric motors, controls, circuits, measuring/testing instruments and basic troubleshooting. Prerequisite(s): ELECTY-326.

INTERIOR DESIGN

INDSGN-100 Credits: 3
Introduction to Interior Design
This course will cover the principles and elements of design (including line, form, balance, harmony, unity, rhythm, pattern, color, etc.). Pencil and ink sketching techniques will be explored to obtain a comfort level with loose drawings and quick sketches. Shade, shadow and color will be introduced as hand-rendering techniques. Students will be introduced to the concept and construction of an interior design presentation board. Students will learn to incorporate sustainable design concepts.

INDSGN-102 Credits: 3
Basic Architectural Drawing
This course will introduce students to basic manual and computer-aided drawing for interior design. Students will learn how to properly use equipment and produce two-dimensional drawings.

INDSGN-104 Credits: 3
Interior Elements of Building Construction
This course will introduce students to basic components of building construction, including structural components and mechanical systems. Construction techniques will be converted and applied to the furniture design process, with emphasis on millwork and custom cabinetry design. Sustainable design and the health and welfare of occupants will be considered throughout.

INDSGN-106 Credits: 3
Materials and Furniture Design
This course will explore appropriate material and furniture selections and specifications including sustainable solutions. Exploration will include quality construction and design applications used in the furniture industry.

INDSGN-108 Credits: 3
Residential Studio
This course will explore residential planning guidelines and safety codes. Students will learn the basic design process from programming through design development. An emphasis will be placed on appropriate furniture and material selections and specifications. Housing styles, both aesthetic and functional, will be addressed. Prerequisite(s): INDSGN-102.

INDSGN-110 Credits: 3
Advanced Architectural Drawing
This course builds on INDSGN-102 Basic Architectural Drawing coursework, and further develops skills in manual and computer-aided drawing techniques. Computer-aided three-dimensional modeling will also be introduced and explored as a method of communicating design. Prerequisite(s): INDSGN-102.

INDSGN-112 Credits: 2
Textiles: Science, Application Design
This course will cover fiber and yarn composition as it relates to woven goods. Students will learn appropriate material specification per application based on textile, fiber and yarn properties. Emphasis will be placed on upholstery and applied use, as well as textile design including exploration of warp, weave, pattern and color.

INDSGN-114 Credits: 3
Color and Light
This course will delve into the theory and practical application of color in interior environments. Students will explore how color can affect the perception of space due to physical, emotional and biological connotations. Emphasis will be placed on proper lighting techniques for true color selection. Students will learn to differentiate lamps and light sources as well as how to create lighting and switching plans. Prerequisite(s): INDSGN-100.

INDSGN-116 Credits: 3
Kitchen and Bathroom Design
Students learn methods of functional kitchen and bathroom planning, as well as the activities of a professional kitchen and bathroom designer. Emphasis is placed on design techniques that are current with industry standards. NKBA (National Kitchen and Bath Association) guidelines will be addressed, along with the presentation and planning techniques of industry-specific software. Prerequisite(s): INDSGN-102.

INDSGN-118 Credits: 3
Commercial Studio
This course looks at the contract design industry and exposes students to basic planning conditions, including planning guides and the ADA. Emphasis will be placed on furniture and material selection, and specification. Students will also explore the use of industry-specific software. Prerequisite(s): INDSGN-102.

INDSGN-120 Credits: 3
Professional Practice and Field Experience
This course will explore basic professional business practices, including ethics and standards of the interior design profession. Students will explore various types of design employment and develop a working résumé and cover letter. In addition, the student will observe and participate in work experience under the supervision of faculty in the Interior Design program. Prerequisite(s): INDSGN-104 and INDSGN-112.

INDSGN-122 Credits: 3
Styles of Furniture and Architecture
Students explore the evolution of interior design and the applied arts, including art and architecture. This course also relates political, socio-economic and demographic influences of each period from antiquity to contemporary style.

INDSGN-123 Credits: 2
Applied Interior Design
This course focuses on the material, finishes and accessories specified in residential and commercial interiors. Suppliers, quality construction, selection process and ordering are included, as well as portfolio work involving selection of color material/finishes to meet design needs.

INDSGN-124 Credits: 3
Advanced Commercial Studio
Course will continue to establish the important role of code compliance in commercial interiors. Emphasis will be placed on key industry segments of facilities and healthcare design. Advanced design techniques and strategies, such as schedules, legends and ceiling plans will be covered, as well as an introduction to planning and specifying systems furniture. Students will learn REVIT, an industry-standard software, as it applies to the interior design process. Prerequisite(s): INDSGN-118.

INDSGN-126 Credits: 3
Trends in Interior Design
Current issues and topics of concern as they relate to the field of interior design are emphasized. Students will learn to identify and research design solutions and trends. Prerequisite(s): INDSGN-102.

INDSGN-128 Credits: 3
Designer/Client Relationships
This course will focus on presentation selling and marketing strategies of interior design services and solutions. Emphasis is on cultivating and maintaining partnerships with clients and vendors. Students will develop oral, written and graphic presentations for residential and commercial design scenarios.

INDSGN-130 Credits: 2
Portfolio Development and Application
This course prepares students for entry-level job interviews. Emphasis will be on appropriate use of industry terminology, and presentation skills and tools. Students will organize a portfolio of best work and will participate in a series of mock interviews. Prerequisite(s): INDSGN-110.

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INDSG – INTP
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INDSGN-131 Credits: 2
The Furniture Industry
Quality construction features in upholstered, wood, plastic and metal furniture are given concentrated study. This course includes an introduction to and a study of major furniture manufacturers and their products.

INDSGN-146 Credits: 2
Hospitality Design
Students learn the specialized criteria considered in designing hotels, restaurants and resorts. An actual hospitality design problem will be solved. This area of design will give students the opportunity to design solutions for creative interiors. Prerequisite(s): INDSGN-125 and INDSGN-139.

INDSGN-147 Credits: 2
Facility Planning and Procedures
This course focuses on the field of facility design. Students learn how an in-house or outsource designer for business and industry plans space, solves problems and makes selections. Students are given the opportunity to develop procedures and layouts for a corporation of their choice. Prerequisite(s): INDSGN-150.

INDSGN-150 Credits: 2
Design Lab
This course exposes the student to practical design applications by serving the MATC community. Students will work on a variety of hands-on projects under the supervision of the instructor. The course will emphasize collaboration and problem-solving skills. Major emphasis will be placed on the pre-planning and presentation phase of the design process. Implementation will be the focus of Design in the Community 2. Prerequisite(s): INDSGN-102.

INDSGN-152 Credits: 3
Interior Design Visualization
This course gives students an opportunity to visualize their design concept for an interior in 3D. Actual modes of spaces are constructed from working drawings in order to increase the ability to visualize. Prerequisite(s): INDSGN-125 and INDSGN-139.

INDSGN-156 Credits: 3
Computer Applications for Interior Design
This is a basic computer-aided drafting course that utilizes AutoCAD software. Interior design software with furniture libraries from major manufacturers is used to furnish plans. Students will learn to draw and plot their designs, as well as generate related specifications. Prerequisite(s): INDSGN-125, INDSGN-139.

INDSGN-157 Credits: 2
Introductory Design Studio
This course gives students an opportunity to develop a problem-solving approach to design, develop sketches and improve their ability to visualize their solutions. It also exposes students to a wide range of interiors and architecture to broaden their experience.

INDSGN-160 Credits: 2
Interior Design Lab
Students will learn practical design applications by serving the MATC community. Students will work on a variety of hands-on projects under the supervision of the instructor. The course will emphasize collaboration and problem-solving skills. Major emphasis will be placed on the pre-planning and presentation phase of the design process. Implementation will be the focus of Design in the Community 2. Prerequisite(s): INDSGN-102.

INDSGN-163 Credits: 3
Field Experience in Interior Design
Under the supervision of instructors in the Interior Design program, the student is required to observe and participate in work experience. Discussions and conferences are held regarding skills and knowledge gained through the employment situation. Prerequisite(s): INDSGN-156.

INDSGN-180 Credits: 3
CAD Basics for Interior Design Professionals
This course provides professional interior designers with solid, practical know-how and step-by-step AutoCAD instruction. Emphasis will be on entry-level CAD skills including basic drawing and modification commands.

INDSGN-182 Credits: 3
CAD Review for Interior Design Professionals
This course serves as a skills refresher for designers with previous CAD experience. The course will include a basic skills review and provide students a forum to actively update their abilities and familiarity with the software. Emphasis will be placed on advanced orthographic drafting skills. Students will also be introduced to the electronic libraries and worksheet capabilities of 20-20 software products, including CAP and 20-20 Design.

INDSGN-190 Credits: 3
Designing Virtual Spaces
This course offers students the opportunity to develop the concept guiding the Virtual Milwaukee Project at Discovery World. Course work will include research, interviews, surveys, programming, developing a solution, and presentations. The goal is to produce a timeline and phases for the project and to begin the implementation of Virtual Milwaukee.

INDIVTS-102 Credits: 2
Career Assessment and Portfolio Development
This course is the preliminary component in the Individualized Technical Studies degree program. Students will develop a career portfolio that identifies their career goals and enables them to create a formal educational plan to attain their goals. The portfolio will document employment history, educational experiences and military and community service to identify the skills and competencies students have acquired related to their career goals. The completed portfolio will be the basis for establishing an Individualized Technical Studies degree path.

INTERPRETER TECHNICIAN

INTP-101 Credits: 2
Beginning ASL (Part 1)
The intent of this course is to provide the student with a beginning understanding of American Sign Language – the form of sign language most commonly used by deaf adults when communicating with each other. Instruction occurs at a leisurely pace, creating a comfortable atmosphere for learning.

INTP-102 Credits: 2
Beginning ASL (Part 2)
This course is a continuation of Beginning American Sign Language. The same textbook and materials will be used. The focus of this class is to increase sign vocabulary and enhance conversational signing skills. Upon successful completion, students are encouraged to enroll in INTP-127 American Sign Language 2 for further skill development. Prerequisite(s): INTP-101.

INTP-126 Credits: 3
American Sign Language 1
The intent of this course is to provide the student with a basic understanding of American Sign Language – the form of sign language most commonly used by deaf adults when communicating with each other. Students enrolled in non-Interpreter Technician program majors may be able to use this course to satisfy elective credit requirements.

INTP-127 Credits: 3
American Sign Language 2
This course is a continuation of American Sign Language 1 and is designed to further provide students with knowledge of fundamental survival signs. Students also acquire an awareness of the differences between deaf and hearing cultures. Prerequisite(s): INTP-126.

INTP-131 Credits: 5
Interpreting 1
This course provides students with intensive instruction on American Sign Language. Primary emphasis is placed on the acquisition
DEGREE/DIPLOMA COURSE DESCRIPTIONS

INTP-131 Credits: 3
Interpreting 4
This course continues to build the student’s knowledge of the interpreting process. Students further develop their interpreting skills in both expressive and receptive modes. Materials containing the types of information encountered during freelance interpreting are the focus of interpreting exercises. Extensive use is made of videotaped materials during independent lab work. Prerequisite(s): INTP-138.

INTP-151 Credits: 3
Educational Interpreting: Theory and Function
This course explores the role an interpreter has in educational settings. Theories related to the historical philosophies of deaf education and the ramifications for deaf students are discussed. Sign Language systems used in school settings are analyzed and receptive/expressive interpreting activities focus on school-based texts. Tutoring skills, note-taking skills and other duties related to the educational setting are covered. Class is taught without voice. Prerequisite(s): INTP-143, INTP-147 and INTP-149, with a minimum grade of C.

INTP-144 Credits: 3
Interpreting Ethics
Students study the history of the interpreting profession, the models of the interpreting process and the RID Code of Ethics. Emphasis is placed on interpretation of the Code of Ethics, ethical behavior as an interpreter and learning to make ethical decisions in the workplace. Students apply knowledge of the RID Code of Ethics during extensive role-plays and group interactions. Prerequisite(s): INTP-131 and INTP-133.

INTP-145 Credits: 2
The Interpreting Process
This course teaches students how to analyze texts at the lexical, phrasal, sentential and textural levels for the purposes of interpretation. Conceptualization, concept-mapping, paraphrasing and consecutive interpreting are some techniques explored to enhance the student’s ability to render equivalent messages from ASL to English or from English to ASL. Prerequisite(s): INTP-131 and INTP-133.

INTP-133 Credits: 3
American Sign Language Linguistics
This course provides students with instruction on the phonology, morphology, syntax and semantics of American Sign Language. These linguistic features are analyzed and compared to English language structures. Students are expected to apply these grammatical features in their conversational use of ASL. Prerequisite(s): INTP-127.

INTP-135 Credits: 1
Building Conversational Fluency
This course is designed to maintain and expand the American Sign Language conversational fluency of continuing students who have completed the first year of the Interpreter Technician program. Extensive use is made of deaf speakers. All students are expected to sign for themselves at all times. Classroom discussions and activities are strictly conducted without the use of voice. Vocabulary is reviewed on an as-needed, topic-related basis and grammatical and production errors are corrected within the parameters of conversation. Prerequisite(s): INTP-133.

INTP-138 Credits: 5
Interpreting 3
In this skill-building course, students work to develop their expressive and receptive interpreting skills. Materials containing general vocabulary and everyday types of information will be the focus of interpreting exercises. Activities focus on developing ASL/English interpretations with increasingly difficult levels of speed and technical complexity. Prerequisite(s): INTP-143, INTP-145 and INTP-147.

INTP-139 Credits: 3
Orientation to Deafness
This course acquaints students with the types and causes of hearing impairment, the anatomy and physiology of the hearing mechanism and the principles of audiology. The acquisition of language in both deaf and hearing persons is compared and contrasted. Students are also given an orientation to the deaf community.

INTP-143 Credits: 5
Interpreting 2
This course continues to provide students with intensive instruction in American Sign Language. Conversational patterns of ASL, usage of increasingly complex grammatical structures and continued expansion of vocabulary are stressed. The development of receptive ASL skills is a major area of focus. Prerequisite(s): INTP-131 and INTP-133.

INTP-150 Credits: 1
Oral Interpreting
This course is designed to familiarize interpreting students and working interpreters with the specialized needs of hearing-impaired children and adults who choose to communicate by primarily relying on oral methods and to prepare students to interpret for this population. Topics covered include principles of speech reading, an introduction to the oral interpreting process and specific techniques of oral interpreting. Speakers, videotapes, audiotapes and scripts are utilized during class practice sessions. Lab work is required, as is some outside hands-on work. Prerequisite(s): INTP-138.

INTP-147 Credits: 3
Interpreting Ethics
Students study the history of the interpreting profession, the models of the interpreting process and the RID Code of Ethics. Emphasis is placed on interpretation of the Code of Ethics, ethical behavior as an interpreter and learning to make ethical decisions in the workplace. Students apply knowledge of the RID Code of Ethics during extensive role-plays and group interactions. Prerequisite(s): INTP-131 and INTP-133.

INTP-148 Credits: 2
Seminar – Interpreting Issues
After completing their occupational experience, students participate in this seminar course. Topics covered include basic business management, résumé-writing, job interviewing skills, instruction in independent skill building (for use after graduation) and other areas determined during the occupational experience which need further discussion/explanation. Students will also be prepared to take the Wisconsin Interpreting Transliterating Assessment (WITA). Prerequisite(s): INTP-138.

INTP-149 Credits: 3
Social Aspects of Deafness
This course furthers students’ understanding of the ramifications of deafness by studying the impact of deafness on the individual, the family, education and employment. Historical changes and relevant legislative issues are discussed. A variety of deaf/hearing relationships are explored and the needs of special populations are presented. Prerequisite(s): INTP-139.

INTP-150 Credits: 1
Oral Interpreting
This course is designed to familiarize interpreting students and working interpreters with the specialized needs of hearing-impaired children and adults who choose to communicate by primarily relying on oral methods and to prepare students to interpret for this population. Topics covered include principles of speech reading, an introduction to the oral interpreting process and specific techniques of oral interpreting. Speakers, videotapes, audiotapes and scripts are utilized during class practice sessions. Lab work is required, as is some outside hands-on work. Prerequisite(s): INTP-138.
### INTERDISCIPLINARY SUSTAINABILITY

**INTSUS-136**
**Credits:** 3  
**Sustainability**  
Student will analyze the interconnections between social, economic and environmental systems. Strong emphasis is placed on reducing costs by minimizing resource use within and outside the organization. Various methods are illustrated to reduce waste and fossil fuel consumption, evaluate options to current waste disposal practices, and investigate alternative energy options.

### IT/COMPUTER INFORMATION SYSTEMS

**IT-107**
**Credits:** 3  
**Social Networking and Business**  
This course is an introduction to social networking, communication, and collaboration tools utilized in a business environment. Students will learn to set up, use and support these tools. Emphasis will be placed on proper business communication and development of a personal résumé that supports work within the information technology field.

### IT PROGRAMMING/DEVELOPMENT

**ITDEV-110**
**Credits:** 3  
**Introduction to Object-Oriented Programming**  
This course focuses on the object-oriented paradigm. The student will use test-driven development to create object-oriented classes. Students will be introduced to programming fundamentals such as flow control, decisions, variables and simple data structures (arrays). Emphasis will be placed on class design, implementation and problem-solving.

**ITDEV-115**
**Credits:** 3  
**Intermediate Object-Oriented Programming**  
This course focuses on intermediate object-oriented concepts, such as encapsulation, data hiding, inheritance and polymorphism. Students will be introduced to file I/O, data abstraction, pointers and database access. Emphasis will be on class design, implementation, and problem-solving using databases. MATC strongly recommends that students complete ITDEV-110, or have the equivalent skills, prior to enrollment in this course.

**ITDEV-117**
**Credits:** 3  
**Logic and Problem-Solving**  
This course presents a formal approach to logical thinking and problem-solving using mathematical structures. For students to think logically and solve problems, they need to think abstractly. This means to use logically valid forms of argument, both direct and indirect, to derive new results from those already known to be true. Discrete mathematical structures are the abstract structures that derive, categorize and reveal the underlying relationship among discrete mathematical objects such as set theory, logic, graph theory and finite-state automate. This course will teach these discrete mathematical structures and will show how they relate to the areas of data structures and algorithms in computer science. MATC strongly recommends that students complete ITDEV-110, or have the equivalent skills, prior to their enrollment in this course.

**ITDEV-120**
**Credits:** 3  
**Programming in C**  
A study is made of the capabilities of the C programming language. Students will learn how to create, edit, execute and debug C programs. Operations, relations, data structures, and library functions are emphasized. MATC strongly recommends that students complete ITDEV-120, or have the equivalent skills, prior to enrollment in this course. Prerequisite(s): ITDEV-115.

**ITDEV-121**
**Credits:** 3  
**Advanced Programming With C++**  
Advanced programming topics in C++ will be covered, emphasizing object-oriented programming and design techniques. Topics covered include objects and classes, inheritance and composition, streams and files, arrays, strings, pointers, containers, virtual functions, multi-file projects, the standard template library and error handling. MATC strongly recommends that students complete ITDEV-120, or have the equivalent skills, prior to enrollment in this course. Prerequisite(s): ITDEV-120.

**ITDEV-125**
**Credits:** 1  
**Secure Coding for Developers**  
In this course, the principles of secure coding will be covered. In particular, after addressing the major issues with coding such as hijacking attacks, buffer overflow, code injection, SQL injection, etc., the preventive and counterhack methods such as input validation, sandboxing, controlling hijacking attacks, etc., will be discussed. The learner will also learn about different tools for secure coding. Prerequisite(s): Familiarity with a high-level language such as C, C++, C#, VB.Net, Java, or a scripting language such as Javascript, Python or PHP.

**ITDEV-126**
**Credits:** 1  
**Introduction to Database Management**  
Students will use Microsoft Access and SQL server to create and maintain databases through use of SQL and other GUI-based tools. Integration with Office and cloud-based collaborative tools will be stressed.

**ITDEV-130**
**Credits:** 3  
**Visual Basic Programming**  
This course introduces students to object-oriented/event-driven programming in the .Net environment. Students develop interactive, event-driven applications. Toolbar and toolbox are used to create buttons, scroll bars, menus and other objects. Programming procedures and error-handling are incorporated in developing solutions.

**ITDEV-131**
**Credits:** 3  
**Visual Basic Programming 2**  
Course covers advanced Visual Basic.Net topics beginning with interactive, event-driven windows applications that students developed in ITDEV-130 Visual Basic Programming. Areas of concentration include custom controls, database functionality, and object-oriented methodologies. MATC strongly recommends that students complete ITDEV-130, or have the equivalent skills, prior to their enrollment in this course. Prerequisite(s): ITDEV-130.

**ITDEV-132**
**Credits:** 3  
**Windows Scripting**  
This course is designed to teach students how to write scripts for developing customized tools in Windows-based computers. Microsoft’s main scripting technologies are introduced and covered. The primary environments will be Microsoft Visual Basic Scripting Edition (VBScript), Windows Script Host (WSH), active Directory Service Interfaces (ADSI), the Script Runtime library and Windows Management Instrumentation (WMI). MATC strongly recommends that students complete a scripting course, or have the equivalent skills, prior to enrollment in this course.

**ITDEV-140**
**Credits:** 3  
**Programming with Java**  
This course introduces object-oriented programming with Java and the Java Development Toolkit (JDK). The focus is on the design and development of well-tested class objects using test-driven development (TDD) and JUnit or a similar paradigm. The tested objects become components of general-purpose Java applications. MATC strongly recommends that students complete ITDEV-130, or have the equivalent skills, prior to their enrollment in this course. Prerequisite(s): ITDEV-115.

**ITDEV-141**
**Credits:** 3  
**Advanced Programming With Java**  
This course focuses on advanced topics in Java including multithreading, Java beans, servlets, Java server pages, and network programming. More advanced topics on the graphical user interfaces and applets in Java also will be covered. MATC strongly recommends that students complete ITDEV-140, or have the equivalent skills, prior to their enrollment in this course. Prerequisite(s): ITDEV-140.
ITDEV

DEGREE/DIPLOMA COURSE DESCRIPTIONS

ITDEV-12 Credits: 3
Linux Shell Scripts
Students in this course will learn how to write shell scripts in Unix and Linux environments. Bash is the main shell that is used. In addition, other shells such as Bourn and C shell will be introduced and compared with each other. The focus of this course will primarily be on developing script applications. In addition, topics on system and network administration scripting will be covered.
MATC strongly recommends that students complete a programming or scripting course, or have the equivalent skills, prior to enrollment in this course.

ITDEV-150 Credits: 3
Database Management With SQL
This is a fundamental course in database concepts, design and implementation involving the relational database model.
Students will create, query and update relational databases using Structured Query Language (SQL) and the Oracle database management system.

ITDEV-151 Credits: 3
Advanced SQL Programming Using Oracle Database Tools
Students learn how to use SQL in the development of applications that access a relational database management system and become skilled in incorporating SQL into an application using embedded SQL commands.
Students discover how to use stored procedures and triggers that move SQL code from the client server to the database server. Students will be able to write complex queries, modify data, perform advanced calculations using functions, execute advanced sub queries, complex joins, control transactions, and create advanced tables, views and indexes. Participants in this class are expected to have a working knowledge of SQL and a procedural programming language.
MATC strongly recommends that students complete ITDEV-150, ITDEV-120, and ITNET-144, or have the equivalent skills, prior to enrollment in this course.

ITDEV-153 Credits: 2
SQL Server Administration
This course covers Microsoft SQL Server database administration.
Students will learn to install SQL Server onto a Windows NT based server. Using the native command line as well as the administrative console, students will then learn to establish databases, build and load tables, create backup and restore procedures, establish security roles and assign users to them.

ITDEV-154 Credits: 3
Data Structures and Programming
This course focuses on advanced data structures used in programming.
Students will solve problems by using advanced data structures such as trees, queues, stacks, linked lists and heaps.
MATC strongly recommends that students complete ITDEV-15, or have the equivalent skills, prior to enrollment in this course.

ITDEV-156 Credits: 3
Web Programming With Scripts (JavaScript)
This course teaches how to build websites that interact with the user by means of client-side scripts. It explores HTML techniques such as tables, frames and forms. Programming fundamentals in JavaScript, as well as web application development with objects, pop-up windows and cookies, for making interactive web pages.
MATC strongly recommends that students complete ITDEV-130, or have the equivalent skills, prior to enrollment in this course.

ITDEV-160 Credits: 3
Advanced Web Development
This course covers web development using server side scripting. It includes database access with SQL and technologies such as XML, ASP and CGI/Perl.
MATC strongly recommends that students complete ITDEV-160, or have the equivalent skills, prior to enrollment in this course.

ITDEV-161 Credits: 3
Client/Server and E-Commerce Implementation
Students will investigate the theory and concepts of client/server implementations with advanced database concepts and practices including the use of both of these technologies in the development of electronic commerce sites.
MATC strongly recommends that students complete ITDEV-150 and ITDEV-170, or have the equivalent skills, prior to enrollment in this course.

ITDEV-165 Credits: 3
JavaScript – Part 2
This course is an introduction to client-side scripting in web applications. Hands-on lab will include programming examples.
Students will learn the basics of JavaScript used in computer simulations and games. Emphasis is placed on bringing together all CSG components (i.e., audio, graphics and code) into a completed computer simulation.
MATC strongly recommends that students complete ITDEV-180, or have the equivalent skills, prior to enrollment in this course.

ITDEV-166 Credits: 3
Java Programming – Part 2
This course covers intermediate JavaScript coding techniques such as arrays, complex formulas, string manipulation and form interaction.
The course focuses on the design and code writing of interactive JavaScript programs. The student will develop intermediate problem-solving skills, structured coding style, and logical thinking.
MATC strongly recommends that students complete ITDEV-165, or have the equivalent skills, prior to enrollment in this course.

ITDEV-167 Credits: 3
Systems Analysis and Design
Business computer system concepts are presented.
The role of the systems analyst is discussed. Traditional (life-cycle) systems development methodologies utilized by project teams and system trends of today are described.
MATC strongly recommends that students complete or enroll in ITDEV-130 and ITDEV-150, or have the equivalent skills, prior to enrollment in this course.

ITDEV-168 Credits: 3
Mobile Application Development
Students will learn how to create applications for mobile devices using concepts presented in ITDEV-140 Programming with Java. Topics include XML, widgets, lists, menus, file and database access as well as communicating with the internet.

ITDEV-169 Credits: 3
Advanced OO Programming
This course continues to focus on object-oriented programming languages and tools used in computer simulations and games.
Emphasis is placed on bringing together all CSG components (i.e., audio, graphics and code) into a completed computer simulation.
MATC strongly recommends that students complete ITDEV-180, or have the equivalent skills, prior to enrollment in this course.

ITDEV-170 Credits: 3
Programmer Analyst Internship
This is a cooperative training program involving actual work experience.
Students obtain a position at an approved work station and work under the supervision of an instructor-coordinator.

ITDEV-171 Credits: 3
Integrated Project – Programmer/Analyst
This course is a capstone project that reflects the student’s culminating experience in IT.
Students will integrate their knowledge and skills in IT, reflect upon the work they have produced throughout the program, put thoughts about their work into writing, demonstrate core ability skills, display overall comprehension of their own discipline, and evaluate their learning based on the program’s specific learning outcomes.
MATC strongly recommends that students complete or enroll in ITSUP-198, or have the equivalent skills, prior to enrollment in this course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITNET-101</td>
<td>3</td>
<td>Network Communications (Network+)</td>
<td>Provides an introduction to networking technologies and provides good background material for students interested in preparing for CompTIA’s broad-based, vendor-independent networking certification exam, Network+. This course covers a wide range of material about networking such as LAN components, OSI model and standards organizations, transmission media, topologies, protocols (such as TCP/IP), interconnecting devices, wide area networks and security. Through hands-on exercises, demonstration and discussion, students will develop an understanding of what is involved in basic network design, network management, security and troubleshooting.</td>
</tr>
<tr>
<td>ITNET-110</td>
<td>3</td>
<td>Managing Windows Desktop (Client) Operating System</td>
<td>This course provides preparation for the Microsoft Certified Technology Specialist (TS) exam 70-680: Windows 7 Configuring. Students are introduced to the Microsoft Windows 7 system through lectures, demonstrations, discussions and hands-on lab exercises. Topics include installing, configuring, securing, troubleshooting and networking Windows 7.</td>
</tr>
<tr>
<td>ITNET-111</td>
<td>3</td>
<td>Microsoft Server Administration 2</td>
<td>This course provides preparation for the Microsoft Technology Specialist (TS) exam, 70-642: Windows Server 2008 Network Infrastructure, Configuring. Topics include the configuration and troubleshooting of IP addressing, name resolution, network access, file and print services, and managing network infrastructure. Students will be introduced to Microsoft Windows Server through lectures, demonstrations, discussions and hands-on labs. This course advances the content presented in ITNET-110 and ITNET-112. MATC strongly recommends that students complete ITNET-112, or have the equivalent skills, prior to their enrollment in this course.</td>
</tr>
<tr>
<td>ITNET-112</td>
<td>3</td>
<td>Microsoft Server Administration 1</td>
<td>This course provides preparation for the Microsoft Technology Specialist (TS) exam, 70-640: Windows Server 2008 Active Directory, Configuring. Topics include the configuration and troubleshooting of Active Directory DNS, server roles, objects and environment. This course advances the content presented in ITNET-110. MATC strongly recommends that students complete ITNET-110, or have the equivalent skills, prior to enrollment in this course.</td>
</tr>
<tr>
<td>ITNET-116</td>
<td>1</td>
<td>Introduction to Network Specialist</td>
<td>This class prepares students to successfully complete the IT Network Specialist – Accelerated program. It includes an overview of program expectations and introduction to technologies utilized in the program such as virtual PC and server, Camtasia screen casting and Blackboard. Setup and implementation of the communication tools used in the program will be covered to help facilitate communication between students and faculty.</td>
</tr>
<tr>
<td>ITNET-117</td>
<td>3</td>
<td>Routing/switching Essentials (Cisco 1)</td>
<td>This is the first of four classes designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. Instruction includes networking, networking terminology and protocols, network standards, LANS, WANS, OSI models, cabling, IP addressing and network standards. Students who complete all four courses will be prepared to take the Cisco Certified Networking Associate (CCNA) exam as well as the CompTIA Network+ exam at MATC’s VUE test center.</td>
</tr>
<tr>
<td>ITNET-118</td>
<td>3</td>
<td>Scaling Networks (Cisco 2)</td>
<td>This is the second of four classes designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. Instruction includes Ethernet, TCP/IP, RIP, IGRP and the Cisco IOS. Emphasis is placed on router configuration and is accomplished through hands-on labs using Cisco 2600 and 2800 routers. Prerequisite(s): ITNET-117.</td>
</tr>
<tr>
<td>ITNET-119</td>
<td>3</td>
<td>Connecting Networks (Cisco 3)</td>
<td>This is the third of four courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. A task analysis was used in the development of the content standards. The focus of this course continues with objectives from the CCNA exam. Subjects include VLAN, EIGRP, OSPF, Ethernet switching, VLANs, and rapid spanning tree protocol (STP). Prerequisite(s): ITNET-118.</td>
</tr>
<tr>
<td>ITNET-120</td>
<td>3</td>
<td>Introduction to Networks (Cisco 4)</td>
<td>This is the fourth, and final in a series of classes designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. The focus of this course continues with objectives from the CCNA exam. Subjects include advanced IP addressing, network address translation (NAT), ACLs, frame relay, dial-on-demand routing (DDR), PPP and WAN concepts. Additional time is spent preparing for the CCNA exam. Practice exams, study guides will be available. Prerequisite(s): ITNET-117.</td>
</tr>
<tr>
<td>ITNET-130</td>
<td>3</td>
<td>Network Routing and Switching</td>
<td>Students are introduced to the basics of router and switch technology and configuration. Topics include device purpose, hardware architecture, commonly used technologies, protocols, basic command syntax, common security concerns and attack vectors.</td>
</tr>
<tr>
<td>ITNET-131</td>
<td>3</td>
<td>Emerging Network Technologies</td>
<td>This hands-on training course explores installation, configuration and management of VMware vSphere, which consists of VMware ESXi/ESX and VMware vCenter Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Completing this course is required to sit for the VMware Certified Professional (VCP) examination. Prerequisite(s): Completion of or currently enrolled in ITNET-111 and ITNET-134.</td>
</tr>
<tr>
<td>ITNET-132</td>
<td>3</td>
<td>Storage Area Network (SAN)</td>
<td>This course introduces students to an “open” storage curriculum that is focused on storage principles rather than on products. The objective is to provide a comprehensive introduction to storage technology, enabling participants to make more informed decisions about information management and storage regardless of storage platform.</td>
</tr>
<tr>
<td>ITNET-133</td>
<td>3</td>
<td>Cloud Infrastructure Services</td>
<td>This course is an “open” course focused on virtualization and the technology concepts and principles required to build a cloud infrastructure. This vendor-neutral class is applicable to all IT professionals whose responsibilities are expanding across all technology domains including servers, storage, networking and applications.</td>
</tr>
<tr>
<td>ITNET-134</td>
<td>3</td>
<td>Linux Overview</td>
<td>This course introduces the basics of Linux operating systems. Students learn how to install, configure and use Linux. The main emphasis is on the Linux shell commands and simple shell scripts.</td>
</tr>
</tbody>
</table>
ITNET-162 Credits: 1
Networking Basics
In this introductory class, students will learn about various networking components, transmission basics/media, and IP configuration fundamentals. Through hands-on activities, students set up small networks and perform basic troubleshooting tasks.

ITNET-163 Credits: 1
TCP/IP including IPv6
This course covers the OSI and the TCP/IP reference modules, the TCP/IP protocol suite, including IPv4 and IPv6 versions of various protocol elements, including addressing, sub-netting DNS, DHCP, ARP, FTP among others. Binary and hexadecimal systems are also covered.

ITNET-181 Credits: 3
Web Systems Management
Students focus on the management of web server hardware and software. Server/network monitoring software is implemented to evaluate the system's performance regarding e-commerce transaction volume and website traffic. When is web traffic and transaction volume the greatest? What is the impact on the web server? Can the system be scaled up easily with the increase in web traffic? These are all examples of typical questions that need answers. Computer security will also be a major unit of discussion in the course, with such topics as authentication, access control, secrecy, data integrity, encryption, and auditing as a part of the unit. MATC strongly recommends that students complete ITNET-102, or have the equivalent skills, prior to enrollment in this course.

ITNET-198 Credits: 2
Network Specialist Internship
Students enrolled in this course complete an internship involving actual work experience or a networking capstone project. The internship requires students to obtain an instructor-approved IT position and work under the supervision of a manager/coordinator. The networking capstone project requires students to integrate their knowledge and skills in IT, reflect upon the work they have produced throughout their program, put their thoughts about their work into writing, demonstrate core ability skills and display overall comprehension of their program. MATC strongly recommends that students complete or enroll in ITNET-198, or have the equivalent skills, prior to enrolling.

ITSEC-114 Credits: 3
Information Security Principles
This course is designed to give students a broad knowledge of information security while addressing the five phases of security: inspection, protection, detection, reaction and reflection. Students learn to analyze the most critical threats and threats, curtail an information security strategy and architecture, and plan for and respond to intruders. The 10 domains of the CISSP certification and Windows workstation security are covered. Students in online sections of this course have access to a virtual server to complete the required lab work.

ITSEC-120 Credits: 3
Security Policies and Procedures
Students learn how to develop a security vision statement; learn effective but simple written security policies and procedures to protect information, people and property; control e-commerce information systems; and comply with laws and regulations. To do so, students evaluate information and systems, assign ownership and responsibilities and develop an emergency response plan. MATC strongly recommends that students complete ITSEC-114, or have the equivalent skills, prior to enrollment in this course.

ITSEC-122 Credits: 3
Web/Application Security
This course is designed to educate students about the security issues of the web, web browser and web services. In particular, students will learn about the client as well as server-side security measures. At course completion, students will be able to define, design and implement a secure website as well as establish an end-to-end secure web link between a client and server. Topics such as SSL, open SSL and CGI Security are covered. MATC strongly recommends that students complete ITSEC-116, or have the equivalent skills, prior to their enrollment in this course.

ITSEC-124 Credits: 3
Network Security (Security+)
Students will focus on the fundamentals and implementation of network security including secure access methods and vulnerabilities in network protocols, operating systems and network applications. Students will use techniques and tools for developing secure infrastructure. MATC strongly recommends that students complete ITNET-101, or have the equivalent skills, prior to enrollment in this course.

ITSEC-126 Credits: 3
Computer Forensics
This course familiarizes the student with methods of properly conducting a computer forensics investigation, beginning with a discussion of ethics. The goal is to conduct a structured investigation to determine exactly what happened, and who was responsible, and to perform the investigation in such a way that the results are useful in a criminal proceeding. Students will practice how to collect and analyze the digital evidence left behind at a crime scene. This course maps to the objectives of the International Association of Computer Investigative Specialists (IACIS) certification. MATC strongly recommends that students complete ITSUP-102, or have the equivalent skills, prior to enrollment in this course.

ITSEC-130 Credits: 3
Windows Security 1
This course covers concepts and administration of a Windows network that are essential to making a Windows network secure. The emphasis is hands-on labs that prepare students for the advanced security concepts covered in the second class, ITSEC-135. MATC strongly recommends that students complete ITSEC-116 or ITNET-101, or have the equivalent skills, prior to enrollment in this course.

ITSEC-136 Credits: 3
Unix/Linux Administration and Security
Unix/Linux Server hardening methods and tools are covered in this course. In addition, the security tools and application inside Unix/Linux are taught. Particularly, students will learn how to protect password files, monitor log files, use port scanners, network scanners, traceroute and ping. Additional topics include secure remote connections such as SSH. MATC strongly recommends that students complete ITSEC-124 and ITNET-161, or have the equivalent skills, prior to enrollment in this course.

ITSEC-140 Credits: 3
Router Security
This course covers general network security and introduces routers and their configurations, routing and routed protocols, assess list, NAT, configuring network access server for CiscoSecure ACS and TACACS+ and RADIUS. Basic firewall configuration and IDS/IPS concepts are also covered. MATC strongly recommends that students complete ITSEC-124, or have the equivalent skills, prior to enrollment in this course.

ITSEC-142 Credits: 3
Cisco Security Using PIX Firewall
This course is an introduction to Cisco network security. Students are introduced to the concepts, principles, types and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. Competencies include configuration and monitoring of PIX firewalls. MATC strongly recommends that students complete ITNET-132, or have the equivalent skills, prior to enrollment in this course.

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ITSEC – ITSoC

DEGREE/DIPLOMA COURSE DESCRIPTIONS

ITSEC-145
Credits: 3
Perimeter Security
This course covers advanced router configuration, advanced firewall configuration and management, VPN solutions, configuration and management of IDS/IPS, log monitoring, consolidation and reporting. Designing secure network architectures is also covered. Labs utilize a variety of equipment and software from a number of different vendors. MATC strongly recommends that students complete ITSEC-140, or have the equivalent skills, prior to enrollment in this course.

ITSEC-146
Credits: 3
Security Measures and Intrusion Detection
This course is concerned with the collection of events from audit trails, network monitoring systems and intrusion detection systems as well as developing a system to provide early warning of information attack. The class teaches students how to identify, exploit and secure well-known and little-known vulnerabilities in Microsoft Windows and UNIX/Linux operating systems. Moreover, it explores common weaknesses in router and firewall installations, teaching the methods that are used to circumvent traditional and “hardened” security filters or firewalls. This core technology area is also concerned with fusion of data from multiple sensors to form a real-time picture of the information assurance battle space. Protective measures and incident response checklist are covered in this course. MATC strongly recommends that students complete ITSEC-135 or ITSEC-136, or have the equivalent skills, prior to their enrollment in this course.

ITSEC-148
Credits: 3
Securing Wireless Devices and Networks
Students learn wireless network fundamentals and physical layer standards to build and secure WLAN; to install, configure and manage Cisco Aironet and 3Com Air Connect security and network security settings; and troubleshooting. Devices such as PDAs, wireless cameras and other cutting-edge technologies will be explored. MATC strongly recommends that students complete ITSEC-124, or have the equivalent skills, prior to enrollment in this course.

ITSEC-149
Credits: 3
Emerging Issues in Information Security
The impact of new technologies on information security is the current issues seminar topic, and others are being planned. This seminar-format course is designed to cover “hot” topics in information assurance technology. The course emphasizes various current or emerging conditions/problems and possible responses/solutions to them. Topics change based on emerging current issues and potential future topics may include: advanced OS security; cryptography; forensics, ethics, RFID, VoIP, nanotechnology and others. MATC strongly recommends that students complete ITSEC-114, or have the equivalent skills, prior to their enrollment in this course.

ITSEC-151
Credits: 3
IT Auditing
In this course, all six domains of the Certified Information Systems Auditor (CISA) exam are covered including the knowledge and technical concepts as specified by CISA certification. These domains include information system auditing process, IT governance, system and infrastructure lifecycle management, IT service delivery and support, protection of information assets, business continuity, and disaster recovery. MATC strongly recommends that the students complete ITSEC-114, or have the equivalent skills, prior to their enrollment in this course.

ITSEC-152
Credits: 3
Information Security Risk Management
This course will introduce the student to information security risk management frameworks, based on internationally accepted standards from the National Institute of Standards and Technology (NIST), the International Organization for Standardization (ISO) and others. Students will become familiar with the basic aspects of the various standards, and will practice their use in measuring risks related to security, regulatory compliance and audits. At course completion, students will have an understanding of risk management strategies and practices, as well as some basic skill in practical application of those strategies.

ITSEC-155
Credits: 3
Mobile Devices Forensics
Students will learn the history and evolution of mobile forensics, understand the cellular network and components, learn the legal aspects in obtaining cellular evidence. Also the class will cover imaging mobile devices, understanding cellular records and their use in cellular evidence. Students will learn the ability to utilize forensics tools to conduct analysis of mobile devices, in addition to being able to create an evidence case report. Prerequisite(s): ITSEC-126.

ITSEC-156
Credits: 3
Packet Analysis (Wireshark/Nmap)
In this course students will be introduced to Wireshark and Nmap. Wireshark is a tool used for troubleshooting networking problems, and Nmap is used as a penetration testing tool. Students will be introduced to Wireshark interface; how to capture traffic, create and apply capture filters; define time values and interpret basic trace files such as ARP, HTTP, HTTPS, Telnet, FTP, SSH. Students will also be introduced to Nmap and its capability as a security tool to scan different operating systems.

ITSEC-166
Credits: 3
Advanced Forensics
This course will address advanced topics in computer forensics, mobile forensics, network forensics and incident response. Topics include data hiding, encryption, advanced Windows registry, steganography and password recovery. Prerequisite(s): ITSEC-156.

ITSEC-176
Credits: 3
Malware Forensics
This course will start from malware basics and gradually teach the learners how to perform a malware forensic investigation as a part of incident response. In addition, an introduction to reverse-engineering malware will be provided. Since familiarity with programming is necessary for this course, an introduction to programming using Python and/or C is covered at the beginning of the course. In addition, general familiarity with networking and TCP/IP, operating system internals (Windows and Unix), computer security, digital forensics, and incident response is very essential for this course.

ITSEC-190
Credits: 3
Information Systems Security Internship
This is a cooperative training program involving actual work experience. You will obtain a position at an approved work station and work under the supervision of a instructor-coordinator.

ITSEC-191
Credits: 1
Information Systems Security Internship 2
This is a cooperative training program involving actual work experience. You will obtain a position at an approved work station and work under the supervision of a instructor-coordinator. MATC strongly recommends that students complete ITSEC-190, or have the equivalent skills, prior to enrollment in this course.

ITSEC-194
Credits: 1
Security Project Implementation
The course emphasizes real and hands-on experience in different areas of security such as security assessment, virtualization, log file consolidation, design and installation of security tools such as firewalls, IDSs, VPNs, and other existing or new technologies.

IT WEB AND DIGITAL COMMUNICATION

ITSEC-101
Credits: 3
Social Media for Individuals
An introduction to social media concepts and the use of social media tools for personal and professional use. Tweeting, blogging, using location based and networking services will be explored. Learn how to share and engage with others. Discover how to set up and secure sites. The development and implementation of a professional persona utilizing social media will be an individual
project for the class. Twitter, Blogger, Google+, LinkedIn, Facebook, Pinterest, Instagram, Yelp and Foursquare will be some of the tools presented in class.

**ITSOC-102**  
**Social Media for Business**  
This course is an introduction to social media tools utilized in business both internally and externally for communication, collaboration and community building. The design, setup, use and support of these tools will be emphasized. Content, relationship, access and analytic strategies will be investigated. Students will develop and implement a social media plan for a business as a team project for the class. Twitter, Blogger, Google+, Facebook, Yammer, Yelp, Foursquare and Instagram will be some of the tools presented in class.

**ITSOC-105**  
**Google Apps**  
Google Apps is a cloud-based productivity suite that individuals and organizations connect and work from anywhere on any device. The suite provides for real-time communication and collaboration. Discover how to work in the “cloud.” Gmail, Calendar, Drive, Google+, Documents, Sites, Blogger, YouTube, and Google Voice are some of the tools presented in class.

**IT SUPPORT**

**ITSUP-101**  
**Computer Information Systems Fundamentals**  
Students will learn the concepts and terms to enable them to better understand the role of information technology, careers for computer professionals, basics in computer hardware, software and networking as well as the internet in business and society. A brief overview of the history of information technology, as well as strategic future direction is discussed. Topics include technology trends that affect computing and everyday life, such as concerns for data security, personal privacy, online safety, controversy over digital rights management, open source software, smartphone and tablet devices, and more. In addition, coverage of latest release of Microsoft Windows and Office will introduce students to new features of next generation consumer and enterprise software. This course provides instruction through a combination of lecture discussion and hands-on lab assignments.

**ITSUP-102**  
**CompTIA A+ Essentials and IT Technician**  
This course prepares students for the CompTIA A+ Essentials and IT Technician exams. Students should have a basic knowledge of computer hardware and software, or have completed the ITSUP-101 Computer Information Systems Fundamentals class. Students will work with hands-on labs that build and configure computers; replace parts; install and configure operating systems; and troubleshoot hardware, software, networking, and security problems. Additional topics and hands-on activities include microprocessors, motherboards, BIOS, disk and memory management, preventative maintenance, ESC, power supplies, virtualization, mobile devices, laptops, video, printers, software updates and optimization, managing device drivers and virus protection.

**ITSUP-103**  
**IT Documentation**  
Students will prepare technical support documentation using Microsoft and Google word processing and cloud tools along with screen capturing and diagramming software. This documentation will help future IT professionals, hardware and software assets, and logical and physical topologies.

**ITSUP-104**  
**Spreadsheets – Presentations**  
Students will design effective spreadsheets for organizing budgets, analyzing data with charts, tracking inventory and IT help desk incidents among other records using Microsoft Excel and Google spreadsheets. Students will also learn how to design visually captivating presentations for various audiences in the business world using Microsoft Powerpoint, Google presentations, and screen-recording software. In addition, cloud-based collaboration and productivity tools will be presented.

**ITSUP-105**  
**Advanced Troubleshooting Tools**  
Students will use a variety of troubleshooting tools to help support users. This course will include labs in resolving computer, network and security problems. Completion of ITSUP-102, ITNET-101 and ITSEC-124, or knowledge of this content, is recommended to take this course.

**ITSUP-106**  
**Linux Support**  
Students will acquire a practical understanding of how Linux works. This course will include Linux OS fundamentals, basic commands, and file system management as it applies to technical support. Students will work with hands-on labs that will use the GUI interface, as well as command line tools.

**ITSUP-107**  
**Malware Detection**  
This course will cover basic malware analysis and removal methodology. Students will examine ways of creating a safe environment, supporting users, and gain hands-on experience with commonly used tools and techniques for mitigating these malicious attacks (malware, rootkits and botnets).

**ITSUP-108**  
**Enterprise Desktop Support Technician**  
Credits: 3  
This course prepares students for Microsoft Enterprise Desktop Support Technician (MCITP 70-66) certification. Students learn how to identify the cause and resolve Windows desktop application issues, resolve networking and security issues, identify and resolve performance issues, solve hardware failures, solve enterprise wireless connectivity issues, solve enterprise remote access issues, troubleshoot VPN access and provide IPv6 support, identify and solve enterprise security issues, solve enterprise storage issues and resolve enterprise software update issues.

**ITSUP-140**  
**Support Center Analyst (HDI-SCA, HDI-DST, ITIL)**  
Credits: 3  
This course prepares students for HDI-SCA (Help Desk Institute Support Center Analyst) HDI-DST (Desktop Support Technician) and ITIL Foundation certifications, by teaching how to provide front-line support for customers. The course focuses on strategies for effective customer service with an emphasis on problem-solving and troubleshooting skills, call-handling procedures, incident management, and call tracking applications. Topics such as active listening skills and effective communication strategies will be covered, as well as strategies for improving one’s interactions with customers.

**ITSUP-142**  
**Cisco Security Using PIX Firewall**  
Credits: 3  
This course is an introduction to Cisco network security. Students are introduced to the concepts, principles, types and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. Competencies include configuration and monitoring of PIX firewalls. MATC strongly recommends that students complete ITNET-132, or have the equivalent skills, prior to enrollment in this course.

**ITSUP-150**  
**Emerging Technology Mobile Device Repair**  
Credits: 3  
This course provides students with expert mobile device repair knowledge and advanced repair skills. It incorporates both classroom education and hands-on, real-world repair scenarios where students will gain immediate knowledge to service and repair smartphones, cellular phones and hand-held devices. Students learn how to disassemble and repair iOS, Android and Windows mobile devices. Students also learn how to troubleshoot phone issues, resolve network communication issues on the device, and replace batteries, LCD, broken lens, cameras and touch screens. Course also teaches students the concepts of data transfers and recovery, jailbreaking, and cell phone locking and unlocking.

For more information: matc.edu or 414-297-MATC. Page 251
ITSUP-152 Credits: 3
Apple OSX Certified Support Professional (ACSP)
This hands-on course provides an in-depth exploration of troubleshooting of the Apple OSX operating systems and prepares students for Apple OSC Certified Support Professional (ACSP) certification. This course will teach students the best methods for effectively supporting users of the Apple OSX operating system. Course covers labs on installation, setup and configuration, OSX recovery, software updates, file system, FileVault, permissions and sharing, data management, application and processes, network configuration, network services, peripherals, printing and system startup. The course is a combination of lecture and hands-on case study exercises that provide practical real-world experience.

ITSUP-153 Credits: 3
Mobility+ Device Administration (IOS, Android and Windows)
This hands-on course prepares students for the Comp TIA Mobility+ certification exam. Students will gain knowledge and hands-on skills required to understand and research capabilities of mobile devices and features of over-the-air technology. Students will learn device administration for three major mobile platforms: IOS, Android and Windows Mobile. They will also learn how to deploy, integrate, support and manage a mobile environment ensuring proper security measures are implemented for devices and platforms while maintaining usability. Students will learn various encryption methods used for securing mobile devices, authentication best practices, disk and folder encryption, and other security concepts to help secure and protect data on mobile devices. This course is the combination of lectures and hands-on exercises with iPad, Google Nexus and Microsoft Surface Pro devices.

ITSUP-154 Credits: 1
Computer Support Troubleshooting Fundamentals
This course is designed to assist in maintaining, troubleshooting, upgrading and repairing a single-user workstation computer. Elementary knowledge of DOS and a working knowledge of application software are required before taking this course.

ITSUP-155 Credits: 3
Advanced Computer Troubleshooting and Repair
This course builds on the computer hardware and operating system troubleshooting fundamentals of CIS-163 (A+ Core and OS technologies). Through hands-on activities, students learn to troubleshoot and optimize computer hardware and operating systems. Lab activities include building and configuring desktop PCs, building and configuring multimedia PCs and configuring wireless networks. MATC strongly recommends that students complete ITSUP-102, or have the equivalent skills, prior to enrollment in this course.

ITSUP-159 Credits: 3
Web Maintenance/Security
Students focus on website maintenance such as making content changes to sites using tools such as JavaScript, monitoring traffic/transaction volume, implementing backup procedures, and installing software upgrades to a web server. Security will be a major component, discussing access control, virus problems and firewalls. Hands-on exercises will allow students to demonstrate competencies in the areas listed above. MATC strongly recommends that students complete ITSUP-101 and ITNET-102, or have the equivalent skills, prior to enrollment.

ITSUP-176 Credits: 3
IT Project Management
This course provides students with added critical skills needed for success in the ever-changing IT industry through understanding of PM genesis and its importance in improving the success of IT projects, demonstrating in-depth knowledge of PM terms and techniques, and applying various PM concepts to group projects as project manager or team member. Consequently, students capture excellent MS Project software skills and an appreciation of PM in the IT industry at large.

ITSUP-198 Credits: 2
Computer Support Specialist Internship
This course is a capstone project that will reflect the student’s culminating experience in the IT Computer Support Specialist program. Students will integrate their knowledge and skills in IT by working on the final project, demonstrating core ability skills, and displaying their overall comprehension of the discipline.

ITSUP-199 Credits: 1
Integrated Project – Computer Support Specialist
This internship course directs students to obtain an IT internship at local area employers. Based on the jobs available, students will perform required IT Computer Support Specialist activities, configure and install new software, troubleshoot, and solve issues with hardware, OS and applications, networks, and virtual setups and configurations.

LOGISTICS AND MATERIALS MANAGEMENT

LOGMGT-101 Credits: 1
Manufacturing Skills Safety
This class prepares the student to successfully complete the Manufacturing Skill Standards Council (MSSC) Safety online assessment. The class will concentrate on the specific content that is covered in the MSSC Safety module, and students that successfully complete the associated national exam will be awarded the nationally recognized MSSC Certified Production Technician Safety credential.

LOGMGT-102 Credits: 1
Manufacturing Skills Quality
This class prepares the student to successfully complete the Manufacturing Skill Standards Council (MSSC) Quality online assessment. The class will concentrate on the specific content that is covered in the MSSC Quality module, and students that successfully complete the associated national exam will then be awarded the nationally recognized MSSC Certified Production Technician Quality credential.

LOGMGT-103 Credits: 1
Manufacturing Skills Manufacturing Processes
This class prepares the student to successfully complete the Manufacturing Skill Standards Council (MSSC) Manufacturing Processes online assessment. The class will concentrate on the specific content covered in the MSSC Manufacturing Processes module, and students that successfully complete the associated national exam will be awarded the nationally recognized MSSC Certified Production Technician Manufacturing Processes credential.

LOGMGT-104 Credits: 1
Manufacturing Skills Maintenance
This class prepares the student to successfully complete the Manufacturing Skill Standards Council (MSSC) Maintenance online assessment. The class will concentrate on the specific content covered in the MSSC Maintenance module, and students that successfully complete the associated national exam will be awarded the nationally recognized MSSC Certified Production Technician Maintenance credential.

LOGMGT-131 Credits: 3
Supply Chain CRM Quality Assurance
This course examines how to focus the organization on the needs of the customer. Students will learn about assessing quality needs, enhancing relations, evaluating satisfaction and incorporating customer requirements into the design of products. This course uses the House of Quality matrix to build customer requirements into all phases of the delivery of products and services.

LOGMGT-144 Credits: 3
Production Planning and Inventory Control
This course focuses on inventory and planning concerns. The planning side of operations is examined including master scheduling, requirements planning, capacity management, shop floor control and forecasting.

LOGMGT-146 Credits: 3
Operations Management
This course is designed to acquaint students with the specialized vocabulary and problems that are encountered in manufacturing management. Tools and techniques for solving production process problems are presented with an emphasis on quality and productivity.

For more information: matc.edu or 414-297-MATC. Page 252
the text. Prerequisite(s): LOGMGT-190.

Purchasing
This course includes an analysis of the purchasing process, a review of purchasing activities, and identification of purchasing problems in modern organizations. Attention is given to the role of purchasing in the organization, supplier selection, negotiation, sourcing issues, inventory management and quality concerns. Prerequisite(s): MKTG-102.

International Logistics – Transportation/Documentation
Management of international transportation of both imports and exports is studied. Special attention is given to the preparation of export documentation and import documentation. Management and selection of international transportation modes and pricing regulations are explained.

Transportation
The entire transportation industry is examined, with emphasis on moving freight and providing insight on how to effectively work within the transportation industry. Selection and management of freight transportation services are explored, including shipping documentation, claims management, carrier pricing methods, carrier contract and price negotiations, transportation laws, regulations and how transportation management affects supply chain management. Also introduced are the special requirements needed for international transportation.

Transportation Pricing
Methods of assessing transportation rates and prices for all modes are explained. Computerized transportation rates are demonstrated. Methods of computing motor carrier rate, both less than truckload and truckload, are explained in addition to assessorial changes. Ability to negotiate favorable rates will be enhanced by understanding how the present system works. Prerequisite(s): LOGMGT-190.

Freight Claims
The law and court cases as they relate to freight loss, damage claims and strategies to minimize loss and damage in transit are studied. There will be an opportunity to study and discuss cases relating to freight loss and damage, and apply the law found in the text. Prerequisite(s): LOGMGT-190.

For more information: matc.edu or 414-297-MATC. Page 253
MACHTL-310 Credits: 3
Manual Vertical Milling Machine 1
This course offers more advanced instruction for machining operations on a manual vertical milling machine. Instruction is based on Machining Level 1 skill standards established by the National Institute for Metalworking Skills. Safety, part inspection, shop and job organization, job planning and proper machining procedures will be presented. Detailed information will be given on milling machine setup and operation to produce parts requiring slots, steps, bored and reamed holes. In addition to working on the manual vertical milling machine, the student will also learn how to set up and perform multiple operations on a drill press. Prerequisite(s): MACHTL-309.

MACHTL-316 Credits: 3
CNC Vertical Machining Center 1
Students become familiar with the setup and operation of a CNC vertical milling machine; learn to locate and identify various parts of the machine tool and controller; acquire fundamental skills and knowledge of tooling and machine setups; perform CNC program proveouts; and machine several parts. Students will read CNC programs including canned cycles G81 through G84. Special emphasis is given to preparing students to become setup people and operators. Prerequisite(s): MACHTL-304, MACHTL-309 and MACHTL-310.

MACHTL-317 Credits: 3
CNC Vertical Machining Center 2
Students gain further skills in becoming setup people and operators. Additional setup techniques, different programming formats and program editing will be covered in this course. Programming codes G02, G03, G04, G76 and G86 are emphasized. Special holding fixtures will also be introduced. Prerequisite(s): MACHTL-316.

MACHTL-318 Credits: 3
CNC Turning Center 1
Students become familiar with the setup and operation of a CNC turning machine; learn the various functions of the machine's controller, and acquire fundamental skills and knowledge of tooling and machine setups. Students become familiar with CNC programming techniques without actually doing the programming. Special emphasis is placed on preparing the student to become setup people and operators. Prerequisite(s): MACHTL-300, MACHTL-301 and MACHTL-304.

MACHTL-319 Credits: 3
CNC Turning Center 2
Students develop the necessary skills to become CNC turning center setup people and operators. While developing these skills, students learn taper turning, boring, taper boring, internal and external single-point threading, etc. Students will also develop skills in reading and interpreting CNC programs. Prerequisite(s): MACHTL-318.

MACHTL-320 Credits: 4
Introduction to CNC Turning Centers
Students are introduced to basic CNC turning setup and operation. The course begins with the student loading and running existing programs. After becoming familiar with the controls and the setup process, the student begins to edit existing programs. By the end of the course the student produces parts to print specifications from programs developed on their own. Prerequisite(s): MACHTL-310.

MACHTL-322 Credits: 4
Introduction to CNC Vertical Machining Centers
Students are introduced to basic CNC milling machine setup and operation. The course begins with the student loading and running existing programs. After becoming familiar with the controls and the setup process, the student then begins to edit existing programs. By the end of the course, the student produces parts to print specifications from programs developed on their own. Prerequisite(s): MACHTL-310.

MACHTL-325 Credits: 4
Surface Grinding
This course is designed to teach the student the basics of surface grinding on a manual surface grinder. General maintenance of the machine will be covered along with wheel mounting, chuck preparation, and work holding. The student will learn a variety of methods for squaring blocks. Slot grinding and angular grinding will also be covered.

MACHTL-346 Credits: 2
Machine Shop for Related Trades
Instruction in this course is based upon selected operations performed on the bench, drill press, engine lathe, milling machine and pedestal grinder.

MACHTL-347 Credits: 3
Single Spindle Automatic Screw Machine 1
This course offers instruction on the basic operations on an automatic screw machine. Instruction is based on Machining Level 2 skill standards established by the National Institute for Metalworking Skills (NIMS). Items of instruction will include using basic tools, tool sharpening, machine layout, part inspection, safety and job organization. Upon completion of the course the student will be able to set up and operate an automatic screw machine and produce parts that require basic operations.

MACHTL-348 Credits: 3
Single Spindle Automatic Screw Machine 2
This course offers more advanced instruction on the operations on an automatic screw machine. Instruction is based on Machining Level 2 skill standards established by the National Institute for Metalworking Skills (NIMS). Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the setup of screw machine tooling used for boring, recessing, deep hole drilling, the vertical holder and operational guidelines. Upon completion of the course, the student will be able to set up and operate an automatic screw machine and produce parts that require more operations and more complex setups.

MACHTL-349 Credits: 3
Single Spindle Automatic Screw Machine 3
This course offers more advanced instruction on the operations on an automatic screw machine. Instruction is based on Machining Level 2 skill standards established by the National Institute for Metalworking Skills (NIMS). Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the setup of screw machine tooling used for boring, recessing, deep hole drilling, the vertical holder and operational guidelines. Upon completion of the course, the student will be able to set up and operate an automatic screw machine and produce parts that require more operations and more complex setups.

MACHTL-350 Credits: 3
Single Spindle Automatic Screw Machine 4
This course offers more advanced instruction on the operations on an automatic screw machine. Instruction is based on Machining Level 2 skill standards established by the National Institute for Metalworking Skills (NIMS). Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the setup of screw machine tooling used for double feed out, shaving and thread forming and operational guidelines. Upon completion of the course, the student will be able to set up and operate an automatic screw machine and produce parts that require more operations and more complex setups.

MACHTL-355 Credits: 1
Machine Trades Science 1
This course explores science as it relates to the field of metalworking. The student is introduced to the metric system and its conversion formula, trigonometry as it is used in scientific experiments, computers as they are applied to metalworking, and electricity as a metalworking agent. Prerequisite(s): MACHTL-386.

MACHTL-360 Credits: 1
Metrology
Students are introduced to inspection terminology, measuring instruments, instrument handling and measuring techniques. Along with hands-on use of each measuring instrument, the course also provides the student with the criteria for proper instrument selection based on part print requirements.
### MACHTL – MASON

#### DEGREE/DIPLOMA COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Course Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACHTL-361</td>
<td>3</td>
<td>Multiple Spindle Automatic Screw Machine 1</td>
<td>This course offers instruction on the basic operations on a multiple spindle automatic screw machine. Instruction is based on Machining Level 2 skill standards established by the National Institute for Metalworking Skills (NIMS). Instruction will include using basic tools, tool sharpening, machine layout, part inspection, safety and job organization. Detailed information will be given on the basic screw machine setup, controls, tooling, work holding, and general operational guidelines. Upon completion of the course, the student will be able to set up and operate a multiple spindle automatic screw machine and produce parts that require basic operations. Prerequisite(s): MACHTL-360.</td>
</tr>
<tr>
<td>MACHTL-362</td>
<td>3</td>
<td>Multiple Spindle Automatic Screw Machine 2</td>
<td>Instruction is expanded to more operations on a multiple spindle automatic screw machine. Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the multiple spindle screw machine tooling used for turning, reaming and recessing. The student will be introduced to the steps for calculating a layout for the machine. Upon completion of the course, the student will be able to set up and operate a multiple spindle automatic screw machine and produce parts that require advance operations. Prerequisite(s): MACHTL-361.</td>
</tr>
<tr>
<td>MACHTL-363</td>
<td>3</td>
<td>Multiple Spindle Automatic Screw Machine 3</td>
<td>Course offers more advanced instruction on the operations of a multiple spindle automatic screw machine. Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the multiple spindle screw machine tooling used for shaving, internal and external threading. The student will produce a layout for each project. Upon completion of the course, the student will be able to set up and operate a multiple spindle automatic screw machine and produce parts that require complex operations.</td>
</tr>
<tr>
<td>MACHTL-364</td>
<td>3</td>
<td>Multiple Spindle Automatic Screw Machine 4</td>
<td>This course offers more advanced instruction on the operations of a multiple spindle automatic screw machine. Instruction will reinforce tool grinding, part inspection, safety and job organization. Detailed information will be given on the multiple spindle screw machine tooling used for thread rolling and the special attachments to produce a rolled thread. Upon completion of the course, the student will be able to set up and operate a multiple spindle automatic screw machine and produce parts that require complex operations, as well as create a layout.</td>
</tr>
<tr>
<td>MACHTL-367</td>
<td>1</td>
<td>Machine Tool Technology</td>
<td>This course is designed to teach the student safety, terminology and theory for the basic machine tools found in the common machine shop. Machine types, components, operations, tooling, machining applications and work holding are discussed. The student will also learn about different materials, machine ability and cutting tool selection.</td>
</tr>
<tr>
<td>MACHTL-371</td>
<td>3</td>
<td>CNC Automatic Turning 1</td>
<td>This course offers instruction on the basic operations and setup of a CNC automatic turning machine. Instruction will include basic setup, use of the CNC control, tools, machine layout, part inspection, safety and job organization. Detailed information will be given on the basic machine setup, controls, tooling, work holding and general operational guidelines. Upon completion of the course, the student will be able to set up and operate a CNC automatic turning machine and produce parts that require basic operations such as turning, drilling and reaming.</td>
</tr>
<tr>
<td>MACHTL-372</td>
<td>3</td>
<td>CNC Automatic Turning 2</td>
<td>This course offers instruction on the more complex operations on a CNC automatic turning machine. Items of instruction will include editing of the CNC program, calculations for the CNC program and more complex machining operations on the CNC automatic turning machine. Upon completion of the course the student will be able to edit a CNC program, setup and operate a CNC automatic turning machine, and produce parts that have complex operations such as boring, grooving and canned cycles.</td>
</tr>
<tr>
<td>MACHTL-373</td>
<td>3</td>
<td>CNC Automatic Turning 3</td>
<td>This course offers instruction on the more complex operations on a CNC automatic turning machine. Items of instruction will include creating a CNC program, calculations for the CNC program and more complex machining operations on the CNC automatic turning machine. Upon completion of the course the student will be able to edit a CNC program, transfer the program, and set up and operate a CNC automatic turning machine using complex operations such as external and internal threading and tapping.</td>
</tr>
<tr>
<td>MACHTL-374</td>
<td>3</td>
<td>CNC Automatic Turning 4</td>
<td>This course offers instruction on the more complex operations on a CNC automatic turning machine. Items of instruction will include creating CNC tool list, CNC program, calculations for the CNC program and more complex machining operations on the CNC automatic turning machine. Upon completion of the course the student will be able to create a CNC program from a part print, select the proper tooling, and set up the machine to produce the part to print specifications.</td>
</tr>
<tr>
<td>MACHTL-377</td>
<td>3</td>
<td>Machine Trades Mathematics 1</td>
<td>This course provides students with the necessary mathematical foundation for problem-solving in the metalworking trades. A review of the basic principles of arithmetic and algebra is offered.</td>
</tr>
<tr>
<td>MACHTL-385</td>
<td>1</td>
<td>Machine Trades Mathematics 2</td>
<td>This course presents an introduction to geometric methods applicable to the machine shop. It also provides students with an opportunity to analyze and solve a variety of practical machine trade applications and problems. Prerequisite(s): MACHTL-384.</td>
</tr>
<tr>
<td>MACHTL-386</td>
<td>1</td>
<td>Machine Trades Mathematics 3</td>
<td>This course presents an introduction to the trigonometric solution of shop problems. The basic right triangle functions and the oblique triangle laws of sine and cosine are used to solve problems. Prerequisite(s): MACHTL-385.</td>
</tr>
<tr>
<td>MACHTL-387</td>
<td>1</td>
<td>Machine Trades Mathematics 4</td>
<td>The application of trigonometry in the solution of more complex shop problems is presented. Included are problems with tapers, sine bar, dovetails, correlate distances, hole locations, measurement of screw threads, and measurement using rods and balls. Prerequisite(s): MACHTL-386.</td>
</tr>
<tr>
<td>MACHTL-391</td>
<td>1</td>
<td>Quality Control</td>
<td>This course is a continuation of MACHTL-360 Metrology. The level of precision is increased as more precise instruments and methods of inspection are taught. Gage blocks, the optical comparator, dial bore gages and the coordinate measuring machine (CMM) are just some of the advanced pieces of equipment that are introduced. The basic concept of statistical process control (SPC) is also presented. Prerequisite(s): MACHTL-386.</td>
</tr>
</tbody>
</table>

### BRICKLAYING AND MASONRY

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MASON-300</td>
<td>5</td>
<td>Fundamental Bricklaying</td>
<td>This course provides training in laying brick and blocks, with application to straight walls, corners and jambs. Students develop skills in the handling of bricklaying tools, spreading mortar, laying bricks and blocks to a line and striking joints.</td>
</tr>
<tr>
<td>MASON-302</td>
<td>1</td>
<td>OSHA/First Aid for Masons</td>
<td>First aid according to the Red Cross and the U.S. Occupational Safety and Health Administration guidelines, with an emphasis on masonry construction, will be covered in this course.</td>
</tr>
</tbody>
</table>
MASON – MATH

DEGREE/DIPLOMA COURSE DESCRIPTIONS

MASON-303 Credits: 5
Advanced Bricklaying
This course provides training in constructing walls with various brick bonds, brick sills, blocked walls and details of veneering. Emphasis is placed on developing masonry skills to accepted trade standards. Prerequisite(s): MASON-300.

MASON-306 Credits: 5
Advanced Masonry Techniques 1
Efficiency, productivity and professional workmanship are emphasized, while hands-on projects prepare the student for employment. Chimney construction and layout of a working masonry fireplace are taught. Prerequisite(s): MASON-303.

MASON-308 Credits: 1
Job Safety and Layout
The proper use, care and maintenance of tools and equipment of the trowel trades are studied with specific emphasis on construction safety. Basic building layout is placed on problem-solving, critical thinking and logical reasoning, making interpretations and incorporating percent applications, and organizing procedures in determining the application of skills to technical problems. Successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B is the equivalent of College Technical Mathematics 1 and 2 when taken in combination. Prerequisite(s): MATGEN-110 with minimum grade of C, or satisfactory MATC placement test score.

MATGEN-111 Credits: 3
College Technical Mathematics 2A
This course is a continuation of College Technical Mathematics 1A and 1B. Topics include: measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Prerequisite(s): MATH-114 with minimum grade of C.

MATGEN-112 Credits: 4
College Technical Mathematics 2B
This course is a continuation of College Technical Mathematics 1A and 1B. Topics include: measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Prerequisite(s): MATH-114 with minimum grade of C.

MATGEN-113 Credits: 5
College Technical Mathematics 1A (Applied Algebra)
Topics include: solving linear, quadratic and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Prerequisite(s): MATH-113 with minimum grade of C.

MATGEN-114 Credits: 2
College Technical Mathematics 1B (Applied Geometry and Trigonometry)
This course is a continuation of College Technical Mathematics 1A. Topics include: measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Prerequisite(s): MATH-114 with minimum grade of C.

MATGEN-115 Credits: 5
College Technical Mathematics 1
Topics include: solving linear, quadratic and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. Completion of MATH-113 and MATH-114 with a grade of C or better is equivalent to MATH-115. Also College Algebra and Trigonometry (MATH-230), or College Algebra (MATH-201) and Trigonometry (MATH-202) may substitute for MATH-115 and MATH-116 when taken in combination. Prerequisite(s): MATGEN-110 with minimum grade of C, or satisfactory MATC placement test score.

MATH-116 Credits: 4
College Technical Mathematics 2
Topics include: vectors; trigonometric functions and their graphs; identities; exponential and logarithmic functions and equations; radical equations; equations with rational exponents; dimension of a circle; velocity; sine and cosine graphs; complex numbers in polar and rectangular form; trigonometric equations; conic sections; and analysis of statistical data. Emphasis will be on the application of skills to technical problems. Prerequisite(s): MATH-114 or MATH-115 with minimum grade of C.
MATH-123 Credits: 3
Math With Business Applications
This course covers operations with fractions, decimals and real numbers; linear equations, proportions with one variable, percent, simple interest, compound interest, annuities; applications of math concepts to the purchasing/buying/selling process; interpreting basic statistics with business/consumer applications. Prerequisite(s): MATGEN-110 with minimum grade C, or satisfactory MATC placement test score.

MATH-189 Credits: 3
Introductory Statistics
Students taking Introductory Statistics display data with graphs, describe distributions with numbers, perform correlation and regression analyses, and design experiments. They use probability and distributions to make predictions, estimate parameters and test hypotheses. They draw inferences about relationships including ANOVA. Prerequisite(s): MATGEN-110, MATH-113, MATH-141 or satisfactory MATC placement test score.

MATH-197 Credits: 5
College Algebra and Trigonometry
With Applications
This course covers those skills needed for success in calculus and many application areas on a baccalaureate level. Topics include the real and complex number systems, polynomials, exponents, radicals, solving equations and inequalities (linear and nonlinear), relations and functions, systems of equations and inequalities (linear and nonlinear), matrices, graphing, conic sections, sequences and series, combinatorics and the binomial theorem. Prerequisite(s): MATH-200 with a minimum grade of B, or satisfactory MATC placement test score.

MATH-200 Credits: 4
Intermediate Algebra
Students study the construction and resulting properties of the real number system. Students simplify and factor algebraic expressions using fundamental laws and order of operations, solve first and second degree equations and inequalities in one variable, systems of equations and exponential and logarithmic equations, graph first degree and second degree equations and inequalities in two variables, inverse functions and solve equations involving rational expressions, fractional exponents and radicals. Students will learn the basic definitions of relations and functions, and perform operations on functions. Prerequisite(s): MATGEN-110 with minimum grade C, or a satisfactory MATC placement test score.

MATH-201 Credits: 4
College Algebra
Students study properties of the real and complex number system; quadratic, polynomial, rational, exponential and logarithmic functions; equations and inequalities; combinatorics; the binomial theorem; the use of matrices and determinants in solving systems of equations, systems of inequalities, non-linear systems, sequences, series and probability. Course includes use of a graphing calculator. Prerequisite(s): MATH-200 with a minimum grade of C, or satisfactory MATC placement test score.

MATH-202 Credits: 3
Trigonometry
Topics include circular functions, graphing of trigonometric functions, identities, equations, trigonometric functions of angles, inverse functions, solutions of triangles, complex numbers, DeMoivre’s theorem, polar coordinates, and vectors. Learning involves extensive use of a graphing calculator. Prerequisite(s): MATH-201 with minimum grade of C.

MATH-205 Credits: 4
Finite Mathematics
Topics include basic functions, mathematics of finance, systems of linear equations, matrices, linear inequalities and linear programming, probability, and Markov chains. Learning involves extensive use of a graphing calculator. Prerequisite(s): MATH-200 with a minimum grade of C.

MATH-206 Credits: 4
Contemporary Applications of Math
This course applies mathematics to: democracy and fair division, planning routes, networking, solving puzzles, guessing, data analysis, and patterns and chaos. Prerequisite(s): MATGEN-110 with minimum grade C, or satisfactory score on the MATC placement test.

MATH-230 Credits: 5
College Algebra and Trigonometry
This course prepares students for calculus. Topics include real and complex number systems, equations, inequalities, functions (linear, polynomial, rational, radical, exponential, logarithmic and trigonometric) and their graphs, systems of equations and inequalities (linear and nonlinear), conic sections, theory of equations, matrix methods of solution of linear equations, analytic trigonometry and applications of trigonometry. Learning involves extensive use of a graphing calculator. Prerequisite(s): MATH-200 with a minimum grade B, or satisfactory MATC placement test score.

MATH-231 Credits: 5
Analytic Geometry and Calculus 1
Introduces the basic properties of limits; rate of change of functions; continuity; derivatives of algebraic, trigonometric and elementary and transcendental functions and their applications of derivatives; the indefinite integral and its applications including areas, derivatives and integrals involving logarithmic exponential, inverse trigonometric and hyperbolic functions; curve sketching; finding maxima and minima. Use of a graphing calculator is required. Lecture. Prerequisite(s): MATH-202 or MATH-230 with minimum grade of C, or four years of high school math (two years of algebra, one year of geometry, and one semester of trigonometry) with minimum grade of B, or satisfactory score on MATC placement test.

MATH-232 Credits: 5
Analytic Geometry and Calculus 2
Introduces techniques and applications of integration, numerical approximation of definite integrals, improper integrals, infinite series and an introduction to first order differential equations, parametric equations and derivatives of parametric curves, polar coordinates in the plane and integrals using polar coordinates, transcendental functions, in determinate forms, Taylor’s formula and topics from analytic geometry. Use of a graphing calculator is required. Lecture. Prerequisite(s): MATH-231 with minimum grade of C.

MATH-233 Credits: 5
Analytic Geometry and Calculus 3
A continuation of MATH-232. Topics include vectors, geometry of space, vector valued functions, partial derivatives, multiple integrals, and vector analysis. Extensive use of the graphing calculator is required. Prerequisite(s): MATH-232 with minimum grade of C.

MATH-234 Credits: 4
Differential Equations/Linear Algebra
Topics include elementary differential equations, vendors, matrices, linear transformations, quadratic forms, Eigen values, and applications. Extensive use of the graphing calculator is required. Prerequisite(s): MATH-232 or MATH-233.

MATH-241 Credits: 3
Linear Algebra
Provides introduction to linear algebra. Covers systems of linear equations solved by use of matrices, properties and operations of matrices, determinants, operations with vectors, vector spaces, Eigen values and Eigen vectors, linear transformations and applications. Prerequisite(s): MATH-233 with minimum grade of C.

MATH-260 Credits: 3
Basic Statistics
Studies appropriate statistical techniques for the systematic collection, presentation, analysis and interpretation of data; also statistical inference including sampling techniques, confidence intervals, type I and II errors, hypothesis testing and results interpretation. Includes descriptive statistics, basic probability theory, the Central Limit theorem; probability distributions, linear regression, correlation and sample sizes. May require use of graphing calculator or computer software. Lecture. Prerequisite(s): MATH 200 with minimum grade of C or satisfactory MATC placement test score.
MATH – MCDES G

DEGREE/DIPLoma COURSE DESCRIPTIONS

MATH-270
Computer Applications for the Liberal Arts and Sciences
Credits: 3
This course introduces the role of computers in society, integrated applications software (word processing, presentation software and spreadsheet), email and the World Wide Web. Emphasis is on the computer as a problem solving tool in education, social and natural sciences and liberal arts. Prerequisite(s): MATGEN-110 with minimum grade of C.

MATH-275
Math Exploration for Elementary Teachers 1
Credits: 3
This course is intended for students enrolled in the teacher education track. Topics include theory of arithmetic of whole numbers, fractions and decimals. Also includes an introduction to algebra, estimation and problem-solving strategies. Prerequisite(s): MATGEN-110 with minimum grade of C or satisfactory MATC placement test score.

MATH-276
Math Exploration for Elementary Teachers 2
Credits: 3
Continuation of MATH-275 with geometry, statistics, and probability. Prerequisite(s): MATH-275 with minimum grade of C.

MATH-301
Math Applications
Credits: 1
Topics include a review of operations with numbers, fractions, decimals, calculator skills, formulas, percents and measurement conversions. The applications are related to food service.

MATH-304
Math Principles 1
Credits: 1
Topics include a review of operations with numbers, fractions, decimals, calculator skills, formulas, percents and measurement conversions. Applications are related to technical diploma programs. Prerequisite(s): Satisfactory MATC placement test score.

MATH-308
Math for Industrial Applications 1
Credits: 2
Concepts in basic algebra, along with principles of plane geometry, are studied. Emphasis is placed on calculating dimensions and angles of geometric figures related to industrial occupations.

MATH-309
Math for Industrial Applications 2
Credits: 2
Concepts of basic algebra, along with topics in elementary geometry, are studied. A heavy emphasis is placed on calculating dimensions and angles using geometric and trigonometric relationships in figures and drawings related to industrial occupations. Prerequisite(s): MATH-308 with a minimum grade of C.

MATERIALS/METALS

MATRLS-102
Materials Testing
Credits: 3
This lab/lecture course defines properties of engineering materials and then performs tests to measure these properties. ASTM procedures are examined and applied to many of the tests. Tests performed include hardness, tensile, impact, shear, compression, creep and bend testing. The course also covers failure modes such as fatigue and corrosion.

MATRLS-103
Nondestructive Testing
Credits: 3
The lab/lecture course emphasizes the use of nondestructive testing to inspect parts and components for defect/discontinuities. It also discusses the origins of common defects in manufactured products such as castings, wrought metal, and weldments. Lab work includes radiography, ultrasonics testing, dye penetrant testing, magnetic particle testing, visual inspection and eddy current testing. ASTM procedures are examined and applied to many of the tests.

MATRLS-105
Statistical Process Control
Credits: 2
This lecture course teaches the basic concepts of quality control and statistical process control (SPC). Histograms, normal distributions, control charts (including x and r, moving range, p and np), and process capability are covered. These tools are applied to common applications in manufacturing and service industries.

MATRLS-108
Principles of Metallography
Credits: 2
This lab/lecture course studies the microstructures of common ferrous alloys (carbon and alloy steels, cast iron) and their relationship to chemical composition, thermal cycles, and mechanical properties. Phase diagrams are used to understand microstructures. Laboratory methods covered include sample preparation, microscopic and macroscopic examination, and photography. Digital image analysis is introduced. Prerequisite(s): MATRLS-110.

MATRLS-110
Fundamentals of Heat Treatment of Metals
Credits: 2
This lab/lecture course studies the microstructure and property changes that occur during heat treatment of steel and cast iron, and relates these changes to the iron-carbon phase diagram. Treatments performed include hardening, tempering, normalizing, annealing, and surface hardening. The lab work will also include hardness testing and some metallography.

MATRLS-112
Advanced Metallography
Credits: 3
This course covers complex alloys and advanced laboratory techniques related to ferrous and nonferrous alloys including stainless steels, cast and wrought aluminum alloys, superalloys and powder metals. The relationship of composition and microstructures to properties of various engineering materials are studied. Materials used in power generating equipment are covered, especially those related to renewable energy. Prerequisite(s): MATRLS-108.

MATRLS-114
Advanced Heat Treatment of Metals
Credits: 2
This second course in heat treatment builds on the basic concepts of ferrous heat treatment and also works with nonferrous alloys. QT diagrams in steels, hardenability testing, and solution-age hardening of various alloys are covered. Computer software is used to predict the heat treat response of carbon and low alloy steels. Prerequisite(s): MATRLS-110.

MATRLS-130
Intermediate Nondestructive Testing
Credits: 3
This course is designed to meet the minimum standards for the American Society of Nondestructive Testing (ASNT) in the testing areas of ultrasonic, radiographic, eddy current and visual testing. Prerequisite(s): MATRLS-103.

MATRLS-151
Metallurgy and Materials Science
Credits: 3
This lecture/demonstration course studies engineering materials (metals, plastics, ceramics and composites). Topics include refining and recycling of metals, classification and uses of steels, cast irons, nonferrous alloys, plastics, material properties, phase diagrams, heat treatment, corrosion and solidification. Atomic structure and nanotechnology are discussed.

MECHANICAL TECHNOLOGY

MCDES G-102
Technical Drafting 1
Credits: 3
This course is designed to provide the principles of drafting as well as an introduction to computer-aided drafting. Geometric constructions, sketching, orthographic projection, section views, dimensions (without tolerances) and primary auxiliary views are covered in this course. Prerequisite(s): Completion of or currently enrolled in CIVIL-102.

MCDES G-104
Technical Drafting 2 with CAD
Credits: 3
This course covers screw thread representation, tolerance and fits, layout drawings, structural steel and weldment representation, secondary auxiliary views and development of prismatic and cylindrical surfaces and transitions. The relationship between parts is introduced through the use of assembly drawings. AutoCAD is used for all drawings. Prerequisite(s): MCDES G-102 and CIVIL-102.

For more information: matc.edu or 414-297-MATC. Page 258
MCDES-106 Credits: 3
Advanced Engineering Graphics
This course focuses on advanced engineering graphics concepts utilizing SolidWorks. Instruction includes advanced detailing of parts and assemblies, bills of materials, parametric equations, tables, and spreadsheets. This course will emphasize GD and T in the relationship between parts and fit calculations between mating parts such as gears, bushings, keys, retaining rings and fasteners. Prerequisite(s): MCDES-104.

MCDES-112 Credits: 3
Tool Design
This course is designed to give the mechanical design student knowledge in the design of simple jigs and fixtures, gauges and dies, using two and three dimensional design. Prerequisite(s): MCDES-106 and MCDES-114 or MCDES-133.

MCDES-114 Credits: 2
SolidWorks 1
This course introduces parametric solid modeling using SolidWorks software. Students focus on part modeling and assembly skills with an emphasis on design. Detail drawing with dimensioning and rapid prototyping techniques are also introduced. Prerequisite(s): CIVIL-102.

MCDES-116 Credits: 3
Design Elements
This course instructs students on the selection of machine elements (components) and their strength analysis. These elements include belts, chains, spur gears, keys, couplings, seals, bearings, clutches, brakes, electric motors and fasteners. Strength of materials concepts and fits are applied to the shafts that carry these elements. Prerequisite(s): MCDES-106 and MCDES-130.

MCDES-118 Credits: 3
Kinematics
This course covers the displacement, velocity and acceleration of four bar linkages, slider-crank, crank-shapers and compound mechanisms using graphical and analytical methods. Also covered are cam displacement diagrams, profiles, gear trains and epicyclics. Prerequisite(s): MCDES-104, MATH-116 and CIVIL-105.

MCDES-120 Credits: 1
Basic AutoCAD
Students are introduced to the use of AutoCAD software. The course is designed to be an introductory course enabling students to learn and apply computer-aided drafting (CAD) concepts relative to the preparation of construction drawings. Prerequisite(s): CABMIL-303 or PLUMB-300.

MCDES-124 Credits: 2
SolidWorks 2
This course introduces advanced solid modeling techniques using SolidWorks software with an emphasis on mechanical design. Topics include advanced modeling techniques in sweeps, drafts, blends, shells, and surfaces, advanced assembly techniques, sheet metal parts and weldments. Prerequisite(s): MCDES-114.

MCDES-125 Credits: 3
Design Problems
This is the capstone course for the Mechanical Design Technology associate degree. Students take the knowledge and skills acquired in other courses – drafting, statics, strength of materials, machine elements, mechanisms – and apply them to a design project. Students will select their own projects and define the scope, the path of the completion of the projects, perform necessary computations and complete all working drawings. Prerequisite(s): MCDES-130 and completion of or currently enrolled in MCDES-116.

MCDES-130 Credits: 3
Strength of Materials
Students analyze internal stresses on linear members. The course focuses on axial, direct shear, torsional shear and bending stresses. These stresses are also combined using Mohr’s circle. Prerequisite(s): MCDES-160.

MCDES-131 Credits: 2
SolidWorks Assemblies
Students create more complex assemblies (with Bill of Material and Balloons) and create parts within assemblies; students add parts from the part (predrawn) library. Students check interference with an assembly. Models are improved with threaded holes, drafts, shells, lips. Materials and material properties are added to models. Students create exploded views and animate assemblies. Prerequisite(s): MCDES-114.

MCDES-132 Credits: 2
SolidWorks Orthographics
Students expand the orthographic capabilities with section and auxiliary views. More control of the dimension style and title block appearance is covered. Dimension equations and table-driven (Excel) dimensions are introduced. Geometric dimensioning and tolerancing are added to the drawings. Sheet metal function of SolidWorks is introduced. Prerequisite(s): MCDES-114.

MCDES-133 Credits: 2
Inventor 1
This course introduces parametric solid modeling using Inventor software. Course is focused on modeling skills for creating parts, assemblies, detail drawings. Rapid prototyping techniques are also introduced. Prerequisite(s): CIVIL-102.

MCDES-134 Credits: 2
Inventor 2
This course introduces advanced solid modeling techniques using Inventor software with a focus on design. Topics include advanced modeling techniques in sweeps, drafts, blends, shells and surfaces, advanced assembly techniques, sheet metal parts and weldments. Prerequisite(s): MCDES-133.

MCDES-135 Credits: 2
PTC Creo (Pro/E) 1
This course introduces parametric solid modeling using PTC Creo (Pro/E) software with a focus on design. Topics include advanced modeling techniques in sweeps, drafts, blends, shells and surfaces, advanced assembly techniques, sheet metal parts and weldments. Prerequisite(s): MCDES-114.

MCDES-136 Credits: 2
SolidWorks Sheetmetal and Weldments
This course will provide the students with an overview of weldments and sheetmetal applications using SolidWorks. It will cover basic setup, template creation, part creation, part manipulation and drawing creation for both of these areas of application. Exploration of different methodologies will be a main focus. Prerequisite(s): MCDES-135.

MCDES-145 Credits: 2
PTC Creo (Pro/E) 2
This course introduces advanced solid modeling techniques using PTC Creo (Pro/E) software with a focus on design. Topics include advanced modeling techniques in sweeps, drafts, blends, shells and surfaces, advanced assembly techniques, sheet metal parts and weldments. Prerequisite(s): MCDES-135.

MCDES-160 Credits: 3
Statics
Statics is the study of forces on and in structures that are at rest. Forces, vectors, resultants, moments, couples, equilibrium, free-body diagrams, friction, centroids, and centers of gravity, and shear and moment diagrams are covered. Prerequisite(s): MATH-115 and CIVIL-102.

MCDES-162 Credits: 2
Engineering Materials
This course emphasizes engineering materials and processes used in manufacturing. Fundamentals include the properties and structure of materials for manufactured goods, such as ferrous and nonferrous metals and alloys, plastics, composites and ceramics, and the selection of materials for various functions. Casting and form-casting processes, mold casting, powder metallurgy, and metal and nonmetal fabrication processes are included.

MCDES-163 Credits: 2
Machining Process
This course introduces machining processes used in manufacturing such as turning, milling, grinding, CNC, water jet cutting, EDM, punch press, welding, drilling, reaming and tapping. The course emphasizes best practices in mechanical design and design for manufacturability. Labs are integral to the course and expose the student to the various manufacturing processes and practices.
MDRAFT – MEDAST

MECHANICAL DRAFTING

MDRAFT-315 Credits: 1
Manufacturing Methods
This is an introductory course in which students become familiar with various manufacturing methods. Lectures cover machining, welding, foundry, testing, assembly and forging methods.

MDRAFT-320 Credits: 1
Coordinate Blueprint Reading
Instruction is given in the interpretation of CNC coordinate piece part drawings. Students translate standard engineering drawings into coordinate drawings used in the programming of CNC machine tools. Prerequisite(s): MDRAFT-386.

MDRAFT-335 Credits: 5
Drafting Fundamentals
This course is designed to provide the principles of drafting as well as skill in the use of drafting equipment. Manual drafting equipment is used for sketching and some drawings. Students will use AutoCAD for the majority of drawings. Equipment use, lettering, geometric constructions, sketching, orthographic projection, section views, dimensions (without tolerance) and primary auxiliary views are covered in the course.

MDRAFT-336 Credits: 5
Working Drawings
This course covers tolerances and fits, screw thread representation, structural steel and weldment representation, secondary auxiliary views and pictorial views. AutoCAD is used for all drawings. Prerequisite(s): MDRAFT-335.

MDRAFT-337 Credits: 4
Detail and Assembly Drawings
This course will emphasize geometric dimensioning and tolerancing (GD and T), the relationship between parts (including fits) with detail and assembly drawings. Detailed drawings are used to create assembly drawings including bill of materials. Also covered is the representation of spur and bevel gears, cams and piping, and electronic schematics. AutoCAD (Release 2002) is used for all drawings. Prerequisite(s): MDRAFT-335.

MDRAFT-338 Credits: 4
Tool Design Problems
This course is designed to give the mechanical designer some knowledge in the design of simple jigs, fixtures, gauges and dies. It also covers the development of ruled surfaces and intersection of ruled surfaces. The course introduces the revision of drawings. AutoCAD is used for all drawings. Prerequisite(s): MDRAFT-337.

MDRAFT-340 Credits: 2
Applied Mechanics
This course is designed to introduce students to basic mechanical calculations. Students study such topics as forces, momentum, work, energy, angular motion, centroids and moments. Prerequisite(s): MATH-308.

MDRAFT-385 Credits: 1
Machine Blueprint Reading 1
This course covers the basic principles essential for visualization and training in the interpretation of blueprints and freehand sketches of simpler machine parts. Emphasis is placed upon orthographic projection principles and pictorial drawing.

MDRAFT-386 Credits: 1
Machine Blueprint Reading 2
Instruction is offered in the interpretation of blueprints that show job procedure methods and their relation to drafting. Attention is given to the representations of common machine processes, special forms of dimensioning, sections and other advanced drafting and design principles. Prerequisite(s): MDRAFT-385.

MEDICAL ASSISTANT

MEDAST-301 Credits: 2
Medical Assistant Administrative Procedures
This course introduces students to office management and business administration in the medical office. The student learns to schedule appointments, perform filing, record keeping, telephone and reception duties, communicate effectively with patients and other medical office staff, and keep an inventory of supplies. Students apply introductory medical coding skills and managed care terminology. Prerequisite(s): Admission to Medical Assistant program (31-509-1) and completion of or currently enrolled in HEALTH-107.

MEDAST-302 Credits: 3
Human Body in Health and Disease
Focuses on diseases that are frequently first diagnosed and treated in the medical office setting. Students learn to recognize the causes, signs and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis and prevention of common diseases. Prerequisite(s): HEALTH-101.

MEDAST-303 Credits: 2
Med Assistant Lab Procedures 1
Introduces students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students also perform routine laboratory procedures commonly performed in the ambulatory care setting under the supervision of a physician. Students follow laboratory safety procedures and federal regulations while performing specimen collection and processing, microbiology and urinalysis testing. Prerequisite(s): Admission to the Medical Assistant program.

MEDAST-304 Credits: 4
Medical Assistant Clinical Procedures 1
Introduces medical assistant students to the clinical procedures performed in the medical office setting. Students perform basic examining room skills including screening, vital signs, patient history, minor surgery and patient preparation for routine and specialty exams in the ambulatory care setting. Prerequisite(s): HEALTH-101.

MEDAST-305 Credits: 2
Medical Assistant Laboratory Procedures 2
Prepares student to perform laboratory procedures commonly performed by medical assistants in the ambulatory care setting under the supervision of a physician. Students perform phlebotomy, immunology, hematology and chemistry laboratory procedures. Prerequisite(s): MEDAST-303 or CLABT-303.

MEDAST-306 Credits: 3
Medical Assistant Clinical Procedures 2
Prepares students to perform laboratory procedures commonly performed by medical assistants in the ambulatory care setting under the supervision of a physician. Students perform phlebotomy, immunology, hematology and chemistry laboratory procedures. Prerequisite(s): MEDAST-304.

MEDAST-307 Credits: 2
Medical Office Insurance and Finance
Introduces students to health insurance and finance in the medical office. Students perform bookkeeping procedures, apply managed care guidelines and complete insurance claim forms. Students use medical coding and managed care terminology to perform insurance-related duties. Prerequisite(s): MEDAST-302; student must be admitted to the Medical Assistant program (31-509-1).

MEDAST-309 Credits: 2
Medical Law, Ethics and Professionalism
Prepares students to display professionalism and perform within ethical and legal boundaries in the healthcare setting. Students maintain confidentiality, examine legal aspects of the medical record, perform risk management procedures, and examine legal and bioethical issues. Prerequisite(s): Student must be admitted to Medical Assistant or Medical Interpreter program (31-509-1 or 30-538-1).

MEDAST-310 Credits: 3
Medical Assistant Practicum
Requires medical assistant students to integrate and apply knowledge and skills from all previous medical assistant courses in actual patient care settings. Students perform medical assistant administrative, clinical and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. Current CPR and first aid certificate required. Prerequisite(s): HEALTH-101, MEDAST-301, MEDAST-302, MEDAST-306 and MEDAST-303 or CLABT-303.

For more information: matc.edu or 414-297-MATC. Page 260
MEDICAL INTERPRETING

MEDINT-101 Credits: 3
Cultural Awareness
Recognize, respect and accept differences in customs, beliefs and behaviors in others. Learners will examine people’s specific differences and learn to respond from a variety of cultures.

MEDINT-102 Credits: 1
Spanish Regionalisms/English Variants
Students will explore words and expressions utilized in different countries as they relate to health, work and everyday living. Cultural ethnic background, historical and immigration factors are also examined.

MEDINT-103 Credits: 3
Introduction to Medical Interpretation
This course introduces the professions of translation and interpretation. The different types of translation and interpretation are explored. Actual translations will be done in class, as well as interpretation exercises. The language industry will be discussed, which includes freelance translation and interpretation. Comprehension assessment done during the class will determine the learner’s competency in both working languages. Prerequisite(s): Admission to the Medical Interpreter program (30-538-1).

MEDINT-104 Credits: 3
Applied Medical Interpretation 1
Develop interpreting skills needed within the healthcare environment. Learning centers around general information on healthcare and the healthcare system, functions within hospital departments, healthcare procedures and the terms needed for interaction in the healthcare environment. Culture in interpreting and communication skills for advocacy are analyzed.

MEDINT-105 Credits: 3
Medical Language Interpretation 2
Continue to develop accurate interpreting skills through practice and analysis. Simultaneous interpretation, managing communication, documentation, legal boundaries and interpreting in healthcare specialty areas are emphasized.

MEDINT-106 Credits: 2
Introduction to Medical Translation
Fundamental overview of the intricacies of converting texts from one language to another within the context of healthcare services. Coursework includes analysis and comprehension of English or Spanish source texts and the correct construction of writing in target languages. Explore selected materials, including patient information, medical journal articles and medical-legal documents and use sources available to medical translators.

MEDINT-107 Credits: 4
Bilingual Medical Terminology
This course delineates a detailed analysis and application of medical terms in English and Spanish. It offers the competencies required to meet or exceed the demands of medical interpreters and bilingual personnel within our nation’s healthcare systems as they work with patients of limited English proficiency.

MEDINT-110 Credits: 2
Applied Medical Interpretation 2
Continue to develop accurate interpreting skills through practice and analysis. Simultaneous interpretation, managing communication, documentation, legal boundaries and interpreting in healthcare specialty areas are emphasized.

MEDINT-111 Credits: 1
Applied Medical Interpretation 3
Through a variety of experiences such as job shadowing, role playing and practice, this course provides students with entry-level experiences in interpreting skills. Expands professional insights as students share and analyze fieldwork experiences. Prerequisite(s): Completion of or currently enrolled in MEDINT-110.

MEDINT-112 Credits: 3
Dual Language Enhancement for Healthcare Providers
This course highlights fundamental skills of written and oral language for healthcare professionals. Coursework includes composition, public speech and reading comprehension in the English and Spanish language. Prerequisite(s): Admission to the Medical Interpreter (30-538-1) program.

MEDINT-308 Credits: 2
Ethics and Standards for Medical Interpreters
This course delineates a critical overview of the applied ethics, risk management and legal practices found at local and national levels within healthcare organizations. It delineates the scope of service that must be observed by medical interpreters and bilingual personnel while working with patients of limited English proficiency.

MEETINGS/HOSPITALITY

MEET-151 Credits: 3
Introduction to Hospitality/Tourism
This course introduces the various components of the travel services industry including basic terminologies and tourism vocabulary. The course provides a general orientation to the program and a survey of travel career opportunities. Students learn to integrate current knowledge with ongoing events and trends of the travel and tourism industry.

MEET-166 Credits: 3
Destination and Attraction Marketing
Students will evaluate the marketing strategies of tourism industry destinations and attractions. Students will conduct basic marketing research studies, analyze pricing decisions, examine the impact of technology changes and create destination and attraction branding strategies. Prerequisite(s): TRAVEL-151 or MEET-151 and MKTG-102.

MEET-167 Credits: 3
Destination Geography/Tourism
This course provides an in-depth study of destinations for U.S. travelers. Students will explore selling destinations from a travel industry perspective and learn about the three aspects of geography – local, cultural and physical – as they relate to travel. Additionally, there is an overview of popular travel destinations.

MEET-169 Credits: 3
Group Travel Planning
This course offers an introduction to the operation of a group travel department. Students explore the benefits of planning group travel; research a variety of destinations, plan detailed itineraries and negotiate with travel suppliers; and learn the basics of group tours, and how to book a group with various travel vendors, such as bus companies, hotels, convention centers and attractions.

MEET-178 Credits: 3
Meeting and Convention Planning
This course introduces students to the meetings industry, including promotional activities, negotiating for meeting services, convention market salesmanship, customer service and convention servicing. Course content includes a study of the planning, marketing, execution and follow-up of meetings, conferences, conventions and package promotions. Facilities and event planning, as well as convention methods and techniques, are explored in-depth.

MEET-180 Credits: 3
Registration and Housing Logistics
This course enables the students to identify and develop tools that allow attendees to have a seamless meeting experience. One critical tool the students will learn in this course is to design a functional registration process. Students will also develop a housing process by creating rooming lists, coordinating the housing logistics, and managing sleeping guest rooms from blocks.

MEET-181 Credits: 3
Exposition/Special Event Management
This course focuses on the planning of special events of all types including expositions, meetings, conventions, trade shows, retail events, festivals, and non-profit events in the hospitality and event management industry. Emphasis is placed on the methodology of event planning including theme setting, building the target sponsorship, contracts, negotiations, site selections, planning event specifications, and working with budgets.
MEET – MGTDENV

DEGREE/DIPLOMA COURSE DESCRIPTIONS

MEET-184 Credits: 3
Negotiation/Risk Management
This course focuses on the art and science of negotiations, crisis planning and risk management, and contract legal issues in the meetings industry. Students learn to identify issues that are negotiable, the steps in the negotiation process, and commonly used negotiation techniques. The course also focuses on basic contract provisions and key clauses of a facility contract, as well as the unique elements and differences of hotel and convention center contracts.

MANAGEMENT/SUPERVISION AND LEADERSHIP DEVELOPMENT

MGTDENV-110 Credits: 3
Introduction to Labor Relations
This course provides a foundation for other courses in the labor studies relations area. It includes an overview of the study of labor, covering aspects of history, law, economics, union structure and politics relevant to labor.

MGTDENV-111 Credits: 3
Collective Bargaining
The student obtains practical and theoretical knowledge about managing or administering collective bargaining agreements. This course provides an in-depth study of the techniques needed for organized workers and their employers to resolve conflicting interests. Students will participate in mock bargaining, contract costing and proposal development. Other course topics include: how to survey members’ wants and needs, contract language development, mediation and arbitration.

MGTDENV-132 Credits: 3
Six Sigma Techniques
This course provides students with the skills and tools to collect and analyze data to solve problems, improve and control processes, and implement solutions within an organization. An emphasis will be placed upon the use of statistical techniques to create and implement a data collection plan and select solutions.

MGTDENV-134 Credits: 3
Legal Issues for Supervisors
Students apply the skills and tools necessary for supervisors to effectively function in today’s legal work environment. Each student will demonstrate the application of legal practices in both union and nonunion environments, analysis of the impact of U.S. employment laws, the impact of the global economy, the appeal process, reacting to legal charges, documenting the hiring and firing process, dealing with harassment issues, privacy issues, and summarizing legal issues facing contemporary supervisors.

MGTDENV-164 Credits: 3
Personal Skills for Supervisors
Students apply the skills and tools necessary to deal with time management, stress and challenges related to being a supervisor. Each student demonstrates the application of time management techniques, personal planning, continuous learning, valuing rights and responsibilities of others, effective communication, assertiveness, and dealing effectively with stress.

MGTDENV-185 Credits: 3
Group Leadership
The student learns the responsibilities required of group leaders: effective leadership, time management, organizing, problem solving, handling change, developing effective communication strategies, conducting meetings, planning and team building.

MGTDENV-188 Credits: 3
Project Management
In this course, students apply the skills and tools necessary to design, implement and evaluate formal projects. Each student demonstrates the application of the role of project management; develops a project proposal; uses relevant software; works with project teams; sequences tasks; charts progress; and deals with variations, budgets and resources, implementation and assessment.

MGTDENV-189 Credits: 3
Team Building and Problem-Solving
In this course, students apply the skills and tools necessary to facilitate problem solving in a team environment. Each student demonstrates the application of the benefits and challenges of group work, including necessary roles in a team, stages of team development, different approaches to problem solving, consensus, a systematic process of problem definition, data acquisition, analysis, developing alternative solutions, solution implementation, and evaluation.

MGTDENV-190 Credits: 3
Leadership Development
Students apply the skills and tools necessary to fulfill his/her role as a modern leader. Each student demonstrates the application of evaluating leadership effectiveness and organization requirements, including individual and group motivation strategies, implementing the mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

MGTDENV-191 Credits: 3
Supervision
In this course, students apply the skills and tools necessary to perform the functions of a frontline leader. Each student demonstrates the application of strategies and transition to a contemporary supervisory role including day-to-day operations, analysis, delegation, controlling, staffing, leadership, problem-solving, team skills, motivation and training.

MGTDENV-192 Credits: 3
Managing for Quality
Students will apply the skills and tools necessary to implement and maintain a continuous improvement environment. Each student demonstrates the application of a personal philosophy of quality including identifying all stakeholder relationships, meeting/exceeding customer expectations, having a systems-focused approach, using appropriate models and tools, managing a quality improvement project, and measuring the effectiveness of the continuous improvement activities.

MGTDENV-193 Credits: 3
Human Resource Management
In this course, students apply the skills and tools necessary to effectively value and apply employees’ abilities and needs to organization goals. Each student demonstrates the application of the various functions performed in contemporary human resources management including impacts of EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies and procedures, training, performance management, employee counseling and development, and effective use of compensation and benefit strategies.

MGTDENV-195 Credits: 3
Managerial Communications
In this course, students apply the skills and tools necessary to effectively deliver management messages in a written and oral format. Each student demonstrates the application of analyzing the communication situation including: planning and preparing the message; developing persuasive, informational, and negative messages in written and oral formats; demonstrating skills in basic writing mechanics and English grammar; demonstrating effective delivery of oral presentations; incorporating visual aids; and showing sensitivity to diverse audiences.

MGTDENV-196 Credits: 3
Recruiting and Selection
In this course, students will learn the importance of effective recruitment and selection processes as related to organizational effectiveness, sustainability, and competitive advantage. Students will gain an understanding of the role of human resource management in strategic planning (specifically as it relates or links to employment and workforce planning). Emphasis will be placed on the recruitment process, recruitment budget, and critical steps in the selection process, selection assessments, interviewing, and compliance with state and federal employment laws, regulatory agencies, and with internal company policies.

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MKTG DEGREE/DIPLOMA COURSE DESCRIPTIONS

MARKETING

MKTG-102 Credits: 3
Marketing Principles
This course covers the study of the marketing process as it relates to the problems and policies of the profitable operation of a business enterprise. Special attention is given to the role and significance of distribution channels, evaluation of consumer needs, price determination, promotional and sales strategy, and governmental regulations.

MKTG-104 Credits: 3
Selling Principles
The philosophy of salesmanship is introduced through learning to understand the societal role of salespersons and human behaviors, as well as to sell ideas, products, services and self. Students prepare sales presentations including the use of computer graphics, and practice various selling techniques while building self-confidence.

MKTG-106 Credits: 3
Retail Management
This introductory course covers store-based retailing, electronic and non-store retailing, retail marketing strategies, managing a store, buying and financial plans, and store operations. MS Excel is used in the course. Prerequisite(s): MKTG-102.

MKTG-107 Credits: 3
Customer Service Management
Consumer and business-to-business service initiatives are examined beginning with the skills needed to become a good service provider, going on to examine the managerial aspects of service. Measuring the effectiveness of service initiatives relative to profitability for an organization will be analyzed.

MKTG-109 Credits: 3
Textiles
This course is an introduction to textiles, with major emphasis on finished fabrics. Studies are made of fibers, yarns, fabric construction, coloration, finishes and care, as well as legal aspects and terminology as they relate to buying, selling and promotion of merchandise. Students assemble a swatch kit of sample fabrics, practice dyeing and printing fabrics, do performance tests and may experiment with stain removal.

MKTG-119 Credits: 3
Visual Merchandising
The proper use of equipment, signage and lighting for different display areas is covered. Students construct flying, case, wall and mannequin displays and study planograms and store planning, floor layout, store fixtures, display locations and merchandising presentation.

MKTG-124 Credits: 3
Apparel Marketing
Merchandising fashion goods – men’s, women’s, children’s apparel and accessories – is studied. Current trends in each classification of goods are discussed. Continuous review of retailers’ trade papers emphasizes the current aspects of fashion merchandising, and local applications are cited. The process of merchandise creation, from designer inception to consumer, is examined.

MKTG-125 Credits: 3
Advertising
Students will study the principles of advertising in relation to the overall marketing process. The course includes an in-depth examination of all the major mass media used in the communication process, as well as the development of an advertising plan including situation analysis, advertising objectives, media strategies and tactics, creative strategies and executions. Prerequisite(s): MKTG-102 or TV-101.

MKTG-129 Credits: 3
Advertising Campaign Strategies
The elements and principles of writing advertising copy for both print and broadcast advertisements are studied and applied. Major emphasis is on the creation of copy to solve various advertising problems. Students compile written materials for a portfolio. Prerequisite(s): MKTG-125.

MKTG-134 Credits: 3
IMC Management
This course introduces students to the essential concepts and practices of integrated marketing communications (IMC), which includes advertising, sales promotion, public relations, event marketing and sponsorships. It provides students with a solid understanding of organizational communication needs, the tools used in IMC, and how to plan and implement IMC programs to achieve marketing communications objectives. Prerequisite(s): MKTG-125.

MKTG-140 Credits: 3
Fashion Analysis
Students learn and apply creative talents in the design environment. Through interpreting the elements and principles of design, color, style, details, silhouette and trend influences, students will be able to interpret and analyze fashion products.

MKTG-144 Credits: 3
Project Parameters and Proposals
This course focuses on the importance of developing and facilitating client communications to ensure successful project delivery. Emphasis will be placed on meeting and exceeding client expectations through the construction of documentation and procedures to guide project development and execution, keeping clients educated and informed throughout projects.

MKTG-145 Credits: 3
Special Event Management
This course focuses on the planning of special events of all types including meetings, conventions, trade shows, retail events, festivals and non-profit events. Emphasis is placed on the methodology of event planning including theme setting, building the target, sponsorships, contracts, negotiations, site selections, planning event specifications and working with budgets.

MKTG-149 Credits: 3
Practical Application Workshop
This course focuses on the importance of delivering a project to a client in accordance with industry expectations, standards and deadlines. Emphasis will be placed on immersion into the agency-client experience.

MKTG-151 Credits: 1
Business Career Management
This course prepares business workers for managing their career in a positive direction. It stresses the importance of setting progressive career goals, developing personal traits for career success, and implementing career management strategies that guide an individual’s life-career planning process. The course focuses on understanding one’s interests, values, skills and lifestyle preferences, and employing effective job search strategies including developing effective résumé writing and interviewing skills. Personal skills that contribute to career success are highlighted, including developing a winning attitude and other positive work behaviors, practicing business etiquette and creating a professional image.

MKTG-160 Credits: 3
Sales Management
This course is primarily concerned with administration and management of an outside sales force and its activities. The course includes discussions and programs on recruiting, selecting, training, routing, supervising, paying and motivating the sales force. Computer spreadsheets are used for budgeting and sales forecasting. Prerequisite(s): MKTG-104.

MKTG-166 Credits: 3
Computer Applications in Marketing
In this course students use standard and proprietary software in marketing applications, such as new business development, sales territory management, sales proposals and sales presentations. Prerequisite(s): MKTG-102, MKTG-104.

MKTG-173 Credits: 3
Marketing Research
Marketing research is a systematic process for solving marketing problems and assessing new opportunities. This process includes problem recognition and definition; research design, methods and sampling; data collection and analysis; and communication of findings and recommendations. Prerequisite(s): MKTG-102.

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MKTG – MUSIC DEGREE/DIPLOMA COURSE DESCRIPTIONS

MKTG-174 Credits: 3
Marketing Management
Through the use of computers and hands-on activities, students learn to access, manipulate and analyze marketing data for decision-making. Concepts of information systems design are also examined. Proficiency is demonstrated by completion of a major project.

MKTG-175 Credits: 1
Marketing Internship
This course is a cooperative training program that allows students to observe and apply in a practical manner the principles and techniques of marketing studied in Marketing Management. A minimum of 144 hours is worked at an approved training station, or equivalent experience is attained through an instructor-approved field project. Prerequisite(s): MKTG-151.

MKTG-176 Credits: 1
Marketing Internship 2
This course continues the hands-on training program begun in Marketing Internship 1. Prerequisite(s): MKTG-175.

MKTG-177 Credits: 1
Retail Internship 1
This course combines on-the-job experience with a classroom component. The classroom portion provides the basic information needed to help the student intern perform with expectations of employers. The on-the-job component in a fashion-related or retail environment utilizes the principles learned in students’ previous courses of study. Prerequisite(s): MKTG-151.

MKTG-185 Credits: 3
Negotiation Skills for Business
This course is designed to provide students with the content and skills associated with successful negotiation. These skills are important in dealing with suppliers, salespeople, purchasers, government officials, and others. The course uses case studies, role-playing, software, database searching and lecture/discussion to provide a hands-on approach.

MEDICAL/CLINICAL LABORATORY TECHNICIAN

MLABT-161 Credits: 1
Computer Applications for the Medical Laboratory
In this course, students learn basic computer skills used in the clinical laboratory. Students use the internet and database software to become familiar with clinical laboratory computer functions. Prerequisite(s): Must be admitted to the Phlebotomy program (30-513-1); completion of or concurrent enrollment in HEALTH-107, CLABT-110 and CLABT-111.

MLABT-166 Credits: 3
Phlebotomy Clinical Experiences
This clinical course provides 120 hours of the practical application of principles and techniques of phlebotomy. Students observe and perform routine phlebotomy and processing tasks in affiliating phlebotomy facilities. Prerequisite(s): Consent is required to enroll in this course.

MLABT-190 Credits: 2
Medical Laboratory Diagnostic Services
This course introduces students to medical laboratory nonclient duties related to various diagnostic areas, client handling skills, assistance in setting up clients for diagnostic procedures, and documentation skills related to the diagnostic procedures. Basic anatomy and physiology, and relevant medical terminology and abbreviations are included.

METALLURGY

MTLGY-301 Credits: 1
Basic Heat Treatment of Metals
This course is designed to provide information related to steel types, alloying elements, and microstructure as they relate to the heat treatment of steel. Lab work includes heat treating (hardening, tempering, normalizing and annealing), hardness testing and tensile testing.

MTLGY-321 Credits: 1
Metallurgy 1
This course gives an introduction to metals commonly used to manufacture products. It describes the properties and applications of steels, cast irons, aluminum alloys and other common non-ferrous metals. It covers the AISI/SAE specifications for steel and common nonferrous metals, including aluminum and copper alloys. Lab work includes hardness testing, tensile testing and common heat treatments used with steel.

MTLGY-350 Credits: 1
Materials of Construction: Ferrous
This course deals with the extraction of iron from iron ore and the processing of iron into cast irons, steels, stainless steels and alloy steels that are used in all industry and manufacturing processes. It also describes nonferrous metals and alloys as well as plastics.

MUSIC

MUSIC-101 Credits: 2
Music Business
This course is designed to develop insight into portions of the music-business world, including: the recording industry, record labels, copyrights, performing, managers, producers, contracts, song writing, music publishing, print publishing, promotion, business planning, career planning, website construction and much more.

MUSIC-103 Credits: 1
Major Instrument 1
Emphasis is placed on individualized instruction on one’s major instrument with course emphasis to include reading, developing musicality and improvisation. Choice of sections: Guitar, bass, reeds, brass or percussion.

MUSIC-104 Credits: 1
Major Instrument 2
Individualized instruction at the intermediate level is given on the major instrument, with emphasis on reading, developing musicality and improvisation. Choice of sections: Guitar, bass, reeds, brass or percussion. Prerequisite(s): MUSIC-103.

MUSIC-105 Credits: 1
Major Instrument 3
This is an early advanced-level course designed to develop the student’s specific performance skills in all styles of music, with emphasis to include reading, musicality and improvisation. Choice of sections: Guitar, bass, reeds, brass, percussion or voice. Prerequisite(s): MUSIC-104, MUSIC-178, or MUSIC-193.

MUSIC-106 Credits: 1
Major Instrument 4
This is an advanced-level course designed to develop the student’s specific performance skills in all styles of music, with emphasis to include reading, musicality and improvisation. Choice of sections: Guitar, bass, reeds, brass, percussion or voice. Prerequisite(s): MUSIC-105.

MUSIC-107 Credits: 1
Song Writing
This class is designed for song writers of all levels, from beginners to advanced, to sharpen their skills. Students will learn to develop skills in the areas of melody, lyrics, harmony and song structure. Students will analyze songs of different styles as well as work on their original works. Every style of song writing is valid and welcomed in this course. Prerequisite(s): MUSIC-150.

MUSIC-108 Credits: 3
Film Scoring 1
This is a lecture/survey class covering four areas: film scoring history, the production or process of film scoring, creating the score and the business details of film scoring.

MUSIC-109 Credits: 3
Film Scoring 2
This is a lecture/lab class exploring the practicalities of composing music for the visual media including spotting, thematic branding, tempo mapping, developing the grand concept, functional scoring and business opportunities. Prerequisite(s): MUSIC-108.

MUSIC-111 Credits: 2
Music Business 2
This is a hands-on lab course that will spotlight many aspects of the music business. As a continuation of MUSIC-101 Music Business, this course will focus on music marketing, musician image development, promoting acts, music retailing, getting your

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own business set up for sales, negotiation skills, goal setting, leadership skills, setting up a performance rights publisher and writer account, advanced music licensing concepts, intellectual property, music business law, international music business, digital music technologies, the iTunes business model, the impact of technologies on the music business, the future of the music business, and much more. Students will assist their peers in the ensemble classes by promoting and producing the MATC Concert Series, giving the learner experience in production and promotion. The course will feature guest speakers from the music industry and a field trip to a music publishing company.

**Prerequisite(s):** MUSIC-101.

**MUSIC-113 Credits: 1**

**Introduction to Music Software**

Introduction to music technology is a lab introducing the basics of software programs Finale, Logic and Pro Tools in music composition, music production and audio recording; focusing on the recording and manipulating of midi and audio.

**MUSIC-118 Credits: 3**

**Music Analysis**

This class will focus on the basic elements of music: melody, harmony, texture, timbre, expression and form. Through analysis of all these elements, students will come to better understand and recognize the distinct features of music from various periods and styles of Western culture music from the 1500s to the present. The class will emphasize the understanding, recognition and appreciation of various musical styles to better comprehend the music of the past and its influence on present and future music, broadening one’s basis of acceptance as to what constitutes music, maintaining and developing an openness to new and different approaches and styles of music or ideas that are divergent from one’s own, and becoming aware of environmental influences on music such as social, political and cultural forces. The class uses lecture, analysis, guided listening and presentation. Prerequisite(s): MUSIC-150.

**MUSIC-119 Credits: 1**

**Music Ensemble 4**

Continuation of Combo 1 with the continued study and performance of improvisation, reading music notation, ear training and reading chord charts and lead sheets. Performance is on the intermediate to advanced level. Prerequisite(s): MUSIC-141.

**MUSIC-120 Credits: 1**

**Choir 2**

Students develop vocal skills, learn basic note reading techniques, and learn how to sing in harmony with others in a choral group that sings a variety of vocal styles such as gospel, jazz, classical and pop. Choir 2 is open to all MATC students and especially to anyone who would enjoy choral singing.

**MUSIC-125 Credits: 1**

**Music Studio Teaching Methods**

This class will include the study of various teaching methods and learning styles, with their application to studio one-on-one instruction for various instruments and voice, materials and techniques, performance practices, and business aspects of studio management. The class includes lecture, demonstration/presentation and lesson observation. Prerequisite(s): MUSIC-152.

**MUSIC-126 Credits: 1**

**Percussion Ensemble**

This course is specifically geared to performing percussion music. It is designed to explore the music and techniques of playing the many styles and instruments of world and classical percussion. Areas of study will include, but not be limited to: Brazilian, African and Afro-Cuban music, as well as classic American compositions. The course will focus on reading, interpretation, improvisation, music theory, and technique. Learners will perform on many percussion instruments and become skilled at functioning in an ensemble. The percussion ensemble will be prepared to perform at MATC Concert Series alongside music ensembles.

**MUSIC-127 Credits: 1**

**Drum Lab**

Drum Lab is a course designed to meet the needs of the beginning percussionist, as well as the student interested in an introduction to stick and hand drumming. Course focus is on music reading, rhythmic development, technique and improvisation. Students will obtain the basic knowledge of the instrument to prepare for Major Instrument Percussion and Percussion Ensemble class.

**MUSIC-141 Credits: 1**

**Music Ensemble 3**

Students will perform in a musical group. Participants will continue to advance their musical performance skills. Emphasis is placed on reading music notation, reading chord charts and lead sheets, improvisation and ear training. Prerequisite(s): MUSIC-163.

**MUSIC-148 Credits: 2**

**Music Fundamentals 1**

Introduction to the building blocks of music: reading, notation, keys, scales and chords.

**MUSIC-150 Credits: 4**

**Music Theory**

This introductory course presents fundamental music theory. The following topics are presented: the study of intervals; major and minor tonality; scale construction; diatonic triads; harmonic function; figured bass, four-voice chorale; voice leading and chord voicing; figured brass, chord inversion; tonal and structural organization in music; seventh chords and simple/compound meter. This class uses lecture, workbook exercises, sight singing and dictation.

**MUSIC-151 Credits: 4**

**Music Harmony**

This course involves applying the knowledge acquired in MUSIC-150 Music Theory. Students study the harmonization of a melody; diatonic seventh chords and their inversions; modulation; non-harmonic tones; secondary harmonic relationships; diminished seventh chords; construction of ninth, 11th and 13th structures; harmonic substitutions; and quartal harmony. Prerequisite(s): MUSIC-150.

**MUSIC-152 Credits: 3**

**Composition**

Students learn to write original compositions for commercial and artistic purposes (film, radio, concert, etc.). Compositional styles covered include classical, jazz, pop, Latin and serial composition, radio and television. Prerequisite(s): MUSIC-151.

**MUSIC-153 Credits: 3**

**Music Technology**

Students compose, orchestrate and record in various musical styles using computers, digital keyboards, sequencing and music notation software. Prerequisite(s): MUSIC-152.

**MUSIC-154 Credits: 3**

**Techniques of Sound Recording**

Studio recording is the focus of this course. The increasing use of electronic amplifying/recording equipment in the field of music necessitates that the musician have basic knowledge of the hows and whys of sound and recording equipment. Simple repairs and maintenance ability to discern fidelity and distortion, and fundamentals of sound and electricity, will be presented.

**MUSIC-155 Credits: 3**

**Advanced Technology of Sound Recording**

This course builds on the knowledge of the Techniques of Sound Recording in the first semester. Emphasis is on recording stereo and surround sound, and mixing and mastering. Prerequisite(s): MUSIC-154.

**MUSIC-157 Credits: 3**

**Recording Live Concerts**

This is a lecture/lab for the audio engineer that teaches the elements of professionalism, the technical aspects of signal flow, microphone selection and placement, and mixing, all specifically pertaining to the live music environment.

**MUSIC-162 Credits: 1**

**Music Ensemble 1**

Students have the opportunity to learn the various styles of music and how to reproduce them. Students gain valuable practical experience in reading music notation, reading chord charts and lead sheets, improvisation, and learning music in the confines of a musical ensemble, to become better equipped to perform professionally.
MUSIC DEGREE/DIPLOMA COURSE DESCRIPTIONS

MUSIC-163 Credits: 1
Music Ensemble 2
Continuation of Ensemble 1 with continued study and performance of reading music notation, reading chord charts, improvisation, and learning music in the confines of a musical ensemble. Performance is on the intermediate to advanced level. Prerequisite(s): MUSIC-162.

MUSIC-167 Credits: 1
Improvisation 1
Objective of this course is to begin to develop abilities in jazz improvisation through the study of scale/chord relationships and jazz solo vocabulary. The course involves both the study of theoretical concepts, as well as practice and performance on one's chosen instrument. Prerequisite(s): MUSIC-151.

MUSIC-168 Credits: 1
Improvisation 2
Continuation of MUSIC-167, the intent of this course is to develop further abilities in jazz improvisation through the study of scale/chord relationships and jazz solo vocabulary. The course involves both the study of theoretical concepts as well as practice and performance on one's chosen instrument. Prerequisite(s): MUSIC-167.

MUSIC-174 Credits: 2
Ear Training 1
This class will emphasize the ability to accurately recognize melodic, harmonic and rhythmic musical sounds. This will be done through sight singing, dictation and transcription, and incorporation of theory fundamentals. Prerequisite(s): MUSIC-167.

MUSIC-175 Credits: 3
Music Reading
This course is designed to provide the student with the ability to read standard music notation and play music on their primary instrument. Instruction begins with the fundamental tools and terminology of music notation. It moves through simple melodies in simple rhythms and meters and progresses to longer and more difficult melodies in more difficult rhythms and compound meters.

MUSIC-177 Credits: 1
Piano Lab 1
Beginning piano class designed to develop skills in music reading and proper keyboard technique, as well as the functional use of scales, chords, transposition and other elements of music theory. Taught in a group class setting on Roland digital pianos. Elementary to late elementary level.

MUSIC-178 Credits: 1
Piano Lab 2
Continuation of MUSIC-177, this class is designed to improve skills in music reading and proper keyboard technique as well as the functional use of scales, chords, transposition and other elements of music theory. Prerequisite(s): MUSIC-177.

MUSIC-180 Credits: 1
Advanced Piano
This course offers individualized instruction for the advanced piano student. Prerequisite(s): MUSIC-188.

MUSIC-184 Credits: 2
Ear Training 2
Continuation of MUSIC-174 Ear Training. This class will emphasize the ability to accurately recognize melodic, harmonic and rhythmic musical sounds. This will be done through sight singing, dictation and transcription, and incorporation of theory fundamentals. Prerequisite(s): MUSIC-174.

MUSIC-185 Credits: 1
Bass Lab 1
Bass Lab is designed to meet the needs of the beginning bass guitar player. The course will acquaint the student with tuning, parts of the bass guitar, and proper playing techniques. Course will also cover the basic skills of reading music in the bass clef. The students perform simple music examples in class on their instruments.

MUSIC-187 Credits: 1
Guitar Lab 1
Group lessons provide instruction for beginners and for guitarists who want to learn to read standard notation including basic technique, music reading, chording, fundamentals of music theory, effective practice habits, lead sheets and tablature. Students must provide their own guitar.

MUSIC-188 Credits: 1
Guitar Lab 2
Continuation of MUSIC-187. Group lesson instruction is designed to improve music reading skills, expand chord vocabulary, scales, understanding chord progressions, finger-style guitar basics and bare chords. Students provide their own guitar. Prerequisite(s): MUSIC-187.

MUSIC-189 Credits: 1
Voice Lab 1
Students will learn basic vocal techniques and improve their singing ability through solo singing.

MUSIC-190 Credits: 1
Choir 1
Students develop vocal skills, learn basic note reading techniques, and learn how to sing in harmony with others in a choral group that sings a variety of vocal styles such as gospel, jazz, classical and pop. Choir 1 is open to all MATC students and especially to anyone who would enjoy choral singing.

MUSIC-191 Credits: 3
Performance Techniques 1
Students will develop their performance abilities on their particular instrument(s). Solos or ensembles will be formed from the class. Students will learn through lecture, coaching, interactive discussion, preparing selections for performance, and performing music and non-music presentations. The class will emphasize learning to prepare adequately for successful performances, working successfully with other musicians, developing ensembles, musical arranging, improving personal technical and musical abilities, proper performance etiquette, professional work ethic and attitude, and refining playing in various styles. Prerequisite(s): MUSIC-163.

MUSIC-192 Credits: 3
Performance Techniques 2
Continuation of MUSIC-191 Performance Techniques 1. Prerequisite(s): MUSIC-191.

MUSIC-193 Credits: 1
Voice Lab 2
Students continue to develop good vocal techniques through solo singing, and also will develop their skills in sight singing. Prerequisite(s): MUSIC-189.

MUSIC-194 Credits: 1
Honors Ensemble
An advanced performance group created by audition or faculty appointment. This group serves as the flagship performance group representing the department and school in various venues and as a recording group producing CDs in collaboration with music business and recording students. With guidance from the instructor, members of the class are responsible for choosing repertoire, arranging materials, rehearsing, memorizing and performing a minimum of three department concerts per semester. Prerequisite(s): Instructors consent is required for this course.

MUSIC-205 Credits: 3
Music Appreciation
This course introduces music elements such as rhythm, melody, harmony and texture in vocal and instrumental forms, to analyze and appreciate music from the 1400s to the present. Includes historical musical periods and contemporary, popular American genres. Composers studied include Pope Gregory, Bach, Mozart, Beethoven, Brahms, Debussy, Copland, Gershwin and Joplin. This course is lecture and guided listening with analysis and discussion. Students will be required to attend concerts, listen to music and write reports.

MUSIC-206 Credits: 3
History of Rock and Pop
This course provides students with a survey of popular American music of the 20th century, tracing the development, evolution and maturation of musical styles, techniques and compositions. Development of analytical listening skills is a course focus.

MUSIC-207 Credits: 3
Jazz History
This course will focus on America's indigenous music – jazz. Course will explore the development of this music over the last 150+ years to present. Course will explore musical, multicultural and historic perspectives, tracing music's evolution. Selective listening, as well as
analysis of rhythmic, melodic, harmonic and form structures will be a course focus. Open elective to all majors.

**MUSIC-210**  
Credits: 3  
World Music Sound and Structure  
An insightful introduction to major musical traditions of the world. This course will focus on musical sound and structure in the musical genre of sub-Saharan Africa, India, Japan, Latin America and Ireland.

**NATURAL SCIENCES**

**NATSCI-107**  
Credits: 2  
Pathology  
General disease processes, specific diseases and causative factors are presented. Clinical features are correlated with pathologic changes and necropsies are discussed. Emphasis is placed on diseases that create embalming problems, and situations with medical-legal implications. Prerequisite(s): One year of high school chemistry with minimum grade C, or one semester of college chemistry with minimum grade C.

**NATSCI-110**  
Credits: 5  
Basic Chemistry  
This course is designed to provide the basic chemistry concepts and skills needed in more advanced chemistry courses or related courses in other fields. This course is a Prepared Learner course and is a prerequisite for college chemistry.

**NATSCI-137**  
Credits: 4  
Comprehensive Technical Physics  
The areas of mechanics, heat, electricity, magnetism and optics are covered through lecture, demonstration and laboratory work. Empirical relationships are emphasized, incorporating mathematical prerequisites.

**NATSCI-149**  
Credits: 3  
Introduction to Geographic Information Systems  
Introduction to Geographical Information Systems (GIS) and ArcView V.9.3, mapping software. The student is introduced to spatial analysis topics in a series of hands-on computer laboratory exercises enabling the student to acquire electronic map-making skills. Students complete two instructor guided, semester-long mapping projects.

**NATSCI-167**  
Credits: 3  
Science of Technology  
This course looks at the many devices we use in our everyday life and shows how they work. In the process, students learn the basic principles of science behind those devices, as well as how they are applied in other common objects. From levers to lasers, copy machines to computers, sensors to solenoids – virtually nothing is off limits in this class. Participants gain an awareness of the vast network of technology around them by exploring the history of technology, how technology affects society, great inventors and their inventions, as well as what the future can hold. When completed, students discover that devices don’t work by magic, but are carefully designed to take advantage of the behavior of matter and the laws of science. By exploring the world with this approach, students not only learn the basic principles of physics, but develop an understanding and appreciation of the many ways these principles may be applied.

**NATSCI-169**  
Credits: 3  
Energy in Nature, Technology and Society  
This course provides an introduction to the essential roles of energy in nature and human activity. It is an interdisciplinary general education course intended for all students who desire basic understanding of the forms and applications of energy, and their influence on the development of civilization, geopolitics, economics and our environment. In addition to traditional sources of energy, special emphasis is given to renewable energy. Field trips may be arranged.

**NATSCI-172**  
Credits: 3  
Basic Nutritional Science  
This course provides an introduction to the science of nutrition. Basics concepts related to digestion and metabolism are presented. The significance of carbohydrates, lipids, proteins and vitamins to the human organism are discussed. The relationship of proper nutrition to selected pathological conditions throughout the human life cycle is presented. The concept of sustainability and environmentally conscious food-production is introduced.

**NATSCI-177**  
Credits: 4  
General Anatomy and Physiology  
This course examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare healthcare professionals who will need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. This course also provides the foundation to and is prerequisite for NATSCI-179. Prerequisite(s): Two semesters of high school chemistry or one semester of college chemistry with minimum grade C, and one semester of college English with minimum grade C, or satisfactory scores on MATC placement test.

**NATSCI-179**  
Credits: 4  
Advanced Anatomy and Physiology  
Normal human anatomy and physiology are studied with emphasis on interrelationships between form and function at the gross and microscopic levels of organization. Includes analysis of cellular metabolism, individual components of the nervous, neuro-muscular, cardiovascular and urinary systems. Examines homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Prerequisite(s): NATSCI-177 with minimum grade C.

**NATSCI-184**  
Credits: 3  
Plant Biology  
This lecture/laboratory course provides students with in-depth study of the plant kingdom. Content includes, but is not limited to, plant cell anatomy and physiology, plant genetics, plant classification, plant anatomy and physiology, plant responses, plant life cycles and ecology. Survey of viruses, prokaryotes, protista and fungi as they pertain to plants is presented.

**NATSCI-186**  
Credits: 4  
Introductory Biochemistry  
Provides students with skills and knowledge of organic and biological chemistry necessary for application within health careers. Emphasis is on recognizing structure, physical properties and chemical reactions of organic molecules, body fluids and acids. Also emphasizes biological functions and relationships to enzymes, proteins, lipids, carbohydrates and DNA. Prerequisite(s): Two semesters of high school chemistry with minimum grade C, or one semester college-level chemistry with minimum grade C, and one semester college-level English with minimum grade C, or satisfactory scores on MATC placement test.

**NATSCI-189**  
Credits: 3  
Basic Anatomy  
Examines concepts of anatomy and physiology as they relate to health careers. Students correlate anatomical and physiological terminology to all body systems.

**NATSCI-197**  
Credits: 4  
Microbiology  
Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microorganisms. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. The course also examines the role of microbes in the environment, industry and biotechnology. Prerequisite(s): NATSCI-177 or NATSCI-201 with minimum grade C.

**NATSCI-201**  
Credits: 4  
Anatomy and Physiology 1  
This general course presents unifying concepts critical to a basic understanding of the human body. Lectures, laboratory studies use models and specimen dissection to present integumentary, skeletal, muscular, nervous and endocrine systems. Prerequisite(s): Biology or chemistry, and English. Biology may be satisfied with one year of high school biology or one semester of college biology. Chemistry may be satisfied with one year of high school chemistry or one semester of college chemistry. English may be satisfied with one semester of college English or a satisfactory placement test score. All courses must have a minimum grade of C.

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NATSCI-202 Credits: 4
Anatomy and Physiology 2
The cardiovascular, respiratory, digestive, urinary and reproductive systems are studied, utilizing lecture and laboratory procedures to complete the study of the anatomy and physiology of the human body. Prerequisite(s): NATSCI-201 with minimum grade of C.

NATSCI-207 Credits: 4
General Chemistry
Provides a foundation in general inorganic chemistry in preparation for a second semester of organic and biochemistry. Topics include dimensional analysis, atomic structure, periodic table and properties of elements, compounds, solutions, acids/bases, reactions and equilibrium, oxidation/reduction, introduction to organic chemistry. Prerequisite(s): NATSCI-206 with minimum grade of C, or one semester of high school chemistry with a minimum grade of C.

NATSCI-208 Credits: 4
Survey of Biochemistry
Provides a basis in organic chemistry needed for understanding biochemistry. Topics include structure and functions of carbohydrates, lipids, proteins, enzymes and nucleic acids; protein synthesis and epigenetic controls; carbohydrate metabolism and energy production; metabolism of proteins and of lipids; relation of central metabolism to health. Students are prepared to pursue a bachelor's degree by transferring this course to a four-year institution. Prerequisite(s): NATSCI-207 with a minimum grade of C.

NATSCI-209 Credits: 5
Chemistry for the Health Sciences
Course is primarily designed for first-year students in health science technologies. Emphasis is on practical aspects of inorganic, organic and biochemistry as they relate to bodily processes and functions. Laboratory work reinforces lecture. Prerequisite(s): One year of high school chemistry with minimum grade C, or one semester of college chemistry with minimum grade C. Also, MATH-110 with minimum grade C or satisfactory score on the MATC placement test.

NATSCI-211 Credits: 5
Chemistry 1
This course is a study of the basic principles of modern chemistry correlating atomic structure, theories of chemical bonding and reactivity of matter. Laboratory work is included. Prerequisite(s): One year of high school chemistry or one semester of college chemistry with minimum grade C. Also, MATH-200 with minimum grade C or a satisfactory MATC placement test score.

NATSCI-212 Credits: 5
Chemistry 2
This course is a study of kinetics, equilibria, thermodynamic nucleonics, coordination chemistry, electrochemistry and topics in organic and biochemistry. Qualitative analysis is included in the laboratory course. Prerequisite(s): NATSCI-211 with minimum grade of C.

NATSCI-215 Credits: 5
Quantitative Chemical Analysis
This course is a study of the general principles of volumetric and gravimetric analysis, evaluation of analytical data, acidity and alkalinity, redox process, solubility equilibria, complexation titrations and optical and electrometric methods. Laboratory work is included. Prerequisite(s): NATSCI-212 with a minimum grade of C.

NATSCI-216 Credits: 5
Instrumental Analysis
Instrumental analysis examines the design, construction and use of modern chemical analytical instruments. Topics include absorption and emission spectroscopy, gas and liquid chromatography, and electrochemical methods. Prerequisite(s): NATSCI-215 with a minimum grade of C.

NATSCI-217 Credits: 3
Organic Chemistry 1
Lecture topics include nomenclature, structure, characterization, functional groups, preparations and reactions. A survey is made of stereochemistry, polymers and natural organic products. Practical applications of these topics are included in the laboratory work. Prerequisite(s): NATSCI-212 with a minimum grade of C.

NATSCI-218 Credits: 3
Organic Chemistry 2
A second semester course in Organic Chemistry that builds upon concepts learned in the first semester. Spectroscopy and the chemistry of oxygen-containing compounds are emphasized. Prerequisite(s): NATSCI-217 or CHEMT-117 with a minimum grade of C.

NATSCI-219 Credits: 2
Organic Chemistry Laboratory 1
Laboratory work focuses on the synthesis and purification of organic compounds illustrating reaction mechanisms. Prerequisite(s): NATSCI-217 or CHEMT-117 with a minimum grade of C.

NATSCI-220 Credits: 3
Introduction to Nutritional Science
This course is an introductory experience in human nutrition. It is designed to satisfy basic nutritional course requirements for college students entering allied health programs, and provide practical and interesting nutritional information for non-health majors as well. This course provides correct, scientifically based information needed to answer basic questions related to nutrition.

NATSCI-221 Credits: 4
College Physics 1
This is a first-semester physics course to study the principles of mechanics and heat. Calculus is not required. Laboratory work involves the analysis of data using computers. Prerequisite(s): MATH-202 or MATH 230.

NATSCI-222 Credits: 4
College Physics 2
This is a second-semester physics course to study the principles of electricity, magnetism, light, optics and the basics of modern physics. Lab work will include experiments related to the above topics and data analysis via computer. Calculus is not required. Prerequisite(s): NATSCI-221.

NATSCI-225 Credits: 3
Introductory Astronomy
This introductory course covers the principles, theories and understandings related to astronomy. Topics to be covered include the history of astronomy, telescopes, the earth and the solar system, the sun as a star, other stars, galaxies, and theories of the universe.

NATSCI-226 Credits: 1
Observational Astronomy
This introductory course covers the principles, theories and understandings related to astronomy. Topics to be covered include the history of astronomy, telescopes, the earth and the solar system, the sun as a star, other stars, galaxies, and theories of the universe.

NATSCI-227 Credits: 3
Instrumental Analysis
This course introduces basic scientific principles necessary to an understanding of chemistry and radioactivity. Emphasis is on both the past and present world, and also continually evolving techniques for exploring the physical universe.

NATSCI-231 Credits: 3
Physical Science Survey
This course provides an introduction to the basic concepts of physics and chemistry, and a short introduction to astronomy, earth science and meteorology to aid the student in understanding the natural world. Topics covered include forces, energy, electricity, basic chemistry, optics, laws of motion, geology, the stars and the atmosphere. Not open for credit to students who have earned credit in, or who are presently enrolled in, both college chemistry and physics.

NATSCI-232 Credits: 3
Earth Science
This course will introduce students to the fields of geology, meteorology, astronomy and oceanography. It emphasizes humans' continually evolving techniques for exploring both the past and the present world, and also the universe.

NATSCI-233 Credits: 3
Environmental Science
This course introduces basic scientific principles necessary to an understanding of

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the relationships between mankind and the environment, with special focus on the effects of mankind’s activities on the environment.

**NATSCI-234**
**Earth Sciences Laboratory**
This laboratory course introduces students to the earth sciences through first-hand activities and through exploration. Subject matter differs in different sections. The course may emphasize identifying minerals, rocks, and fossils; interpreting and compiling maps (including GIS); observing and forecasting weather conditions; collecting and analyzing environmental data; and/or other earth science topics. Students should consult the instructor or department of Physical Science instructional chairperson for the specific content. This laboratory should only be taken in conjunction with, or subsequent to, NATSCI-223.

**NATSCI-236**
**Principles of Biology**
This course provides an introduction to the organization of living organisms at the molecular, cellular, organism and ecological levels. Biological principles of inheritance, cytology and metabolism of plants, animals and other organisms will be studied. In addition, an overview of the major organ systems of the human body will be included. Prerequisite(s): ENG-151, or ENG-201 with minimum grade C, or satisfactory MATC placement test score.

**NATSCI-237**
**Introduction to Biotechnology**
This course introduces the basic principles of molecular biology used in biotechnology. Emphasis is on providing students with hands-on experience in areas such as gene expression and regulations, recombinant DNA technology, cloning of genes, isolation and purification of DNA, and agarose gel electrophoresis of DNA. Prerequisite(s): Either two semesters of high school biology or one semester of college biology with minimum grade C. Also, either ENG-151 or ENG-201 with minimum grade C, or satisfactory MATC placement test score.

**NATSCI-238**
**Molecular Biology Concepts**
Explores the world of genes and DNA. Topics will include gene regulations, genomics, recombinant DNA technology and genetic engineering. Hands-on experiments will be performed on gene expression, cloning, miniprep, southern hybridization and PCR. Prerequisite(s): NATSCI-237 with minimum grade C.

**NATSCI-239**
**Advanced Biotechnology II – Genetics, Genomics and Proteomics**
This course focuses on basic genetics, genomics, and proteomics. Topics covered include structure and function of chromosomes and genes, the patterns of inheritance, the causes and consequences of mutation, genetic variation, organization of genomes, gene expression at the RNA and protein levels, microarrays, analyses of genomic and proteomic databases, protein separation, and spectrophotometry. Prerequisite(s): NATSCI-237 with minimum grade C.

**NATSCI-240**
**Survey of Physical Geography**
This is the study of Earth’s physical environment. This course will introduce the student to physical geography by using geographic information systems (GIS). The course will survey the basic components of Physical geography including cartography, the Earth’s atmosphere, biosphere and lithosphere. The focus of this course will be practical examples and applications in physical geography.

**NATSCI-241**
**Pathophysiology: Disease Process**
Pathophysiology provides an understanding of the relationship between the mechanisms of disease and normal physiology. Topics include alterations in cellular and genetic mechanisms, metabolic abnormalities, fluid and electrolyte imbalance, infection, immunology and cardiovascular, gastrointestinal, respiratory and neuromuscular dysfunctions. Prerequisite(s): Two semesters of college level anatomy and physiology with minimum grade C.

**NATSCI-242**
**Concepts of Science in Health**
The focus of this course is to provide a basic understanding of the most recent, scientifically based, personal health information such as aging, stroke, cancer, chemical dependency, nutrition, environmental pollution and weight control. Participants analyze their own health-related behaviors and attitudes, and are provided with the concepts needed to improve health and well-being.

**NATSCI-243**
**Weather Fundamentals**
The course assists students whose work and interests require a general knowledge of atmospheric science. Applications appear in agribusiness, insurance underwriting, architectural design, environmental control, health and safety occupations, water resource industries, fabrication of materials (textiles, paint, plastics), physical geography and oceanography.

**NATSCI-244**
**Weather Fundamentals Laboratory**
This laboratory course complements NATSCI-243 Weather Fundamentals by providing additional investigations involving real-time data and satellite images, plus a comprehensive range of critical thinking exercises. This laboratory should be taken in conjunction with NATSCI-243.

**NATSCI-245**
**General Geology**
This introductory geology course emphasizes the earth’s dynamic processes as well as its composition, structure and surface features. The laboratory introduces the identification of rocks and minerals, and teaches mapping skills. Field trips are included.

**NATSCI-246**
**Climate Change Fundamentals**
This course critically examines our understanding of climate and its causes, the evidence of past and present climate change, models of future climate change, as well as the probable impacts of climate change on society, and the implications for future energy resources and the economy.

**NATSCI-248**
**Current Topics in Natural Science**
This course critically examines major topics of current emphasis and their future importance in natural science, for example: climate change ("global warming"), natural hazards (earthquakes, volcanoes, tropical storms, floods) and natural resources (water, energy). The subject matter differs in different sections. Please consult the instructor or Department of Physical Science instructional chairperson for specific content.

**NATSCI-251**
**Introduction to Geographic Information Systems 1: Status**
This course provides an introduction to geographical information systems (GIS) and ArcView v9.2 mapping software. It introduces the students to spatial analysis topics in a series of 15 hands-on computer laboratory exercises enabling students to acquire electronic map-making skills. Students complete three semester-long, instructor-guided mapping projects. Prerequisite(s): NATSCI-142 or NATSCI-149.

**NATSCI-252**
**Geographical Information Systems 2: Spatial Analysis**
This course introduces students to ArcView Spatial Analyst v9.2 software module including the basics of ArcView, ArcMap, ArcCatalog and ArcToolbox. Multiple map projects using pre-existing and student acquired data sets include applications in marketing, natural sciences, government agencies, and urban planning agencies. The focus of this course is to learn spatial analysis techniques by understanding, creating and applying discrete and discontinuous data in raster format. Students should be already adept at using ArcMap software. Prerequisite(s): NATSCI-251.
### NATSCI-253
**Credits: 3**
**GIS 3: 3D Analysis, Geostatistics and Geodatabases**
This course introduces students to ArcView 3-D Analyst, Geostatistics, and Geodatabases v.9.2 software modules including the basics of ArcView, ArcMap, ArcCatalog and ArcToolbox. Multiple map projects using pre-existing and student acquired data sets include applications in marketing, natural sciences, government agencies and urban planning agencies. The focus of this course is to learn 3-D analysis techniques, geostatistical methodologies and geodatabase concepts by understanding, creating and applying discrete and discontinuous data in vector and raster format. Students should be already adept at using ArcMap software. Prerequisite(s): NATSCI-251.

### NATSCI-254
**Credits: 3**
**GIS 4: Global Positioning Systems for Geographical Information Systems**
Introduces advanced learners to Global Positioning Systems software and high-resolution Trimble R8 GPS instrumentation. Using ESRI's ArcGIS v.9.2 software and Trimble's Pathfinder Office software, students are involved in collecting, synthesizing and analyzing high resolution GPS data collected in the field. Students learn and gain experience in: (1) preparation methodology and techniques necessary before taking to the field, (2) data instrumentation using Trimble’s R8 subcentimeter GPS receiver in the field, and (3) post-processing techniques enabling them to produce a finished product: a digital map. In addition, students will practice data recording and measure bearing and distances using ArcMap software. Prerequisite(s): NATSCI-251.

### NATSCI-255
**Credits: 1**
**GIS: Business Analyst**
Business Analyst is a Geographic Information System software program to be used in conjunction with ESRI ArcGIS 9.2. Using real-time data from web sources, the student will learn to create, edit, manage, analyze and document business territories for market analysis. The user will learn to perform address geocoding and correlate mapping locations to high-resolution aerial images. Students will learn project data management techniques and how to incorporate business data and/or projects to existing or newly created maps. Learners will create customized reports comparing the number of customers and sales for trade areas, average drive times, routing analysis, and market penetration buffer rings. They will also learn how to apportion data using hybrid, block appointment and the cascading centroid to analyze the boundaries of trade areas. Students will then submit a final project that will encompass all these concepts. Prerequisite(s): NATSCI-251, NATSCI-142 or NATSCI-149.

### NATSCI-260
**Credits: 3**
**Plagues, People and Power**
This course covers the history of infectious diseases and their role in human development using fiction and non-fiction movies and books as resources. Some of the topics to be covered include: smallpox, the plague, leprosy, tuberculosis, AIDS, influenza, syphilis and biological weapons.

### NATSCI-261
**Credits: 3**
**Introduction to Pharmacology**
Basic principles of drug action are presented in relation to body physiology. Emphasis is placed on drugs affecting the central nervous system. Laboratory exercises are included to support principles of biology, chemistry, anatomy and human physiology.

### NATSCI-262
**Credits: 3**
**Energy in Nature, Technology and Society**
This course provides an introduction to the essential roles of energy in nature and human activity. It is an interdisciplinary general course intended for all students who desire basic understanding of the forms and applications of energy and their influences on the development of civilization, geopolitics, economics and our environment. In addition to traditional sources of energy, special emphasis is given to renewable energy. Field trips may be arranged.

### NATSCI-263
**Credits: 4**
**Environmental Field Studies**
The selected geographic areas to study vary from year to year. Various instructional methods are used to match each unique area of study. Areas of past study include Wisconsin geology, Appalachian ecology, Black Hills geology, Grand Canyon ecology and Ozarks ecology.

### NATSCI-265
**Credits: 3**
**STEM Applications in Manufacturing**
This course covers the STEM applications in technical programs offered at MATC, especially in manufacturing. It consists of four modules: science (physical and life sciences), technology, mathematics, and career awareness.

### NATSCI-274
**Credits: 4**
**Calculus-Based Physics 1**
This is the first part of a two-part sequence of calculus-based physics for prospective engineering students. Topics covered include theoretical and experimental treatment of motion, material properties, fluids and heat. Prerequisite(s): MATH-232 with a minimum grade of C.

### NATSCI-275
**Credits: 4**
**Calculus-Based Physics 2**
This is the second part of a two-part sequence of calculus-based physics. Topics include electricity, magnetism, optics and some modern physics. Prerequisite(s): NATSCI-274 with a minimum grade of C.

### NATSCI-281
**Credits: 4**
**Natural Science Field Studies 1**
Glaciers, geysers and the Grand Tetons – this course is a 15-day field study in Glacier, Yellowstone and Grant Teton national parks. Participants will observe and investigate geologic, biologic and ecological processes at work in these parks and the surrounding national forests from a holistic science perspective. Rocks, minerals, fossils and plants are collected (outside the parks) while learning identification and classification techniques. Recognize ecological systems and landscapes. No science background or other prerequisite required.

### NATSCI-282
**Credits: 4**
**Natural Science Field Studies 2**
Canyons, cataracts and the Cadillac Desert – this course is a 15-day field study in the Four Corners area of the American southwest. Observe and investigate geologic, biologic and ecological processes at work in Arches, Bryce Canyon, Zion Canyon and the Grand Canyon national parks, and surrounding public lands, from a holistic science perspective. Collect rocks, minerals, fossils and plants (outside the parks) while learning identification and classification techniques. Recognize ecological systems and landscapes. No science background or other prerequisite required.

### NATSCI-283
**Credits: 4**
**Natural Science Field Studies 3**
Redwoods, rivers and rain forests – this course is a 15-day field study in forests, mountains, rivers and beaches of the Pacific Northwest. Observe and investigate geologic, biologic and ecological processes at work in the national parks and surrounding national forests from a holistic science perspective. Collect rocks, minerals, fossils and plants (outside the park) while learning identification and classification techniques. Recognize ecological systems and landscapes. No science background or other prerequisite required.

### NATSCI-290
**Credits: 1**
**Biotechnology Seminar**
This course will focus on the skills needed to find internships and jobs in the biotechnology industry. It will include speakers from area labs, hiring experts and addresses topics such as the cover letter, résumé writing and interviewing skills. Prerequisite(s): NATSCI-237.

### NATSCI-291
**Credits: 1**
**Internship in Biochemical Science**
This course is an eight-week internship for MATC students. It will allow students to explore cutting-edge laboratory research in the biochemical areas. Students will work on a specific lab project during that time in academic and industry labs. Upon completion, students will be presenting their work via PowerPoint and poster presentations in a symposium. Prerequisite(s): Consent of instructor is required.
NATSCI – NRSAD DEGREE/DIPLOMA COURSE DESCRIPTIONS

NATSCI-292 Lab Techniques in Biochemistry Research
Credits: 1
Two-week workshop for high school students will cover basic areas in biochemical, biotechnological and chemical laboratory skills. Students will learn about scientific method experimentation, recording and analyzing data. Basic math skills connected with lab techniques will also be introduced.

NATSCI-293 Stem Applications in Biochemistry Science
Credits: 3
This course introduces high school teachers and counselors to advanced techniques and applications in biochemical sciences. The group will also be introduced to the existing and emerging career opportunities in biotechnology and chemical technology. The various STEM programs being offered and the transfer programs to four-year colleges available at MATC will be discussed. Touring MATC's advanced lab facilities will also be part of the curriculum.

NATSCI-331 Physical Science
Credits: 2
This course is intended for non-science students in graphic arts as a general education course in science. The primary goal is to help students understand the basic concepts of physics, chemistry, earth science and astronomy. The primary approach is conceptual rather than mathematical. Topics include Newton's law of motion, electricity, sound, magnetism, light, elements, compounds, acids, world climate, earthquakes, water pollution, stars, planets and comets. Some take-home labs accompany teacher demonstrations to assist in student learning.

NURSING

NRSAD-101 Nursing Fundamentals
Credits: 2
This course focuses on basic nursing concepts to provide evidenced-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-102 Nursing Skills
Credits: 3
This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition, the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-103 Nursing Pharmacology
Credits: 2
This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-104 Nursing: Introduction to Nursing Practice
Credits: 2
This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration. Prerequisite(s): Must be admitted to the Nursing (10-543-1) program.

NRSAD-105 Nursing Health Alterations
Credits: 3
This course elaborates upon the basic concepts of health and illness as presented in NRSAD-101 Nursing Fundamentals. It applies theories of nursing in the care of patients through the lifespan, utilizing problem-solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It also introduces concepts of leadership and management. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-106 Nursing Health Promotion
Credits: 3
This course focuses on topics related to health promotion for individuals and families throughout the lifespan. We will cover nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child. Recognizing the spectrum of healthy families, we will discern patterns associated with adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-107 Nursing: Clinical Care Across Lifespan
Credits: 2
This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-108 Nursing: Introduction to Clinical Management
Credits: 2
This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management and team building. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-109 Nursing Complex Health Alterations 1
Credits: 3
Prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine and hematologic systems, as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-110 Nursing Mental Health Community Concepts
Credits: 2
This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/ maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic and economically diverse individuals and groups. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-111 Nursing Intermediate Clinical Practice
Credits: 3
This intermediate level clinical course develops the RN role when working with clients with complex healthcare needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan, and managing priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds. Prerequisite(s): Must be admitted to the Nursing (10-543-1) program.

NRSAD-112 Nursing Advanced Skills
Credits: 1
This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced intravenous skills, blood product administration, chest tube systems, basic electrocardiogram interpretation, and nasogastric/feeding tube insertion. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

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NRSAD – NRSPN

DEGREE/DIPLOMA COURSE DESCRIPTIONS

NRSAD-113 Credits: 3
Nursing Complex Health Alterations 2
Prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neurosensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary and reproductive systems, and shock, burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns. Prerequisite(s): Must be admitted to the Nursing program (10-543-1)."n
NRSAD-114 Credits: 2
Nursing Management Concepts
This course covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse.

NRSAD-115 Credits: 3
Nursing Advanced Clinical Practice
This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills, using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized. Prerequisite(s): Must be admitted to the Nursing program (10-543-1).

NRSAD-116 Credits: 2
Nursing Clinical Transition
This clinical experience integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegation and working collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered. Prerequisite(s): Must be admitted to the Nursing (10-543-1) program.

NRSAD-182 Credits: 1
Graduate Seminar: NCLEX Review
This course assists graduate nurses to prepare for the NCLEX-RN licensing exam. A comprehensive review of information from all content areas tested on the exam assists students to effectively use critical thinking skills and gain confidence for the exam.

NRSAD-191 Credits: 2
Nursing: Clinical Skill Development
Focuses on development or enhancement of clinical skills and physical assessment across the lifespan. The course includes review of mathematical calculations and conversions related to clinical skills, skills competencies and physical assessment. In addition, the nursing process, role transition and concept mapping will be presented. Prerequisite(s): Must be admitted to Practical Nursing LPN-RN Educational Progression (10-543-10).

NURSING ASSISTANT

NRSNA-300 Credits: 3
Nursing Assistant
This course prepares the student for employment as an entry-level caregiver in healthcare facilities such as hospitals, clinics, nursing homes and home health services. Graduates of the course are eligible to take the National Nurse Aide Assessment Program Examination and gain entry into the Wisconsin Nurse Aide Registry. This program meets all state and federal training requirements and is approved by the Wisconsin State Department of Health and Family Services. Prerequisite(s): Admission to the Nursing Assistant program (30-543-1).

NRSNA-302 Credits: 3
Basic Nursing Assistant
Basic Nursing Assistant is a three-credit diploma program designed to prepare you for employment in hospitals and nursing homes or home health services. Instruction is provided in basic, patient care skills.

PRACTICAL NURSING

NRSPN-301 Credits: 2
Nursing Fundamentals
This course focuses on basic nursing concepts to provide evidence-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients.

NRSPN-302 Credits: 3
Nursing Skills
This course focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. The course also covers techniques related to obtaining a health history and basic physical assessment skills using a body systems approach. Prerequisite(s): Must be admitted to Practical Nursing program (31-543-1).

NRSPN-303 Credits: 2
Nursing Pharmacology
This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.

NRSPN-304 Credits: 2
Nursing: Introduction to Clinical Practice
This introductory clinical course will emphasize basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis will be placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation and medication administration. Prerequisite(s): Must be admitted to Practical Nursing (31-543-1).

NRSPN-305 Credits: 3
Nursing Health Alterations
This course elaborates upon the basic concepts of health and illness as presented in NRSPN-301 Nursing Fundamentals. Students will explore theories of nursing in the care of patients through the lifespan, utilizing problem-solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management. Prerequisite(s): Must be admitted to Practical Nursing (31-543-1).

NRSPN-306 Credits: 3
Nursing Health Promotion
This course focuses on topics related to health promotion for individuals and families throughout the lifespan. The class will cover the nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn and the child. Recognizing the spectrum of healthy families, students will discern patterns associated with adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices will be highlighted. The study of the family will cover dynamics, functions, discipline styles, and stages of development. Prerequisite(s): Must be admitted to the Practical Nursing program (31-543-1).

NRSPN-307 Credits: 2
Nursing: Clinical Care Across the Lifespan
This clinical experience applies nursing concepts and therapeutic interventions to patients across the lifespan. The course also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized. Prerequisite(s): Must be admitted to the Practical Nursing program (31-543-1).

NRSPN-308 Credits: 2
Nursing: Introduction to Clinical Management
This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of patients across the lifespan. It also provides an introduction to leadership, management and team building. Prerequisite(s): Must be admitted to the Practical Nursing program (31-543-1).

NRSPN-309 Credits: 2
Nursing Foundations
This course is designed to provide a basic framework for understanding the nursing practice. General aspects of body structure and function are presented using a body
NRSPN – OFTECH  DEGREE/DIPLOMA COURSE DESCRIPTIONS

NRSPN-310  CREDITS: 2
Human Growth and Development
This course is designed to introduce students to human growth and development across the lifespan. Theories of growth and development, including appropriate terms and definitions, are presented. These theories are explored beginning with basic genetics, moving through the prenatal stages, neonatal period, infancy, early childhood, toddler and preschool stages, the school-age child, adolescence and late adulthood.

NRSPN-383  CREDITS: 1
NCLLEX Review for Practical Nursing
This course assists graduate practical nurses to prepare for the NCLLEX-PN licensing exam. A comprehensive review of information from all content areas tested on the NCLLEX exam assists learners to effectively use critical thinking skills and gain confidence for the exam.

NURSAD-180  CREDITS: 1
Nursing: Basic Skills Review
This course will assist students to polish their nursing skills prior to beginning the first-semester lab and clinical courses. The course will focus on personal care and activities of daily living for clients in a hospital or nursing home, and includes basic assessments such as vital signs.

NURSAD-181  CREDITS: 2
Orientation to Nursing
This course explores nursing as a career as it examines the knowledge, skills and abilities required to be successful. It also reviews educational pathways and job opportunities for those wishing to become nurses.

NURSAD-190  CREDITS: 1
LPN Program Challenge Exam Review
This course assists licensed practical nurses to prepare for the LPN-RN progression challenge exam. A comprehensive review of information from all content areas tested on the exam assists students to effectively use critical thinking skills and gain confidence for the exam.

NURSAD-352  CREDITS: 5
Entry Into Practice
This course is designed to help the student make the transition into the role of the graduate nurse/employee. Assigned workload increases to more accurately reflect the demands of the actual workplace. Basic supervisory issues and employee management techniques, such as delegation, are introduced. Issues related to personal development, résumé writing and job-seeking techniques are also presented.

OFFICE/SYSTEMS TECHNOLOGY

OFFTECH-101  CREDITS: 3
Windows 7 and Word 2010 Keyboarding Shortcuts
The students enrolled in this course, using a hands-on approach, will be instructed to manage files using the Microsoft Windows XP operating system, and will also learn to use the Microsoft Word 2007 keyboard shortcuts to improve their techniques using the keyboard.

OFFTECH-102  CREDITS: 3
Office Technologies
This course offers skill development in Windows 2000, web page development, internet and email, wireless devices (PDA/Palm Pilot), scanner, CD-burner, digital camera, MP3, poma, NetMeeting and computer concepts. Prerequisite(s): OFTECH-104 or OFTECH-101.

OFFTECH-103  CREDITS: 1
Keyboard and Keypad
Using a computer, students learn keyboarding using the touch method. Emphasis is placed on correct fingering skills, accuracy and speed. Passing a challenge exam at 35 wpm/three errors/two minutes may be completed in lieu of taking this course. Contact MATC’s School of Business for information about the challenge exam.

OFFTECH-112  CREDITS: 3
Computerized Medical Billing
This course introduces students to principles of computerized medical billing using medical office software. Students must possess medical terminology and accounting competencies. Prerequisite(s): ACCTG-102, completion of or currently enrolled in OFTECH-125 and RBUS-140.

OFFTECH-119  CREDITS: 3
Information Management
The basic principles and procedures of creation, storage, retrieval, retention and disposal of records are studied. The use and importance of electronic filing and micro records are included. Rules for alphabetic, numeric, geographic and subject filing are applied.

OFFTECH-122  CREDITS: 3
Business English Essentials
This course is designed to improve oral and written communication skills. Study of English fundamentals includes parts of speech, agreement, sentence types, plurals and possessives, as well as rules for punctuation, capitalization, number usage, spelling and vocabulary.

OFFTECH-123  CREDITS: 3
Machine Transcription: Proofreading and Editing/Administration
This course is designed to help the student improve upon proofreading and editing skills using hard copy and computerized materials. The course will also introduce the student to basic transcription skills whereas the student will be required to apply proper proofreading and editing techniques. Prerequisite(s): OFFTECH-122 with a minimum grade of C, and OFFTECH-133.

OFFTECH-124  CREDITS: 3
Medical Office Terminology 1
This course presents the principles of medical word construction; emphasizes correct medical word spelling, pronunciation and definition, and introduces terminology specific to various body systems.

OFFTECH-125  CREDITS: 3
Medical Office Terminology 2
This course reinforces correct medical word spelling, pronunciation and definition as studied in OFFTECH-124. Additional terminology specific to various body systems is introduced. Prerequisite(s): OFFTECH-124 with a minimum grade of C.

OFFTECH-128  CREDITS: 1
MS Word – Part 1
Using MS Word software, students format, type and print documents; edit a document using simple editing features; manipulate multiple-page documents; and create and edit simple tables.

OFFTECH-129  CREDITS: 1
MS Word – Part 2
Students create Word templates; merge documents; create reports with table of contents, bibliographies, bookmarks, and styles; and develop newsletters and on-screen forms. Prerequisite(s): OFFTECH-128.

OFFTECH-133  CREDITS: 3
Business Document Production 1
This course is designed to enhance keyboarding skills and to develop basic document formatting techniques, while applying decision-making skills. Students will demonstrate specific document formatting and keying speed competencies. Prerequisite(s): OFFTECH-136.

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OFTECH DEGREE/DIPLOMA COURSE DESCRIPTIONS

OFTECH-134 Credits: 3
Legal Document Production
Utilizing a microcomputer and software, this course gives students experience in preparing legal documents and correspondence that are used in the various legal specialties. Legal vocabulary is also emphasized. Prerequisite(s): OFTECH-133, RBUS-141.

OFTECH-135 Credits: 3
Medical Document Production
This course is designed to expand the student’s medical vocabulary and develop skills in keyboarding, editing, storing, and printing of medical documents on microcomputers. Emphasis is placed on building speed and improving accuracy. Prerequisite(s): OFTECH-122, OFTECH-125 and OFTECH-133.

OFTECH-136 Credits: 1
Keyboarding Skill Development 1
Using microcomputer software, this course is designed to improve keying speed and accuracy utilizing the Cortez Peters method of instruction. Individualized keyboarding drills and rhythm drills, as well as timed writings, are emphasized to improve skills. Prerequisite(s): OFTECH-103.

OFTECH-137 Credits: 3
Business Document Production 2
Students acquire proficiency in producing documents, editing and composing more complicated business documents, making decisions, following directions and performing realistic office tasks through simulation. Prerequisite(s): OFTECH-103.

OFTECH-142 Credits: 3
Administrative Procedures for the Medical Office
Students apply previously learned skills to complete simulated medical office activities (with a medical focus) in a timely, accurate manner. Developing desirable human relations and decision-making skills is emphasized. Microcomputers are used. Prerequisite(s): OFTECH-125 and completion of or currently registered for OFTECH-135 and RBUS-140.

OFTECH-146 Credits: 1
Keyboarding Skill Development 2
This course is designed to improve the student’s keyboarding skills utilizing the Cortez Peters method of instruction. Prerequisite(s): OFTECH-136.

OFTECH-147 Credits: 3
Machine Transcription: Proofreading and Editing/Legal
Students receive instruction in transcribing legal correspondence, client documents and court documents from machine dictation. Emphasis also is placed on production of mailable documents, utilizing correct terminology and grammar skills. Prerequisite(s): OFTECH-122, OFTECH-133 and RBUS-141.

OFTECH-148 Credits: 3
Machine Transcription: Proofreading and Editing/Medical
Correct grammar, punctuation and format of medical documents are emphasized through review and practice. Students are introduced to transcribing equipment and techniques, and to the transcription of taped dictation and written drafts of routine medical documents. Microcomputers are used. Prerequisite(s): OFTECH-122 with minimum grade C, and completion of or concurrent registration in both OFTECH-125 and OFTECH-133.

OFTECH-155 Credits: 2
Essential Business Procedures
The student receives hands-on training using a business telephone, including effective speaking and listening skills; customer service skills; message-taking skills; and effective use of the telephone directory, a facsimile machine, a photocopier, a business calendar, and an electronic calculator while performing a basic math review.

OFTECH-156 Credits: 1
Keyboarding Skill Development 3
This course is designed to improve keyboarding skills utilizing the Cortez Peters method of instruction. Prerequisite(s): OFTECH-146.

OFTECH-164 Credits: 3
Legal Office Procedures
This course is designed to equip students with the decision-making ability necessary to apply their knowledge and skills to handling situations encountered in a law office. This is accomplished through an integrated application of skills using simulation techniques. Prerequisite(s): OFTECH-134 and OFTECH-147.

OFTECH-165 Credits: 3
Administrative Office Procedures 1
This course is designed to develop the professional skills and attitudes needed in today’s global business environment. Topics include making ethical decisions, working independently and as a team member, and managing time. Telecommunications, mail processing, travel arrangements and conferences, public relations and ergonomics will be included. Prerequisite(s): OFTECH-122 and OFTECH-133.

OFTECH-167 Credits: 4
eBusiness Procedures
Gain skills in Windows, internet usage, basic home computer maintenance, email, MS Publisher, and procedures related to a business telephone, fax, electronic calendering and standard mail. Use office hardware such as laptop computer, handheld computer, tablet computer, digital camera, scanner, fax and photocopier. Instruction will be in English.

OFTECH-174 Credits: 2
Medical Claims Reimbursement
The course focuses on achieving maximizing reimbursement for the medical office through the evaluation and design of patient financial forms, the maintenance of insurance carrier documentation, and the comparison of manual and electronic billing/claims filing systems. Prerequisite(s): Completion of or currently enrolled in RBUS-140.

OFTECH-176 Credits: 1
Alphabetic Filing
Basic terminology, principles and procedures of alphabetic indexing and document storage and retrieval are applied to card and document filing. Basic procedures for filing alphabetically by subject are also applied.

OFTECH-177 Credits: 1
Punctuation
This is a one-credit course designed to help students improve their punctuation skills, as required in today’s diverse job market.

OFTECH-184 Credits: 3
MS Office: Word, Excel, Access and PowerPoint
This course offers skill development in word processing such items as multiple-page documents with attributes, spreadsheet with formulas and functions, database with tables, queries, forms/reports, presentations, Internet and email. Prerequisite(s): OFTECH-102 and OFTECH-133.

OFTECH-185 Credits: 3
MS Office – Intermediate
This course offers skill-development in intermediate and integrated applications in Word, Excel, Access, PowerPoint, internet/email, wireless technologies/PDAs, CD-burner, scanner, web pages and other technologies. Prerequisite(s): OFTECH-184.

OFTECH-186 Credits: 3
MS Office for Bilingual Users
Students learn MS Word, Excel, Access and PowerPoint using software in English and a second language. Instruction is in English.

OFTECH-187 Credits: 2
Website Development
Using Adobe Dreamweaver CS4 Suite of software, training in website development will be provided. Web pages are a collection of text in HTML format; so hyperlinking pages, adding images, collecting data and displaying pages on the Internet will be introduced in this class.

OFTECH-192 Credits: 1
Legal Administrative Professional Internship
This is a cooperative training program enabling students to observe and apply theory, skills and techniques studied in the Legal Administrative Professional program. Students work in an approved legal office under the supervision/guidance of a teacher and an employer. Prerequisite(s): OFTECH-134 and OFTECH-147.
OFTECH – OTASST

DEGREE/DIPLOMA COURSE DESCRIPTIONS

OFTECH-196
Administrative Professional Internship
This course is a cooperative training program that allows students to utilize skills and knowledge in an approved business office, under the supervision and guidance of a teacher-coordinator and a cooperating employer. Prerequisite(s): OFTECH-137, OFTECH-165 and OFTECH-184.

OFTECH-197
Medical Office Career Investigation
This course provides students with in-depth exposure to employment in the healthcare office setting. Students will conduct interviews, research into specific medical office careers, prepare a PowerPoint presentation, participate in group and individual work-scenario case problems and prepare an extensive portfolio. Prerequisite(s): Instructor’s consent required.

OPTICINARY SCIENCE

OPTSCI-110
Optical Theory and Principles
A general overview of optical principles and theories. Areas discussed include ethical and legal aspects of ophthalmic practice, optical terminology, lens theory and an introduction to the ophthalmic prescription. Other areas of discussion include the concept of lens power, thick and thin lens theory, and index of refraction and optical prism. Prerequisite(s): Student must be admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-111
Orientation to Ophthalmic Dispensing
An overview of the ophthalmic dispensing. The areas covered include: pupillary distance, multifocal and frame measurements, frame materials, and frame selection. Frame adjustments and problem-solving skills will be emphasized. Prerequisite(s): Student must be admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-112
Ocular Anatomy and Physiology
The structure and function of the human body is discussed, emphasizing the anatomy and physiology of the human eye and visual systems. Recognition of common eye disorders and refractive errors are discussed. Treatments of visual disorders and current trends in treatment are also covered. Prerequisite(s): Students must be admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-113
Lab Procedures – Surfacing
Practical experience in ophthalmic surface procedures is obtained. Students will fabricate single-vision and multi-focal lenses. The student will learn to layout a lens, calculate tool curves and determine thickness of a lens. The student will also learn how to verify the power of a lens using lensometers. Prerequisite(s): Student must be admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-114
Lab Procedures – Finishing
Continuation of OPTSCI-113. Students acquire knowledge to fabricate and finish single-vision and multi-focal lenses with emphasis on the procedures performed in the optical finishing lab. This includes additional lensometry skills, operation of the project-o-marker for lens layout, selection of frame patterns, utilization of several systems for edgeinging and finishing ophthalmic lenses. Cosmetic applications such as edge polishing will also be presented. Prerequisite(s): OPTSCI-113 and admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-115
Introduction to Contacts
Theory, history and terminology of contact lenses including: fitting, application and removal procedures; care of soft and hard lenses; verification of contact lens prescription; and “in office” modification of contact lenses. Completing the course will establish a solid foundation in preparing for the National Contact Lens Exam (NCLE). Prerequisite(s): OPTSCI-112 and admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-116
Optical Business Management
This course will focus on the various aspects of managing a successful and profitable optical business. Special emphasis will be placed on communication skills, dealing with customers, handling telephone customers, motivating and training employees for the delivery of good customer service. Prerequisite(s): Student must be admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-117
Optical Clinic – Advanced
Lab and Dispensary Techniques
This course will expand on the knowledge acquired in the first semester. Students will be operating the on-campus dispensary. Students will also assist customers in frame selection, adjusting and repairing eyewear. The main projects will be production of eyewear in dispensary. Prerequisite(s): OPTSCI-113, OPTSCI-114 and admitted to the Optician-Vision Care program (31-516-3).

OPTSCI-119
ABO Certification Review
A comprehensive review of all aspects of ophthalmic dispensing will take place in preparation for the National Optician Certification Exam (ABO): A mock NOCE will be administered. Prerequisite(s): OPTSCI-111 and admitted to the Optician-Vision Care program (31-516-3).

OCCUPATIONAL THERAPY ASSISTANT

OTASST-109
Medical Terminology for OTA
This course promotes knowledge of the elements of medical terminology. Emphasis is placed on the ability to spell and pronounce medical terms, an understanding of medical abbreviations and an appreciation of the logical method found in medical terminology, including word analysis and word building. Terminology for the OTA is explored. This course is delivered online. Basic computer skills are recommended.

OTASST-111
Alternative Medicine – Theory and Practice
This elective course is designed to broaden the knowledge base of students or traditional healthcare practitioners by exploring popular complementary medicine approaches. Students compare the theory and practice of homeopathy, nutritional supplements, acupuncture and body-energy work. Practical treatment applications for common acute and chronic conditions are shared. Prerequisite(s): Admission to the Occupational Therapy Assistant program (10-514-1).

OTASST-138
Orthotics – Principles and Fabrication
This course covers the principles of static and dynamic splinting, properties of thermoplastic materials, creation of splint design patterns, custom splint fabrication, commercial splinting products, vendor resources and orthotic technology. Prerequisite(s): Admission to the Occupational Therapy Assistant program (10-514-1), and completion of or concurrent registration in NAFSCI-177.

OTASST-171
Introduction to Occupational Therapy
This course provides an overview of history, the philosophy, ethics and scope of occupational therapy practice. The course examines legal responsibilities, professional resources and organization. Students practice basic skills related to therapeutic relationships and determine their own suitability to a career in occupational therapy. Prerequisite(s): Admission to the Occupational Therapy Assistant program (10-514-1).

OTASST-172
Medical and Psychosocial Conditions
This course introduces medical and psychosocial conditions as they relate to occupational therapy practice. Topics will include etiology, symptomology, treatment and contraindications. Prerequisite(s): Admission to the Occupational Therapy Assistant program (10-514-1) and completion of or concurrent registration in OTASST-173.

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### OTASST – PHARMT Degree/Diploma Course Descriptions

**OTASST-173**  
**Activity Analysis and Application**  
Credits: 2  
This course provides instruction in activity analysis with hands-on experience in activities across the lifespan. Students apply the teaching/learning process and adhere to safety regulations. Prerequisite(s): Admission to the Occupational Therapy Assistant program (10-514-1).

**OTASST-174**  
**OT Performance Skills**  
Credits: 4  
The focus of this course is on the development of skills related to assessment and intervention in the areas of communication, sensory, motor and cognition. Prerequisite(s): OTASST-171, OTASST-172 and OTASST-173.

**OTASST-175**  
**Psycosocial Practice**  
Credits: 3  
This course examines the role of the OTA in the service delivery to individuals affected by mental health conditions. The course provides an opportunity for development of skills related to psychosocial assessment and interventions. Prerequisite(s): OTASST-171, OTASST-172, OTASST-173 and OTASST-177.

**OTASST-176**  
**OT Theory and Practice**  
Credits: 3  
This course examines the theoretical foundations that guide OT practice. Students will apply group dynamics and demonstrate leadership skills. Prerequisite(s): OTASST-171, OTASST-172 and OTASST-173.

**OTASST-177**  
**Assistive Technology and Adaptations**  
Credits: 2  
This course explores technologies that support delivery of OT services, with an emphasis on competency related to computer skills, ergonomics, adaptive devices and environments. Prerequisite(s): OTASST-171, OTASST-172 and OTASST-173.

**OTASST-178**  
**Geriatric Practice**  
Credits: 3  
This course provides opportunities for the learner to examine the role of the OT in the service delivery to elders in a variety of settings. The course includes analysis of the impact of age-related changes and disease processes on the function of the elderly. Prerequisite(s): OTASST-171, OTASST-172 and OTASST-173.

**OTASST-179**  
**Community Practice**  
Credits: 2  
Explores practice options and interventions for occupation-based community practice. Students articulate the unique role on occupational therapy within the community. Prerequisite(s): OTASST-171, OTASST-172, OTASST-173, OTASST-176 and OTASST-178.

**OTASST-182**  
**Physical Rehabilitation Practice**  
Credits: 3  
Explores interventions relative to major physical disability diagnoses seen in OT practice. Evaluation, treatment interventions and documentation are emphasized relative to the biomechanical, neurodevelopmental and rehabilitative approaches to practice. Prerequisite(s): OTASST-174, OTASST-176, OTASST-177 and OTASST-178.

**OTASST-183**  
**Pediatric Practice**  
Credits: 3  
Explores interventions relative to major pediatric diagnoses seen in OT practices. Evaluation, treatment interventions and documentation are emphasized within the context of the child’s occupations. Prerequisite(s): OTASST-174, OTASST-176, OTASST-177 and OTASST-178.

**OTASST-184**  
**OTA Fieldwork 1**  
Credits: 2  
Integrates classroom theory and practice into a fieldwork Level I experience. Provides opportunities to assist in the development of communication, professional and observational skills. Prerequisite(s): Completion of or concurrent enrollment in OTASST-182 and OTASST-183.

**OTASST-185**  
**OTA Fieldwork 2B**  
Credits: 2  
Develop skills and behaviors necessary for entry-level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork 2A. Prerequisite(s): OTASST-175, OTASST-179, OTASST-182, OTASST-183 and OTASST-184.

**OTASST-186**  
**OTA Fieldwork 2A**  
Credits: 5  
Develop skills and behaviors necessary for entry-level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork 2B. Prerequisite(s): OTASST-175, OTASST-179, OTASST-182, OTASST-183 and OTASST-184.

**OTASST-187**  
**OTA Fieldwork 2B**  
Credits: 5  
Develop skills and behaviors necessary for entry-level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork 2A. Prerequisite(s): Completion of or concurrent registration in OTASST-183 and OTASST-186.

**PAINTING AND DECORATING**

**WOOD FINISHING**

**PAINT-353**  
**Wood Finishing**  
Credits: 1  
The characteristics of the supplies used in wood finishing are studied thoroughly. Topics such as the manufacture of stains, shellac, varnishes, wax, lacquers and enamels are covered. Health, safety and general trade practices will also be presented. Prerequisite(s): Completion of or concurrent registration in CDMIL-305.

**PHARMACY**

**PHARM-300**  
**Orientation to Pharmacy Operations**  
Credits: 1  
Technical aspects of pharmacy are introduced with special emphasis on community pharmacy practices. Topics include drug distribution systems, routes of administration, dosage forms, drug standards, label format, prescription processing, prescription insurance, inventory, and nonsterile compounding. Prerequisite(s): Admission to Pharmacy Technician program (31-536-1).

**PHARM-302**  
**Pharmaceutical Calculations**  
Credits: 2  
Basic math computations are reviewed, including addition, subtraction, multiplication and division of whole numbers, fractions and decimals. The course covers specific areas of the avoirdupois, apothecary and metric systems of measurement used in dosage calculations. Formulas and methods used in the preparation of pharmaceutical products are presented. Prerequisite(s): Admission to Pharmacy Technician program (31-536-1).

**PHARM-303**  
**Introduction to Drug Classification**  
Credits: 2  
Pharmaceutical terminology is presented, including generic and brand names of drugs by pharmacologic classification. A survey of the actions and reactions of the major pharmacologic groups is presented, with emphasis on pharmaceutics. Prerequisite(s): Admission to the Pharmacy Technician program (31-536-1).

**PHARM-306**  
**Pharmacy Clinical Experience 1**  
Credits: 1  
This course provides practical application of knowledge and technical skills covered in didactic and laboratory portions of the program. Students observe, assist and perform assigned duties in a community pharmacy setting. Prerequisite(s): Completion of or concurrent registration in PHARM-300, PHARM-302, PHARM-303, PHARM-395 and HEALTH-107.

**PHARM-310**  
**Institutional Pharmacy Practice**  
Credits: 2  
Topics specific to institutional pharmacy practice are presented, including pharmacy references, confidentiality and ethics, jurisprudence, medication errors, materials management, emergency medicine and quality assurance. Processing of outpatient prescriptions and brand/generic name recognition are also included. Prerequisite(s): PHARM-300, PHARM-302, PHARM-303, PHARM-306 and PHARM-395.

**PHARM-311**  
**Orientation to Sterile Solutions**  
Credits: 2  
This course focuses on introductory material related to techniques for safe preparation of sterile solutions. Application
PHARMT – PHOTO Degree/Diploma Course Descriptions

PHARM-312 Credits: 3
Pharmacy Operations Laboratory
This laboratory course applies theory through performance of technical pharmacy tasks including unit dose dispensing, IV admixture, repackaging, nonsterile compounding and use of references. Prerequisite(s): PHARM-300, PHARM-302, PHARM-303, PHARM-306 and PHARM-395.

PHARM-314 Credits: 2
Pharmacy Clinical Experience 2
This course provides the practical application of knowledge and technical skills covered in didactic and laboratory portions of the program. Students observe, assist and perform assigned duties in an institutional pharmacy setting. Prerequisite(s): Completion of or currently enrolled in PHARM-310, PHARM-311, PHARM-312 and PHARM-316.

PHARM-316 Credits: 1
Applied Pharmaceutical Calculations
Students learn advanced pharmaceutical calculations involving clinically related medication orders and/or prepared prescriptions. The focus will be on medication label interpretation and application of label information in calculations. Prerequisite(s): PHARM-300, PHARM-302, PHARM-303, PHARM-306 and PHARM-395.

PHARM-395 Credits: 1
Federal Laws, Ethics and Customer Service
This course introduces the student to the practice of pharmacy including the history of the profession, and a description of the roles of the pharmacist and the pharmacy technician in various practice settings. Federal laws, ethics, professional standards and customer service are addressed. Prerequisite(s): Admission to Pharmacy Technician program (31-536-1).

PHOTOGRAPHY

PHOTO-101 Credits: 3
Digital Fundamental Photography
Students will use their digital SLR camera to develop their creative thought while learning the technical and mechanical aspects of photography. For this class, students are required to own a Canon or Nikon D-SLR with manual exposure controls, adjustable apertures and shutter speeds, and interchangeable lens capabilities.

PHOTO-102 Credits: 1
Introduction to Digital Photography
Digital photography has changed the world of professional and consumer photography. This course provides an overview of the essentials of digital photography, history, consumer and professional applications, resolutions, digital color and printing applications.

PHOTO-103 Credits: 3
Digital Photography
The theory and application of professional, digital original photography will be studied. Students will use assorted high-end professional digital camera systems and output images via professional calibrator, continuous-tone, digital printing systems. Prerequisite(s): PHOTO-108, PHOTO-139 and PHOTO-141.

PHOTO-104 Credits: 2
Digital Color Management for the Graphics Industry
A major challenge facing graphics professionals is how to ensure accurate color reproduction from the original to the computer monitor to final output. This course addresses the varied requirements of designers, artists, photographers, separators and printers.

PHOTO-106 Credits: 3
View Camera Techniques
Students learn how to use a view camera to control the perspective, form and rendition of photographic subjects. Also emphasized are elements of composition and visual organization of the photographic image. Additionally, students learn black and white film processing, printing and finishing techniques. Prerequisite(s): Completion of or concurrent registration in PHOTO-101.

PHOTO-107 Credits: 1
Photographic Trends
Photography has been used to create portrait and pictorial photographs, record history-making events and influence social change. To understand how the medium has evolved, students learn about important photographers and the photographers who created them.

PHOTO-108 Credits: 3
Photographic Lighting
Many light sources are used in professional photography, including natural, incandescent and electronic flash. Students learn the theory of these and other light sources and become competent in their use through practical application. Prerequisite(s): PHOTO-101, PHOTO-106, and completion of or currently enrolled in PHOTO-139.

PHOTO-114 Credits: 3
Photographic Portfolio
This course is designed as the keystone to the completion of the Photography program. The thrust is the development of a working portfolio in preparation for employment. The resume, interviewing and job search techniques, as well as business basics, are also stressed. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124 and PHOTO-142.

PHOTO-115 Credits: 2
Advanced Digital Photography
This course is designed to develop advanced digital photographic skills relating to high-resolution digital studio and location photography. A variety of support topics will be explored including professional monitor/printer calibration and profiling, as well as Photoshop plug-ins for creating special effects and photographic enhancements. Prerequisite(s): PHOTO-103.

PHOTO-121 Credits: 3
Commercial Photography
Effective photography for advertising requires special considerations, including psychological motivation and appeals used in selling. In addition, students learn how to control subject form and tonality, and the function of the photographer as director. Both film and digital processes will be incorporated in this course. Prerequisite(s): PHOTO-108 and PHOTO-139.

PHOTO-124 Credits: 3
Portraiture
Students work with a variety of subjects, in studio and location settings, to produce pleasing likenesses and character studies. Dealing with people as subjects in a relaxed fashion and photographer/subject interaction are stressed. The presentation of the final product is also covered. Prerequisite(s): PHOTO-108, PHOTO-139 and PHOTO-141.

PHOTO-126 Credits: 3
Advanced Studio Lighting
This course is a study and execution of modern lighting techniques. Students learn how to apply these techniques in order to produce progressive studio work in a variety of studio situations. Prerequisite(s): PHOTO-103 and PHOTO-108.

PHOTO-130 Credits: 3
Photographic Composition
This is designed as a critical study of traditional/contemporary composition considerations, and of the importance of the photographic critique. Students will be dealing with a photographic dialogue that will emphasize the visual elements and the effects of color, line, value, texture, volume, time and form in images. Prerequisite(s): PHOTO-101, PHOTO-106.

PHOTO-139 Credits: 3
Measurement Techniques
Students learn to control black and white photographic technique by using densitometry and the Zone system. This will enable the student to pre-visualize the finished photograph before exposing the film. In this course, emphasis is on the 4 x 5 format and sheet film. Prerequisite(s): PHOTO-101 and PHOTO-106.

For more information: matc.edu or 414-297-MATC. Page 277
PHOTO - PHYED  

PHOTO-141  
Color Photography 1  
Credits: 3  
The use of color film and digital media as creative capture tools are studied, discussed and applied in a contemporary environment. Students will plan and compose images, as well as learn the fundamentals of Photoshop, the Macintosh operating system, film scanning and post-shooting image manipulation. Prerequisite(s): PHOTO-103, PHOTO-121, or currently enrolled in PHOTO-108 and PHOTO-139.

PHOTO-142  
Color Photography 2  
Credits: 3  
Advanced studio and location photography are accomplished with the view camera and other camera formats. Composition and planning are stressed as key elements to achieve quality work. Both film and digital processes are incorporated to produce high-quality images in a modern environment. Prerequisite(s): Completion of or concurrent registration in PHOTO-103.

PHOTO-144  
Digital Video and Still Photography  
Credits: 3  
This is a basic camera-oriented digital photography course combining digital still and digital video. Students plan, compose, light and capture the digital image. The course also includes minimal digital editing. Prerequisite(s): PHOTO-101, VICOM-154.

PHOTO-166  
Photographic Management  
Credits: 1  
This course is designed to provide students with the basic understanding of the activities and principles for managing photography-related enterprises, including the challenges and responsibilities of operating a business. The emphasis is on communication skills, estimating, management, marketing, finance and negotiation. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124 and PHOTO-142.

PHOTO-173  
Photo Journalism  
Credits: 3  
This course is designed to develop the necessary skills to make concise photos that convey a message, either news or documentary, with emphasis placed on the deadline nature of photo journalism. Topics include ethical and legal considerations and the electronic darkroom. Prerequisite(s): PHOTO-108 and PHOTO-139.

PHOTO-180  
Industrial Photography  
Credits: 3  
Lectures outline the work performed by in-house industrial or corporate photographers. Studio and location assignments enforce the skills required to function in today’s commercial climate. Students will incorporate color and black-and-white film media, as well as digital capture methods, to complete their assignment work. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124 and PHOTO-142.

PHOTO-190  
Photographic Internship  
Credits: 1  
This course is designed to offer the advanced photography student an opportunity to experience real-life work situations in the photographic community. Students will share their on-the-job experiences with the class. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124 and PHOTO-142.

PHYSICAL EDUCATION  

PHYED-145  
CPR and First Aid  
Credits: 1  
This course offers preparation to certify individuals in the techniques of rescue breathing, choking, CPR and other related emergencies. The course includes training for resuscitation of the adult, child and infant, along with proper techniques in two-person CPR and use of masks for rescue breathing. Successful course completion will give individuals official CPR certification.

PHYED-201  
High-Level Wellness  
Credits: 3  
The focus of the course is to help students make a realistic appraisal of their health, and provide techniques to correct minor health problems. The course includes stress management, nutritional awareness and physical fitness techniques.

PHYED-203  
Hatha Yoga for Wellness 1  
Credits: 1  
This Hatha Yoga class focuses on a path toward wellness. It includes postures and meditation techniques that are designed to develop symmetry and balance for the body, mind and spirit. Its exercise disciplines create challenges for self-improvement and control of stress.

PHYED-210  
An Active Approach to Wellness and Fitness  
Credits: 3  
This lecture and lab course provides students with a contemporary approach to the total wellness concept, which includes physical fitness, exercise, nutrition and stress management. The relationship of physical fitness and activity to healthy lifestyles and wellness is examined. Students also learn CPR, make realistic appraisals of their health, and identify and use physical techniques and wellness concepts to develop personal plans for lifetime wellness.

PHYED-221  
Basketball 1  
Credits: 1  
Basic basketball skills – shooting, offense, team play and conditioning – are taught and demonstrated in game situations. Interclass tournaments are conducted for the students.

PHYED-222  
Basketball 2  
Credits: 1  
Advanced individual basketball skills are demonstrated and practiced. The course includes offense and defense strategies. Special situations and coaching techniques also will be covered.

PHYED-225  
Weight Training and Aerobic Fitness 1  
Credits: 1  
This course provides an individualized approach to various types of weight resistance training and aerobic conditioning. Specific training using machines, free weights and floor exercises is included. A variety of cardiovascular exercise methods will be covered.

PHYED-224  
Weight Training and Aerobic Fitness 2  
Credits: 1  
Emphasis on advanced weight training and cardiovascular fitness is stressed. Individuals learn how to develop specific areas of concentration for their personal needs.
PHYED – PLEGAL  DEGREE/DIPLOMA COURSE DESCRIPTIONS

PHYED-250  Credits: 3
Movement Exploration for Classroom Teachers
This course is designed for the classroom teacher to integrate the discipline of physical education and movement exploration into their classrooms, and the key role movement exploration can play in producing physically active students. This course includes the following: an off-campus requirement of field experience, a background check and a TB skin test. Additional fees will be required.

PHYED-255  Credits: 1
Body Toning and Resistance Training 1
Specific techniques of body toning, along with progressive resistance exercises, are the focus. A series of rhythmic exercises are taught to enhance muscular specificity for developing body shaping and muscular endurance, and improve physical appearance.

PHYED-256  Credits: 1
Body Toning and Resistance Training 2
This course is designed to teach advanced strategies of body toning and progressive resistance training. Select exercises are presented to enhance muscular specificity for developing body shaping and muscular endurance to improve physical appearance, as well as prepare for the physical demands of everyday living.

PHYED-261  Credits: 1
Modern Dance 1
This course is an introduction to basic styles and techniques, and creating patterns of modern dance. The course will provide varied experiences with sustained and progressive movements, locomotor and non-locomotor combinations, and also creative movement techniques.

PHYED-262  Credits: 1
Modern Dance 2
This course is a continuation and development of modern dance techniques with increasing emphasis on choreographing dance patterns and individual performances.

PHYED-263  Credits: 1
Dance for Aerobic Fitness 1
This course is a series of choreographed exercises to music with vigorous, continuous dance movements that strengthen the cardiovascular system. These exercises enhance flexibility, muscle conditioning, endurance and weight control.

PHYED-264  Credits: 1
Dance for Aerobic Fitness 2
This is a continuation of aerobic dance exercise. It involves full muscle activity combined with vigorous cardiovascular activity. Additional emphasis on aerobic circuit training will be included.

PHYED-266  Credits: 1
Earth-Friendly Fitness
Students will explore and participate in practical, green (Earth-friendly) physical activities that help to utilize human energy as ways to reduce the carbon footprint created from mechanical and industrial behaviors.

PHYED-268  Credits: 1
Fitness Walking 1
This course introduces the proper guidelines and techniques used in indoor and outdoor fitness walking. Students will learn proper walking mechanics and develop a lifelong walking program. Various forms of walking and related exercises are presented.

PHYED-269  Credits: 1
Fitness Walking 2
This course offers advanced walking techniques and mechanics. Weekly training programs are developed to include distance training, hill workouts and intervals. These workouts are incorporated with an approach for an advanced, lifelong walking program. Prerequisite(s): PHYED-268.

PHYED-271  Credits: 2
ACE Personal Trainer Exam Preparation
This course provides knowledge and practical skills in preparation for the national certification exam. Topics include safe, effective and purposeful activity guidelines; designing and implementing programs; and essentials of the client-trainer relationship.

PHYED-272  Credits: 2
ACE Lifestyle and Weight Management Consultant Certificate Preparation
This course highlights essential relationships between physical activity and nutrition, and illustrates how permanent weight loss is brought about through a change in lifestyle. Topics include weight management, behavior change, and physiology of obesity.

PHYED-273  Credits: 2
ACE Group Fitness Instructor Certification Program Course
Designed for fitness professionals teaching any form of exercise in a group setting, this course covers topics such as kinesiology and exercise physiology; instructional techniques including class design, cueing and injury prevention; and concepts such as developing effective communication skills and motivational skills.

PARALEGAL

PLEGAL-101  Credits: 3
Introduction to Paralegalism
This course offers an orientation to the American judicial system, the growth and development of the paralegal profession, ethics, and skills required to practice such as interviewing, investigation, legal reasoning, writing and document preparation.

PLEGAL-103  Credits: 3
Legal Research
This course provides an understanding of the law library through projects that develop research skills by using digests, legal encyclopedias, reporter systems, treatises and practice manuals. Students also become familiar with computerized legal research. Prerequisite(s): PLEGAL-101 and must be admitted to Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-105  Credits: 3
Civil Procedure
Covers the fundamental principles used in civil litigation. Students apply the procedural concepts discussed by reviewing forms, and drafting pleadings and other documents used in civil litigation. Prerequisite(s): PLEGAL-101, and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-107  Credits: 3
Legal Writing
This course involves the use of principles that apply to effective legal writing. Students draft memoranda, briefs, letters and other forms of correspondence to gain skills in communicating legal concepts in various areas of the law. Prerequisite(s): PLEGAL-101, and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-111  Credits: 3
Litigation Practice Systems
This course is a study of the procedures involved and the documents that may be used in a civil lawsuit prior to filing, during the resolution of the matter, and after the judgment. Included in the study is the paralegal’s role in interviewing, investigative techniques, settlement procedures and trial preparation. Prerequisite(s): PLEGAL-101, and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-114  Credits: 3
Trusts and Estates – Probate Systems
This course examines the law of real property, real estate interests, transactions and processes. Forms used in Wisconsin real estate transactions will be used. Prerequisite(s): PLEGAL-101, and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-116  Credits: 3
Real Estate Law and Practice
This course examines the law of real property, real estate interests, transactions and processes. Forms used in Wisconsin real estate transactions will be used. Prerequisite(s): PLEGAL-101, and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-118  Credits: 3
Criminal Practice
Concentrates on the sources and purposes of criminal law, the meaning of criminal responsibility, elements of crimes, defenses and criminal procedures. Prerequisite(s): PLEGAL-101 and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

For more information: matc.edu  or 414-297-MATC.
PLEGAL – POLICE

DEGREE/DIPLOMA COURSE DESCRIPTIONS

PLEGAL-121  Credits: 3
Domestic Relations and Divorce Practice Systems
This course is a study of actions that affect the family such as divorce, legal separation, annulment, paternity and adoption. Prerequisite(s): PLEGAL-101 and be admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-123  Credits: 3
Corporate Practice Systems
Students are introduced to the various types of business organizations with special emphasis on the limited liability company and the corporation. Topics include formation of business entity, required recordkeeping, securities regulations and organizational maintenance. Prerequisite(s): PLEGAL-101 and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-127  Credits: 3
Debtor-Creditor Law
This course examines the law relating to creation of debt, collection of debt and bankruptcy. Forms used in Wisconsin collection practice and U.S. Bankruptcy Court will be used. Prerequisite(s): PLEGAL-101 and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLEGAL-140  Credits: 3
Legal Interviewing/Investigation
This course instructs students how to access public records, interview witnesses, locate missing persons and use the internet as an investigative tool. Prerequisite(s): PLEGAL-101 and admitted to the Paralegal program (10-110-1) or certificate (00-110-1).

PLUMBING

PLUMB-300  Credits: 3
Plumbing Theory 1
This fundamental course presents the theory of basic methods of plumbing and piping installation practices. It is intended to complement the course PLUMB-302 Plumbing and Piping Shop 1.

PLUMB-301  Credits: 2
Applied Drawing for Plumbers 1
Covers basic principles that are essential for visualization and training in the interpretation of blueprints and freehand sketches of simpler plumbing and piping jobs. This includes drawing scales, piping symbols and architectural symbols.

PLUMB-302  Credits: 3
Plumbing and Piping Shop 1
Students will be able to apply the knowledge and skills they have learned to the design and construction of complete plumbing installations. They will also be able to develop systemized methods of plumbing installation practices, as well as learn the use and care of plumbing fixtures, appliance equipment and power tools.

PLUMB-304  Credits: 3
Plumbing Theory 2
This course presents the general rules, definitions and principles of the Uniform Wisconsin State Plumbing Code. Students will learn about the code and its regulations. Additionally, students learn the design and installation of various plumbing systems. Prerequisite(s): PLUMB-300.

PLUMB-305  Credits: 2
Plumbing and Pipe Joining Process 2
This course is designed to provide students with advanced pipe joining processes associated with the plumbing field. Specifically, students learn fundamentals of ARC welding, gas welding and wire welding. The course also includes plastic pipe joining methods for potable water, waste and vent systems. Prerequisite(s): PLUMB-308.

PLUMB-306  Credits: 3
Plumbing and Piping Shop 2
This course provides students with an opportunity to apply plumbing practices in a shop or actual work setting. Students will be required to combine theory and drawing skills to demonstrate their installation ability. Prerequisite(s): PLUMB-302.

PLUMB-308  Credits: 2
Plumbing and Pipe Joining Process 1
This course is designed to provide students with basic pipe joining processes associated with the plumbing field. Specifically, students will learn fundamentals of cutting, reaming, threading, soldering and brazing. The course also includes oxygen/acylene cutting methods.

PLUMB-309  Credits: 2
Applied Drawing for Plumbers 2
Course is designed to provide students with experience in drawing. The coursework includes design and layout work, which then leads students to plan view elevations and isometric drawings. Prerequisite(s): PLUMB-301.

PLUMB-310  Credits: 1
First Aid/Safety in Plumbing
This is a course designed to provide students with first aid/CPR training according to the American Red Cross. Additionally, students will cover U.S. Occupational, Safety and Health Administration (OSHA) guidelines.

PLUMB-312  Credits: 1
Computer Applications/Plumbing
This course provides instruction in word processing, PowerPoint, spreadsheet and internet skills. Students will have an opportunity to apply computer skills in various learning activities.

PLUMB-325  Credits: 2
Plumbing Internship
This course is designed to provide students with field experience in pipe joining. Students will have an opportunity to practice skills in welding and plastic pipe joining methods, dependent upon the field assignment. There will also be practical experiences in cutting, reaming, threading, soldering and brazing.

POLICE TECHNOLOGY

POLICE-100  Credits: 3
History and Philosophy of Policing
This course provides an examination of the evolution of private and public law enforcement in America, and of the process and strategy employed while policing in a free society. This course also explores how diversity and ethics relate to organizational conduct of law enforcement agencies.

POLICE-102  Credits: 3
Organization and Administration
This course provides a basic introduction into police administration. It examines principles of management and supervision practices that are applied to public and private law enforcement agencies in America. It will explore organizational strategies related to the budget process, community oriented policing issues, decision-making, labor relations and personnel management.

POLICE-108  Credits: 3
Introduction to Criminal Justice Process
Offers an examination of the historical development and operation of the administration of the American criminal justice process. The course traces the development, organization and function of the federal and state court systems, and identifies influential constitutional principles. It also traces the criminal justice process from initiation through final disposition.

POLICE-113  Credits: 3
Criminal Law
This course defines and describes theories concerning the nature of crime, and the purpose and source of criminal law in American society. It identifies principles of constitutional, federal and state laws that are applicable to criminal law with emphasis on the Wisconsin Criminal Code. Prerequisite(s): POLICE-108.

POLICE-115  Credits: 3
Criminal Evidence
This course will describe the constitutional principles, the federal laws and the state laws governing the admissibility of evidence into the judicial system. It also describes procedures used in collection, preservation, examination and presentation of evidence in a trial. Prerequisite(s): POLICE-901.

For more information: matc.edu or 414-297-MATC. Page 280
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLICE-117</td>
<td>Arrest, Search and Seizure</td>
<td>3</td>
<td>Students study the theory, laws and practices related to the legality of arrests, searches and seizures, both as individual concepts and how these three components interact within the American criminal justice system. The course also covers constitutional and statutory limitations on the proper authority of law enforcement to perform these tasks. Related contemporary issues also relate to the use of force, and the exclusionary rules will be discussed. Prerequisite(s): POLICE-108.</td>
</tr>
<tr>
<td>POLICE-123</td>
<td>Criminal Investigation</td>
<td>3</td>
<td>This course helps students identify particular skills necessary to determine whether a crime has been committed, and the steps that should be followed in the process of performing an investigation. Students will also become familiar with the components of an investigation including elements of a criminal act, recognition of a crime scene and possible evidence found therein, and the conducting of interviews with all persons connected to the investigation. Other related topics include identification and custodial interviews of suspects, and how all of these components relate to the prosecution and trial phase. Some materials discussed within the course may contain graphic descriptions of criminal acts.</td>
</tr>
<tr>
<td>POLICE-125</td>
<td>Crime Prevention</td>
<td>3</td>
<td>Discussions focus on crime issues and their impact on the economic and social systems in America today. Course content also includes the programs and strategies that have evolved in an effort to address these issues. The course presents proactive and reactive approaches to crime.</td>
</tr>
<tr>
<td>POLICE-131</td>
<td>Traffic Theory</td>
<td>3</td>
<td>Students examine the evolution of motor vehicle laws and the development of traffic law enforcement strategies. This course explores the methodology of post-collision analysis as a means of initiating a safer motoring environment.</td>
</tr>
<tr>
<td>POLICE-135</td>
<td>Juvenile Law and Procedure</td>
<td>3</td>
<td>This course provides an examination of the evolution of juvenile justice in America. It will analyze the functions and jurisdiction of juvenile justice agencies as they relate to the processing of cases, detention issues, and disposition programs under current juvenile law. Crisis management strategies will also be discussed. Prerequisite(s): POLICE-108, POLICE-113, POLICE-117.</td>
</tr>
<tr>
<td>POLICE-141</td>
<td>Police Report-Writing, Records and Interviewing</td>
<td>3</td>
<td>The student learns to write reports related to daily law enforcement purposes using accepted principles of report writing. Instructional units are devoted to improvement of spelling, punctuation, sentence structure, and routine reporting language routinely found in law enforcement. Instruction is geared to both public and private-sector record systems. The student will conduct a number of supervised interviews. Prerequisite(s): POLICE-108, POLICE-113, POLICE-117.</td>
</tr>
<tr>
<td>POLICE-142</td>
<td>Law Enforcement Internship 1</td>
<td>3</td>
<td>This course provides students with the opportunity to observe, identify and possibly assist in law enforcement theory, skills and techniques covering the broad spectrum of law enforcement issues including problem-solving tools, legal procedures, and avenues within the law enforcement community. All students must submit to a criminal background check, driver's license check and provide medical documentation of fitness signed by a physician prior to participation in this course. Prerequisite(s): POLICE-900 or POLICE-108, POLICE-901 or POLICE-117 and POLICE-902 or POLICE-113; with minimum grade C.</td>
</tr>
<tr>
<td>POLICE-143</td>
<td>Law Enforcement Internship 2</td>
<td>3</td>
<td>This course provides students with the opportunity to continue to observe, identify and possibly assist in law enforcement theory, skills and techniques covering the broad spectrum of law enforcement issues including problem-solving tools, legal procedures, and avenues within the law enforcement community. Required: 15 credits with a GPA of 2.0 or higher earned within the MATC Criminal Justice – Law Enforcement program core classes and with consent of Associate Dean of Protective Services. All students must submit to a criminal background check, driver's license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Prerequisite(s): 15 credits of POLICE coursework with minimum grade C.</td>
</tr>
<tr>
<td>POLICE-144</td>
<td>Law Enforcement Internship 3</td>
<td>3</td>
<td>This course provides an introduction to Corrections. Contemporary legal issues Student will learn about past and present domestic and foreign terrorist organizations and the structure of organizations in America that must deal with the actions of these groups. Student will identify constitutional, judicial and statutory concepts relevant to investigating and prosecuting criminal actions of these groups. This includes investigative techniques currently in place.</td>
</tr>
<tr>
<td>POLICE-145</td>
<td>Interview and Interrogation</td>
<td>3</td>
<td>Student will learn the legal issues that define the interviewing of subjects, both in public or in custody, and various techniques to enhance information obtained, including analysis of verbal and non-verbal actions, and how they relate to truth or deception of persons during the interview process.</td>
</tr>
<tr>
<td>POLICE-146</td>
<td>Law Enforcement Employability</td>
<td>3</td>
<td>Course will prepare students to engage in the law enforcement application process including various exams and interviews. Course also addresses mental and physical fitness related to careers in law enforcement.</td>
</tr>
<tr>
<td>POLICE-147</td>
<td>Introduction to Corrections</td>
<td>3</td>
<td>Course addresses the historical and present practice of correctional systems. Topics including offender profiles, inmate and site security, and basic legal-corrections issues will be discussed.</td>
</tr>
<tr>
<td>POLICE-148</td>
<td>History of Police Organization</td>
<td>3</td>
<td>Presents an overview of the role of police agencies in America in a historical context, and also an examination of current issues facing the delivery of police services.</td>
</tr>
</tbody>
</table>
POLICE DEGREE/DIPLOMA COURSE DESCRIPTIONS

POLICE-170 Credits: 2
Operating Motor Vehicle While Intoxicated/Standard Field Sobriety Test
In this course, students will learn to recognize and interpret evidence of operating a motor vehicle while intoxicated (OMVWI) violations, administer and interpret standardized field sobriety test (SFST), make appropriate enforcement decisions, prepare arrest reports for OMVWI violations and complete associated paperwork. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-171 Credits: 2
Professional Communications
Students will learn the role of communication in law enforcement, and will develop and apply specific communication skills and strategies in a variety of simulated situations. Professional communication will be integrated and reinforced throughout the academy; students will be expected to apply professional communication skills appropriately in all simulations, regardless of curriculum area. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-172 Credits: 2
First Aid/CPR/AED/Hazardous Materials
Students will learn how to perform an initial medical assessment for injury or medical condition, how to provide immediate treatment for a variety of injuries and conditions, and how to perform cardiopulmonary resuscitation (CPR) and use an automatic emergency defibrillator (AED). Students will also learn the basics of responding to situations in which hazardous materials may be present. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-173 Credits: 3
Emergency Vehicle Operation
In this course, students will learn the legal context for law enforcement driving including basic patrol operations, emergency vehicle response and pursuit driving. They will practice strategies and techniques for normal and emergency operation, and pursuit driving. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-174 Credits: 4
Care and Use – Firearms
In this course, students will learn to care for and maintain the primary duty handguns. They will learn to shoot quickly and accurately including under low-light conditions, while moving and from behind cover. Students will learn necessary weapon-handling skills. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-175 Credits: 3
Defense and Arrest Tactics
In this course, students will learn the basis for and limits to use of force by Wisconsin officers. Students will learn specific techniques for intervention included in the Wisconsin system of Defense and Arrest Tactics. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-176 Credits: 2
Vehicle Contacts
In this course, students will learn the legal basis for making vehicle contacts, how to conduct a threat assessment to help determine the appropriate type of contact, and how to conduct different types of vehicle contacts. Required: Because this course is contained within the State of Wisconsin Basic Recruit Academy curriculum and is necessary to obtain state certification, all students enrolled in this course must have earned 15 credits with a GPA of 2.0 or better, all earned within MATC’s Criminal Justice – Law Enforcement program core classes. All students must submit to a criminal background check, driver’s license check and provide medical documentation of fitness signed by a physician prior to participation in these training courses. Students must have consent of the Associate Dean of Protective Services to enroll into the program. Prerequisite(s): Consent is required to enroll in this course.

POLICE-900 Credits: 3
Introduction to Criminal Justice
This course is an examination of the American criminal justice system, including the historical and modern role/functions of federal, state, local law enforcement, courts and corrections. The course introduces critical thinking and problem-solving in the context of law enforcement.

POLICE-901 Credits: 3
Constitutional Law
Course studies the theory of laws and the practices of arrests, searches and seizures as individual concepts, and their interrelationships within the criminal justice system. Course also studies constitutional and statutory limitations on the proper authority of law enforcement to perform these tasks. Will contain discussions on contemporary issues of use of force and the exclusionary rules.

For more information: matc.edu or 414-297-MATC. Page 282
POLICE - PSYCH

DEGREE/DIPLOMA COURSE DESCRIPTIONS

POLICE-902
Criminal Law
This course defines and describes theories concerning the nature of crime, and the purpose and source of criminal law in American society. Identifies principles of constitutional, federal, state and local laws that are applicable to criminal law with emphasis on the Wisconsin Criminal Code. Prerequisite(s): POLICE-901.

POLICE-903
Professional Communications
Students will develop and apply specific communication skills and strategies in a variety of simulated situations that are commonly used in law enforcement. Interview skills and interrogation skills will also be addressed in this context. Prerequisite(s): POLICE-900, POLICE-901, POLICE-902, POLICE-904, POLICE-906, POLICE-907, POLICE-908; student may take POLICE-905 concurrently.

POLICE-904
Juvenile Law
In this course, students learn the components of the juvenile justice system including identifying children in need of protection or services, and adjudication of delinquency. Student will identify legal issues and laws relevant to juveniles, and the roles of law enforcement in investigational techniques employed in child maltreatment cases, as well as issues involving missing children. Prerequisite(s): POLICE-901.

POLICE-905
Report Writing
Student will learn to produce reports necessary for operations in law enforcement and the judicial system. Students will also learn the art of creating reports from various sources and the significance of these reports in legal proceedings. Prerequisite(s): POLICE-900, POLICE-901, POLICE-902, POLICE-904, POLICE-906, POLICE-907, POLICE-908; can take POLICE-903 concurrently.

POLICE-906
Criminal Investigation Theory
Students learn the role of evidence in criminal investigation and prosecution, and the proper methods of identifying, documenting and recovering evidence. Students also learn methods and strategies related to interviews of witnesses and specific serious criminal offenses. Prerequisite(s): POLICE-901.

POLICE-907
Community Policing Strategies
Students are introduced to the strategies employed to implement the community policing model of law enforcement in use today. Students learn how law enforcement can work with the community as partners, to the benefit of each entity through proactive approaches that lead to the reduction of criminal activities.

POLICE-908
Traffic Theory
Student will learn Wisconsin traffic laws and will investigate and document traffic crashes using current citations and forms. Student will also learn to recognize and interpret indicators of impaired driving and what actions are to be taken.

POWER PLANT ENGINEER

POWENG-330
Low Pressure Boilers
This course covers the basic operation of low pressure boilers and prepares the student for a Facilities Operating License 3rd Class (low pressure boiler license up to 15 psi.) Curriculum includes boiler systems – fuel, draft, steam and feedwater. Absorption chillers, hot water boiler systems and operating procedures will be covered. Licensing agency is the American Society of Power Engineers.

POWENG-331
High Pressure Boilers
This course will prepare students to write the American Society of Power Engineers Facility Operating 2nd Class licensing exam. The course will also prepare students to recognize boiler terminology, and comprehend feedwater, steam, fuel and draft systems. Students will learn heat transfer principles using air heaters, shell and tube heat exchangers, steam and radiant heat. Basic electricity, boiler operation, water treatment programs, cooling towers, traps, strainers and burner management systems are also covered.

POWENG-332
High Pressure Boilers 2
See INFOline at matc.edu for information.

POWENG-333
Plant Maintenance and HVAC Basics
This is a hands-on class for repairing, maintaining and troubleshooting equipment found in commercial and industrial settings. Training includes belt drives, (alignment, tension and care of belts), chain drives, fans, couplings, motor alignments, bearing removal and installation, lubrication, solenoid valves, packing, gaskets, regulating valves, piping, air compressors, pumps and other mechanical fundamentals.

POWENG-334
Blueprint Reading for Power Engineering
Building blueprints are studied along with symbols and piping diagrams. Students will be able to locate and identify common building systems. Some mechanical assembly prints will also be covered.

POWENG-335
Instrumentation and Controls
This course covers a wide variety of boiler and HVAC controls. Thermostats, pneumatic and electronic controls, and building automation systems, pressure transmitters, thermocouples and gauges are just some of the instrumentation covered in this class.

PSYCHOLOGY/SOCIAL SCIENCE

PSYCH-188
Developmental Psychology
Concepts of normal growth and development are presented. A survey is made of the changing physical, physiological and psychological characteristics of individuals as they progress through the lifespan, from the neonatal period through adolescence, adulthood and old age. The common life crises during the lifespan are identified.

PSYCH-198
Introduction to Psychology
This introductory course in psychology is a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings.

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PSYCH – PTASST

### PSYCH-199

**Psychology of Human Relations**
Credits: 3

This course is a survey of psychological principles that assist in the understanding of interpersonal relations in the family and in the work setting. Motivation, emotion, learning, personality, cultural attitudes and healthy lifestyles are among topics considered with reference to effective individual and group behavior.

### PSYCH-220

**Psychology of Aging**
Credits: 3

A multidisciplinary, cross-cultural examination of aging, covering psychological, biological and sociological aspects of growing old. Prerequisite(s): PSYCH-199 or PSYCH-231.

### PSYCH-230

**Cross Cultural Psychology**
Credits: 3

This course is designed to provide a survey of psychological issues across a variety of cultures. Students will analyze how different aspects of culture affect human behavior, emotion and cognition, and consider a variety of issues that are relevant to understanding and relating to people who are culturally different from one another. Prerequisite(s): PSYCH-199, PSYCH-231 or PSYCH-238.

### PSYCH-231

**Introductory Psychology**
Credits: 3

This contemporary survey course presents the basic theory, concepts and methods being used in scientific psychology today. Selected topics include methodology, physiological psychology, development, motivation and emotion.

### PSYCH-232

**Abnormal Psychology**
Credits: 3

This course surveys systematically the essential features, possible causes, assessment and treatment of the various types of abnormal behavior from the viewpoint of the major theoretical perspectives in the field of abnormal psychology. Prerequisite(s): PSYCH-199 or PSYCH-231.

### PSYCH-233

**Social Psychology**
Credits: 3

This course deals with perception, attitudes, values, communication and roles with relation to the community. Various contemporary social problems are examined, including racism. Emphasis is given to the sociology and psychology concerned with groups. Prerequisite(s): PSYCH-199 or PSYCH-231.

### PSYCH-235

**Psychology of Adjustment**
Credits: 3

Adjustment and growth strategies are emphasized with accompanying psychological theories that discuss the nature of personality, its dynamics, development of self-identity, effectiveness of emotional expression, influential agents of socialization, leadership styles, interpersonal communications, maladjustment and treatment modalities.

### PSYCH-237

**Child Psychology**
Credits: 3

Students are introduced to children’s behavioral development from conception to adolescence. A comprehensive view of the child at each stage of growth is presented, with the main focus on the interaction of heredity, physical constitution, maturation and socio-environmental factors. Prerequisite(s): PSYCH-199 or PSYCH-231.

### PSYCH-238

**Lifespan Psychology**
Credits: 3

Concepts of normal growth and development are presented. A survey is made of the changing physical, physiological and psychological characteristics of individuals as they progress through the lifespan, from the neonatal period through adolescence, adulthood and old age. The common life crises during the lifespan are identified.

### PSYCH-240

**Health Psychology**
Credits: 3

Students examine how psychosocial and behavioral factors influence health and disease processes. Students will also analyze the relationship of individual and environmental factors to the development and management of specific diseases. Prerequisite(s): PSYCH-199, PSYCH-231, PSYCH-133 or PSYCH-228.

### PSYCH-351

**Human Relations Skills**
Credits: 2

Psychology has a valuable, practical application to the everyday business of living. The objectives of this course are: 1) to supply an understanding of motives underlying human behavior; 2) to help students develop adequate methods of assisting themselves and others in handling problem situations; and 3) to demonstrate the application of human relations skills to home, family, social, or work experiences.

### PHYSICAL THERAPY ASSISTANT

#### PTASST-101

**Orientation to Physical Therapist Assistant (PTA)**
Credits: 2

This course provides an introduction to the profession of physical therapy and the roles of the physical therapist and PTA, emphasizing ethical and legal practice. Paraprofessional communication skills and cultural diversity are identified and related to clinical practice. An overview of medical terminology and common pathologies are also related to physical therapy practice.

#### PTASST-106

**Physical Therapist Assisting 2**
Credits: 4

This course provides an overview of pathologies of the musculoskeletal, neurological, respiratory and integumentary systems through a lecture/lab format. Initial evaluation, impairments, functional limitations and plan of care are identified for various pathologies. Therapeutic exercises are explained with application of techniques. The theory and application of electrotherapeutic modalities is explained and demonstrated. Prerequisite(s): PTASST-101 and PTASST-105.

#### PTASST-107

**Pediatric Physical Therapist Assisting**
Credits: 2

This course presents normal and abnormal growth and development. Students are introduced to pediatric pathologies and treatment plans for pediatric patients with these pathologies. Students learn techniques that are routinely used in the treatment of pediatric patients including therapeutic handling, sensory integration, therapeutic positioning techniques, and the use of splinting and adaptive equipment. Students are introduced to systems of pediatric physical therapy delivery and discuss the impact of the special needs child on the entire family. Prerequisite(s): PTASST-106, PTASST-116, and completion of or concurrent registration in PTASST-128.

#### PTASST-108

**Professional Issues and Practices for the Physical Therapist Assistant**
Credits: 1

This course provides an overview of ethical and legal requirements of physical therapy practice. Healthcare systems and reimbursement, utilization review, and continuous quality improvement in delivery of physical therapy services are explained. Professional issues affecting the current practice of the PT/PTA are examined. Prerequisite(s): PTASST-116.

#### PTASST-111

**Advanced Therapeutic Exercise, Physiology and Techniques for the PTA**
Credits: 2

This course will advance the student’s knowledge of cardiopulmonary function, cardiopulmonary rehabilitation techniques and advanced exercise techniques. Prerequisite(s): PTASST-127.

#### PTASST-114

**Clinical Seminar**
Credits: 1

This course will discuss student clinical performance as assessed by the Clinical Performance Instrument of the APTA. Students will identify individual learning styles and implement self-assessment of their performance in clinic through the CPI, reflective clinical journals and care plan presentations. Ethical and legal practice in the clinical setting will be discussed.

#### PTASST-115

**Clinical Physical Therapist Assisting 1**
Credits: 2

Students apply physical therapist assisting in a clinical setting based on performance, knowledge and skills learned in physical therapist assisting courses and PTASST-101 Orientation to Physical Therapist Assistant. Prerequisite(s): PTASST-106 and PTASST-127.
PTASST-116 Credits: 3
Clinical Physical Therapist Assisting 2
Students apply physical therapist assisting in a clinical setting based on performance, knowledge and skills learned in the physical therapist assisting courses, PTASST-106 Orientation to Physical Therapist Assistant and PTASST-115 Clinical Physical Therapist Assisting 1. Prerequisite(s): PTASST-106, PTASST-115 and PTASST-127.

PTASST-117 Credits: 5
Clinical Physical Therapist Assisting 3
Students apply all physical therapist assistant patient care techniques on an extensive basis in various physical therapy departments, during a full-time, eight-week clinical affiliation. Prerequisite(s): PTASST-107, PTASST-108, PTASST-110, PTASST-115, PTASST-116 and PTASST-128.

PTASST-126 Credits: 3
Musculoskeletal Anatomy
Study of major muscle groups, innervations, skeletal anatomy and joint structure, and their relationship to exercise and prevention of injury in sports and everyday activities. Prerequisite(s): NATSCI-103.

PTASST-127 Credits: 4
Kinesiology for Physical Therapist Assistants
Kinesiology is the study of human motion. Specific emphasis is placed on the muscles of the human body and other forces that affect motion including gravity, external resistance and friction. Principles of physics, algebra, geometry, anatomy and physiology are combined to understand how muscles create human motion. A detailed examination of osteology and arthrology is necessary to understand muscle actions and joint mechanics. The study of goniometry, manual muscle testing and common biomechanical pathologies are also covered in this course. Prerequisite(s): PTASST-101, PTASST-105, NATSCI-103, and completion of or concurrent registration in PTASST-126.

PTASST-128 Credits: 2
Applied Kinesiology
This course presents the kinesiology of major body segments: shoulder, girdle, trunk and the pelvis. Therapeutic interventions for pathologies of these segments are reviewed and demonstrated. Normal and abnormal gait is analyzed related to functional activity and musculoskeletal and neurological pathologies. Prerequisite(s): PTASST-127 and completion of or concurrent registration in PTASST-107.

PTASST-138 Credits: 3
PTA Kinesiology 1
Introduces basic principles of musculoskeletal anatomy, kinematics and clinical assessment. Students locate and identify muscles, joints and other landmarks of the lower quadrant in addition to assessing range of motion and strength. Prerequisite(s): Admission to Physical Therapy Assistant (10-524-1) program.

PTASST-139 Credits: 4
PTA Patient Interventions
This is an introduction to basic skills and physical therapy interventions performed by the physical therapist assistant. Prerequisite(s): Must be admitted to Physical Therapist Assistant program (10-524-1).

PTASST-140 Credits: 2
PTA Professional Issues 1
This course introduces the history and development of the physical therapy program, legal and ethical issues, the interdisciplinary healthcare team, and professional communications skills. Prerequisite(s): Must be admitted to Physical Therapist Assistant program (10-524-1).

PTASST-141 Credits: 4
PTA Kinesiology 2
Applies basic principles from PTASST-138 to the axial skeleton and upper quadrant including location and identification of muscles, joints and other landmarks; assess range of motion and strength of the axial skeleton and upper quadrant; integrate analysis of posture and gait. Prerequisite(s): PTASST-138, PTASST-139 and PTASST-140.

PTASST-142 Credits: 3
PTA Therapeutic Exercise
Course will provide instruction on the implementation of therapeutic exercise principles. Students will implement, educate, adapt and assess responses to different therapeutic exercises. Prerequisite(s): PTASST-138 and either NATSCI-177 or both NATSCI-201 and NATSCI-202.

PTASST-143 Credits: 4
PTA Therapeutic Modalities
Develops the knowledge and technical skills necessary to perform numerous therapeutic modalities likely to be utilized by a PTA. Prerequisite(s): PTASST-139.

PTASST-144 Credits: 4
PTA Principles of Neuromuscular Rehabilitation
Integrates concepts of neuromuscular pathologies, physical therapy interventions and data collection in the treatment of patients. Prerequisite(s): PTASST-139, PTASST-141 and PTASST-142.

PTASST-145 Credits: 4
PTA Principles of Musculoskeletal Rehabilitation
Integrates concepts of musculoskeletal pathologies, physical therapy interventions and data collection in patient treatment. Prerequisite(s): PTASST-138 and PTASST-139.

PTASST-146 Credits: 3
PTA Management of Cardiopulmonary and Integumentary Conditions
Integrates concepts of cardiopulmonary and integumentary pathologies, physical therapy interventions and data collection in patient treatment. Prerequisite(s): PTASST-139, PTASST-141 and PTASST-142.

PTASST-147 Credits: 2
PTA Clinical Practice 1
This course provides a part-time clinical experience to apply foundational elements, knowledge and technical skills pertinent to physical therapy practice. Prerequisite(s): Completion of or concurrent enrollment in PTASST-139 and PTASST-141.

PTASST-148 Credits: 3
PTA Clinical Practice 2
Provides another part-time clinical experience to apply foundational elements, knowledge and technical skills required of the entry-level physical therapist assistant in various practice settings. Prerequisite(s): PTASST-147.

PTASST-149 Credits: 2
PTA Rehabilitation Across the Lifespan
A capstone course that integrates concepts of pathology, physical therapy interventions and data collection across the lifespan. In addition to the PTA’s role in health, wellness and prevention; reintegration and physical therapy interventions for special patient populations will be addressed. Prerequisite(s): PTASST-144, PTASST-145, PTASST-146 and PTASST-148.

PTASST-150 Credits: 2
PTA Professional Issues 2
Incorporates professional development, advanced legal and ethical issues, healthcare management and administration, as well as further development of professional communications strategies. Prerequisite(s): PTASST-140 and PTASST-148.

PTASST-151 Credits: 5
PTA Clinical Practice 3
Provides a full-time clinical experience to apply foundational elements, knowledge and technical skills required of the entry-level physical therapist assistant in various practice settings. Prerequisite(s): PTASST-144, PTASST-145, PTASST-146 and PTASST-148.

QUALITY ENGINEERING/INDUSTRIAL MANUFACTURING TECHNOLOGY

QETECH-112 Credits: 1
Engineer Specifics Drawing 1
This course covers the basic principles essential for visualization and training in the interpretation of blueprints and freehand sketches of simpler machine parts. Emphasis is placed upon orthographic projection principles and pictorial drawing.

QETECH-114 Credits: 1
Metrology 1
Students are introduced to inspection terminology, measuring instruments, instrument handling and measuring techniques. Along with hands-on use of each measuring instrument, the course provides the student with criteria for proper instrument selection based on part print requirements.

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will include further statistical analysis and efficiency improvement through the use of implementing quality, process, and business Six Sigma is a strategic approach for (define, measure, analyze, improve, control). This course provides students with skills and capability, and gage R&R studies. Mapping, investigative tools, process analysis project management, team dynamics, process areas include problem and metric definition, efficiency improvement through the use of current waste disposal practices, and investigate alternative energy options.

QETECH-138 Credits: 3
Introduction to Quality Engineering
Studie...
This begins-level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting.

**Radiography Clinical 2**

This second-level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting.

**Radiography Clinical 3**

This third-level clinical course prepares radiography students to perform radiologic procedures on patients with radioactive equipment and direction. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting.

**Radiography Clinical 4**

This fourth-level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

**Radiography Clinical 5**

This fourth-level clinical course prepares radiography students to perform radiologic procedures on patients with some supervision. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

**Radiography Clinical 6**

This final clinical course requires students to integrate and apply all knowledge learned in previous courses to the production of high-quality radiographs in the clinical setting. Students apply radiation protection and standard precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.
RBUS – RESPC DEGREE/DIPLOMA COURSE DESCRIPTIONS

RBUS-180 Credits: 1
Business Career Planning
This course focuses on personal and professional preparation for one's career. It covers self-esteem/value clarification (understanding your behavior), human relations (creative problem-solving and decision-making), communication skills (oral and written), time management (setting priorities and organizational techniques) and career preparation (gaining confidence, the power of positive thinking and the job search). Through class lecture, films, handouts, guest speakers and field trips, overall guidelines are provided for total professional development.

RENEWABLE ENERGY - ELECTRICITY
RENEW-150 Credits: 2
Introduction to Photovoltaics
This course serves as an introduction to the concept of energy, how it is stored, produced, transported and used. The course culminates with an introduction to how electricity is produced from solar energy.

RENEW-181 Credits: 3
Wind Power I
This course is an introduction to the basics of wind energy systems. The course combines lectures and tours of specific sites within wind energy systems. The student will be introduced to the process of capturing wind energy and converting the energy to electrical energy. Topics will include atmospheric causes for wind, wind turbines, siting and inverters. The final project will include an evaluation and/or design of a wind energy system as either a home-scale installation or utility-scale wind farm.

RENEW-182 Credits: 3
Wind Power II
This course is a continuation of RENEW-181 Wind Power I; it combines lectures and labs related to the applications of wind power. Prerequisite(s): RENEW-181.

RENEW-300 Credits: 1
Solar Thermal Energy Design
This course introduces students to heat energy supplied by the sun. Passive heating and cooling systems are focused along with solar collectors, pumps, and heat exchangers. Students will learn about efficiencies involving hot water for portable use, as well as building heat. A large, solar, hot water heating system located at MATC’s Oak Creek Campus will be used extensively by students for collecting data, and calculating the amount of BTUs collected and used. Carbon dioxide offset also will be studied in this class.

RESPRATIONAL THERAPIST
RESPC-111 Credits: 3
Respiratory Survey
This course examines the role of the respiratory therapist within the healthcare community. It reviews the ethical, legal and regulatory principles that guide practice across diverse populations. Introductory patient assessment and critical thinking processes used in the development of respiratory care plans are explored. Prerequisite(s): Admission to Respiratory Therapist program (10-515-1).

RESPC-112 Credits: 2
Respiratory Airway Management
Provides a comprehensive exploration of airway management concepts and skills. Prerequisite(s): Completion of or currently enrolled in RESPC-174.

RESPC-113 Credits: 3
Respiratory Life Support
Focus is on management of adult ventilator support. Prerequisite(s): RESPC-172 and RESPC-175 and completion of or currently enrolled in RESPC-112.

RESPC-114 Credits: 3
Respiratory Care Registry Review
This course provides respiratory care practitioners with a review of essential knowledge and techniques required for the advanced practitioner written registry and clinical simulation examinations. Prerequisite(s): RESPC-170.

RESPC-171 Credits: 3
Respiratory Therapeutics 1
Introduces the topics of medical gas administration, and humidity and aerosol therapy. The student will apply physics, math and patient assessment concepts to oxygen, aerosol and humidity therapy. Prerequisite(s): Admission to the Respiratory Therapist program (10-515-1), and completion of or currently enrolled in RESPC-111 and NATSCI-177 or NATSCI-202.

RESPC-172 Credits: 3
Respiratory Therapeutics 2
This course examines the role of the respiratory therapist within the healthcare community. It reviews the ethical, legal and regulatory principles that guide practice across diverse populations. Prerequisite(s): Admission to Respiratory Therapist program (10-515-1) and completion of or currently enrolled in RESPC-171.
RESPC – RLEST

DEGREE/DIPLOMA COURSE DESCRIPTIONS

RESPC-173  
Respiratory Pharmacology  
Credits: 3  
Examines basic pharmacology principles, drug dosage and calculations, as well as medications for inhalation including mucolytics, bronchodilators and anti-inflammatory agents. Also includes cardiac drugs, anesthetic drugs, neuromuscular blockers and antimicrobials. Prerequisite(s): NATSCI-177 or NATSCI-202.

RESPC-174  
Respiratory/Cardiac Physiology  
Credits: 3  
Provides the student with an in-depth knowledge of the structure and function of the respiratory and circulatory systems necessary to function as a competent respiratory therapist. Prerequisite(s): NATSCI-177 or NATSCI-202, and admitted to the Respiratory Therapist Program (10-515-1).

RESPC-175  
Respiratory Clinical 1  
Credits: 2  
Introduces respiratory therapy practice in the hospital setting. Includes the development of skills such as basic therapeutics, patient assessment, medical record review, safety practices, patient interaction and communication. This course includes the complete program competency list. At the completion of this clinical, students must demonstrate competence in a minimum of five (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Note: Competencies with an R are required, competencies with an S are required but may be simulated, competencies with an O are optional. Prerequisite(s): RESPC-111, RESPC-172, RESPC-173, RESPC-174, and admitted to the Respiratory Therapist program (10-515-1).

RESPC-176  
Respiratory Disease  
Credits: 3  
Exploration of signs, symptoms, causes, progression and treatment of obstructive, restrictive and infectious diseases or disorders of the body that affect the respiratory systems. Prerequisite(s): RESPC-170.

RESPC-177  
Respiratory Life Support Technology  
Credits: 4  
This course focuses on adult respiratory critical care, which includes the management of mechanical ventilation and artificial airways. Prerequisite(s): RESPC-172, RESPC-174, RESPC-175.

RESPC-178  
Respiratory Clinical 2  
Credits: 3  
Continued development of respiratory therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, students must demonstrate competence in a minimum of 12 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Note: Competencies with an R are required, competencies with an S are required but may be simulated, competencies with an O are optional. Prerequisite(s): RESPC-179 and completion of or currently enrolled in RESPC-113.

RESPC-179  
Respiratory Clinical 3  
Credits: 3  
Continued development of respiratory therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, students must demonstrate competence in a minimum of 19 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Note: Competencies with an R are required, competencies with an S are required but may be simulated, competencies with an O are optional. Prerequisite(s): RESPC-178 and admitted to Respiratory Therapist Program (10-515-1).

RESPC-180  
Respiratory Neonatal/Pediatrics Care  
Credits: 2  
This course provides a comprehensive orientation to the field of neonatal and pediatric respiratory care to include fetal development, birth, neonatal physiology, pulmonary dynamics, abnormal cardiopulmonary conditions, diseases, noninvasive and invasive therapeutic interventions. Prerequisite(s): Admitted to the Respiratory Therapist program (10-515-1).

RESPC-181  
Respiratory/Clinical Diagnostics  
Credits: 3  
Advanced invasive and noninvasive diagnostic cardiopulmonary procedures including pulmonary function, hemodynamics and rescue medicine. Prerequisite(s): RESPC-173 and completion of or currently registered for RESPC-113 and RESPC-176, and admission to Respiratory Therapist program (10-515-1).

RESPC-182  
Respiratory Clinical 4  
Credits: 3  
Continued development of respiratory therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, students must demonstrate competence in a minimum of 26 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Note: Competencies with an R are required, competencies with an S are required but may be simulated, competencies with an O are optional. Prerequisite(s): Admission to Respiratory Therapist program (10-515-1) and RESPC-182.

RESPC-183  
Respiratory Clinical 5  
Credits: 3  
Focuses on the completion of respiratory therapy competencies and transition to employment. This course includes the complete program competency list. At the completion of this clinical, students must demonstrate competence in all of the required and required/simulated competencies. The instructor may identify specific competencies to be addressed during this clinical. Note: Competencies with an R are required, competencies with an S are required but may be simulated, competencies with an O are optional. Prerequisite(s): Admission to Respiratory Therapist program (10-515-1) and RESPC-182.

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RLDST – SOCSCI DEGREE/DIPLOMA COURSE DESCRIPTIONS

RLDST-182 Credits: 3
Real Estate Law
This course, in addition to principles of Real Estate (RLDST-180), will satisfy the educational requirements for the State of Wisconsin Real Estate Salesperson exam. The course will cover the duties and responsibilities of a real estate professional. Disclosure requirements, all forms, contracts, addenda, amendments, deed options and land contracts will be covered thoroughly. Closing a transaction, discrimination, landlord/tenant law and environmental issues will also be covered.

RLDST-183 Credits: 3
Real Estate Broker Preparation
This course satisfies the educational requirements for the State of Wisconsin Real Estate Brokers Exam. The course will focus on closing a transaction and the responsibilities of a broker including employer and human resources, supervision and leadership, managing liability and risk, and disclosure duties. Also covers real estate as a business, trust accounts, special issues from Starker Exchanges, auctions, foreclosures and short sales. Instruction also includes familiarity with all of the forms and contract options.

RLDST-184 Credits: 3
Real Estate Mortgage Processing
The fundamentals of mortgage lending and lending terminology are covered along with the sources of mortgage money, from conventional to governmental financing. Mortgage lending math, loan documents, government agencies, and the secondary mortgage market are also examined. Government controls from the HUD-1 to the RESPA rules are covered. This is an ever-changing industry with many opportunities and complications.

RLDST-185 Credits: 3
Real Estate Investment Principles
Real estate investment fundamentals are explained. Types of investment real estate, investment objectives, and the investment process are discussed. Investment techniques are analyzed, from the gross rent multiplier to the internal rate of return and cap rates. You will be able to compare properties, investment opportunities, or limitations.

RLDST-186 Credits: 3
Real Estate Sales Tools
Upon completion, students will have a toolbox to help launch a successful career in real estate. The course will review the basics of marketing for real estate success including using the right words both in print and in person, using technology effectively, and ultimately creating a basic marketing plan for success.

RLDST-187 Credits: 3
Broker Management
This course plus RLDST-183 Broker Preparation will meet the requirements for the Wisconsin licensing as a real estate broker.

The course will cover in depth all Wisconsin real estate forms, contracts and documents. A heavy focus will be on the management of a real estate brokerage business. This includes business management, financial management, office management, and employee or agent management. Also covered in depth are the duties of a broker and ethics related to the profession. This course will look at these components considering industry standards and regulatory requirements. Prerequisite(s): RLDST-180 and RLDST-182.

RLDST-188 Credits: 3
Listing Selling and Sales Tools
Broker/salesperson relationships and office/listing procedures are studied in this course. Client responsibility and property information disclosure are examined. Listing contract, offer to purchase, advertising sales plans/presentations are also reviewed. Current sales and marketing of real estate are reviewed.

RLDST-189 Credits: 3
Introduction to Home Inspection
This course is designed to meet the need for inspection knowledge for the real estate market, including inspectors, realtor buyers and sellers. The course covers the physical components of a home including soils, foundations, structure, plumbing, electrical, heating, venting and air conditioning. Public policy, procedures and report writing are also addressed in this class.

RLDST-190 Credits: 3
Introduction to Property Management
Property management is discussed in regard to leases, rent scheduling, selling space and renting techniques. Tenant selection, supervision and relations with owners are covered, along with purchasing, budgets, reports, and legal and professional relationships. Also addressed is the industry of providing property management services to both residential and commercial clients.

RLDST-191 Credits: 3
Residential Plumbing for Inspectors
This course is designed to meet the need for inspection knowledge for the real estate market, including inspectors, realtor buyers and sellers. The course covers the physical components of a home including soils, foundations, structure, plumbing, electrical, heating, venting and air conditioning. Public policy, procedures and report writing are also addressed in this class.

RLDST-192 Credits: 3
Uniform Dwelling Code Construction for Inspectors
This course focuses on the uniform dwelling code of the Wisconsin Department of Commerce and prepares students for the Department of Commerce Uniform Dwelling Code – Heating, Ventilating and Air Conditioning Inspector Certification Exam. The material covered will include service sizing, electrical boxes and distribution systems, as well as shock resistance. Prerequisite(s): RLDST-189.

RLDST-193 Credits: 3
Residential Electrical for Inspectors
This course follows the requirements of the national electrical code. It provides students with the required knowledge to take the State of Wisconsin Uniform Dwelling Code Electrical Inspector Exam. The material covered will include service sizing, electrical boxes and distribution systems, as well as shock resistance. Prerequisite(s): RLDST-189.

RLDST-194 Credits: 3
UDC Heating, Venting and Air Conditioning for Inspectors
This course focuses on the uniform dwelling code of the Wisconsin Department of Commerce and prepares students for the Department of Commerce Uniform Dwelling Code – Heating, Ventilating and Air Conditioning Inspector Certification Exam. Prerequisite(s): RLDST-189.

RLDST-197 Credits: 3
Commercial Building Code for Inspectors
This course focuses on the Wisconsin commercial building code of the Wisconsin Department of Commerce, and it will prepare the students for the Department of Commerce Commercial Building Inspector Certification Exam.

RLDST-198 Credits: 3
Residential Structures for Inspectors
This course provides students with a working knowledge of calculations required to size structural members used in construction of residential structures. Students become proficient in calculating loads; drawing loading, shear and movement diagrams; determining deflection and sizing beams, columns and footings. Prerequisite(s): RLDST-189.

SOCIAL SCIENCE

SOCSCI-149 Credits: 3
Ethics for the Professions
This course surveys the range of theories and positions relevant in ethics today. Critical discussions cover a range of views and approaches to the ethical dilemmas of our world in health, human services, business and industry. Philosophical reflection, clarification and acceptance of all views will be sought.

SOCSCI-172 Credits: 3
Introduction to Diversity Studies
An interdisciplinary course that uses basic social science vocabulary to examine the history and impact of transmigration and colonialism, and principles of intercultural communication, while promoting respectful interactions in diverse contexts. Topics also include: majority/minority relations, ageism, sexism, sexual orientation and gender differences, and the disabled and the American Disability Act (ADA). Ethnic relations also are studied in global and comparative perspectives.
### SOCSI-197 Contemporary American Society
Credits: 3
This course examines the network of interdependent social systems that affect students as employees, family members and citizens. The study of institutions and exploration of contemporary issues and trends expands students’ use of thinking skills, enabling them to advocate positions and participate fully in a democracy.

### SOCSI-200 Introduction to Ethical Issues
Credits: 3
This course will survey the range of theories and principles that are relevant in ethical discussion and debate today. Thoughtful exploration and examination will address the range of moral views and approaches that are pertinent to ethical dilemmas in both personal and public life; the class also examines issues from community or local interest to the larger world-view.

### SOCSI-203 Introduction to Sociology
Credits: 3
This is the study of social relationships with emphasis on groups and the structure of society. The course details the various social processes and concepts that shape behavior, analyzing such phenomena as culture, roles, groups, stratification, deviance, race, population and social change.

### SOCSI-204 Marriage and the Family
Credits: 3
This course is designed to make students aware of relationships and marriage in contemporary society. The basic functions of the family are studied, and sociological and psychological principles are applied to family living.

### SOCSI-205 Social Problems
Credits: 3
An interdisciplinary course that, using basic social science vocabulary, examines the history and impact of transmigration and colonialism, and the principles of intercultural communication, while promoting respectful interactions in diverse contexts. Topics also include: majority/minority relations, ageism, sexism, sexual orientation and gender differences, and the disabled and the American Disability Act (ADA). Ethnic relations are studied in global and comparative perspectives.

### SOCSI-206 Introduction to Cultural Anthropology
Credits: 3
Students survey the broad field of anthropology with a strong emphasis on culture and its expressions in human societies. Cross-cultural comparison and descriptions based on fieldwork are utilized in order to understand human behavior realistically and without bias.

### SOCSI-207 Introduction to Criminology
Credits: 3
An analysis is made of criminal behavior. Theories of crime causation are examined, as well as crime typologies and crime statistics. The course provides an overview of criminal justice agencies.

### SOCSI-209 Sociology of Religion
Credits: 3
This is an introductory course in the study of religions from the viewpoint of the social sciences. Religion is presented as a universal function of human societies and as an aspect of group behavior.

### SOCSI-210 Death and Dying
Credits: 3
This course will concentrate upon the historical and sociological background of the customs and practices related to death and dying in the United States and other countries; the emotional reactions and adjustments to death and dying; and identification of services and resources.

### SOCSI-214 Gender and Society
Credits: 3
The social roles that are ascribed to females and males within society, and the social behavior expected within the constraints of femininity and masculinity, are explored. The course also looks at the social processes of creating, maintaining and changing sex/gender roles through the analysis of social institutions and social structures, using theoretical and experiential perspectives. Students will become familiar with the social forces that help construct personal identity and consciousness and that shape our belief systems as gendered beings. Gender will be explored on the personal level, the societal level and the global level, with cross-cultural perspectives, as well as historical roots of gender, being presented. Sociological theories will be considered as explanatory tools for understanding the impact of gender and its resulting imperatives, responsibilities and problems.

### SOCSI-217 Valuing Diversity
Credits: 3
In this course emphasis is placed on common elements among individuals and groups of people. Programs provide sociological lessons dealing with race, social class, age, gender, sexual orientation and the sociology of minorities.

### SOCSI-221 American National Government and Politics Today
Credits: 3
This introductory course in political science is concerned with the American political process and its institutions: the Constitution, civil rights and freedoms, Congress, the presidency, federal powers and policy-making, the federal judiciary and the election process in American political cultures.

### SOCSI-222 American State and Local Government
Credits: 3
This is a comprehensive course that deals with the organization and functions of state and local governments; state executive, legislative and judicial branches; state constitutions; contemporary intergovernmental relations; differences in regional, rural and urban governments; and the political process at the grassroots level.

### SOCSI-224 Peoples and Cultures of the World
Credits: 3
The course will introduce students to different cultures across the world. It will specifically examine human behaviors and the larger society cross-culturally. The course will be organized thematically, and students will explore various cross-cultural applications of social life in one semester. Possible themes of social life include AIDS and society, culture and international development, globalization and society, technology and culture, religion and society, kinship, marriage, art and culture, nationalism, children and society.

### SOCSI-229 Problems and Programs of the City
Credits: 3
This course studies contemporary American urban problems, opportunities and policy alternatives from political and economic perspectives. It looks into the evolution of urban society and its impact on housing, education, unemployment, poverty and race, as well as the suburbanization of America.

### SOCSI-236 Juvenile Delinquency
Credits: 3
The history, philosophy and theoretical framework of juvenile delinquency and the justice system for juveniles is surveyed. Psychological, sociological, biological and environmental factors influencing juvenile delinquency are studied. Significant statutes and Supreme Court decisions are analyzed, along with significant research in ethnicity and gender.

### SOCSI-241 World Geography
Credits: 3
This introductory course examines the major regions of the world and their economic, cultural, social and political patterns in relation to the physical resources.

### SOCSI-242 African-American Social Thought and Culture
Credits: 3
This is an introduction to the diversity of African-American social thought and culture. The course includes exploration into the ideologies of prominent African-American social thinkers and sociologists, and the underlying structure and patterns of African-American culture.
SPEECH

SPEECH-201 Credits: 3
Elements of Speech 1
The purpose of this course is the development of speaking skills. Stress is placed upon speech content, organization and delivery. Growth in poise and confidence is a major goal of this course.

SPEECH-203 Credits: 3
Interpersonal Communication
This course applies the theory and principles of one-to-one communication to personal and professional relationships. Topics include gender, self-awareness, verbal and nonverbal communication, conflict management, assertiveness and perception.

SPEECH-206 Credits: 3
Intercultural Communication
The course offers an opportunity to learn how to identify and appreciate cultural differences in terms of people's communication styles. Students also will improve their ability to communicate, personally and professionally, with others of different cultures.

SPEECH-212 Credits: 3
Introduction to Theater
This course examines the history and development of theater in its various forms. Primarily the course examines the technical and artistic elements of theater to provide students with a general understanding and appreciation of this art form. Students attend and critique several theater productions.

SURGICAL TECHNOLOGIST

SURGT-101 Credits: 1
Surgical Technologist Career Exploration
Through lecture and lab, this course is designed to provide an exploration of the surgical technology field. During the class, students develop an understanding of healthcare practices required during a surgical intervention. Students will also take part in hands-on activities and learn from surgical technology experts. Students leave the course with information needed to make an informed decision about entering the surgical technology field.

SURGT-125 Credits: 4
Introduction to Surgical Technology
This course provides the foundational knowledge of the occupational environment. Principles of sterilization and disinfection are learned. Surgical instruments are introduced. Preoperative patient care concepts are simulated. Lab practice is included. Prerequisite(s): NATSCI-197 with minimum grade C, completion of or concurrent registration in HEALTH-101, and admission to the Surgical Technology program (10-512-1).

SURGT-126 Credits: 4
Surgical Technology Fundamentals 1
This course focuses on preparing the patient and operating room for surgery. Principles of sterile technique are emphasized as the student moves into the scrub role. Lab practice is included. Prerequisite(s): Must be admitted to Surgical Technology (10-512-1), SURGT-125 and completion of or concurrent registration in SURGT-127.

SURGT-127 Credits: 2
Exploring Surgical Issues
This course explores a variety of issues related to surgical technology. Emphasis is placed on becoming a professional member of the surgical team. Prerequisite(s): Must be admitted to Surgical Technology program (10-512-1), completion or concurrent registration in SURGT-125.

SURGT-128 Credits: 4
Surgical Technology Fundamentals 2
This course focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab and/or clinical practice included. Prerequisite(s): HEALTH-101 with minimum grade C, SURGT-126, SURGT-127, and completion of or concurrent registration in SURGT-129.

SURGT-129 Credits: 2
Surgical Pharmacology
This course is a basic study of drug classifications, care and handling of drugs and solutions, application of mathematical principles in dosage calculations, terminology related to pharmacology, anesthesia, and drugs used in surgery. Prerequisite(s): Must be admitted to Surgical Technology program (10-512-1), NATSCI-197 with minimum grade C, and either NATSCI-179 or NATSCI-202 with minimum grade C, and completion of or concurrent registration in SURGT-125.

SURGT-130 Credits: 2
Surgical Skills Application
This course provides a transition from the academic to the clinical setting. Learners integrate the surgical technologist skills as they apply to various surgical procedures. Prerequisite(s): Must be admitted to Surgical Technology program (10-512-1), completion of or concurrent registration in SURGT-128.

SURGT-137 Credits: 4
ST Clinical Practice 1
Students apply basic surgical theories, principles and procedural techniques in the operating room. They begin to function as team members under the guidance of the instructor and authorized clinical personnel. Prerequisite(s): SURGT-129, SURGT-130, and completion of or concurrent registration in SURGT-140.

SURGT-138 Credits: 4
ST Clinical Practice 2
Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures. Prerequisite(s): SURGT-137, SURGT-140, and completion of or concurrent registration in SURGT-141.

SURGT-139 Credits: 4
ST Clinical Practice 3
During this course, the student functions relatively independently. While transitioning from student to prospective employee, skills performed are commensurate with those of an entry-level surgical technologist. Prerequisite(s): SURGT-138, SURGT-141, and completion of or concurrent registration in SURGT-142.

SURGT-140 Credits: 2
Surgical Interventions 1A
This course is the first of two courses that provide the foundational knowledge of surgical core and specialty procedures. It examines the pathophysiology, diagnostic interventions, health sciences and surgical techniques for a variety of procedures. Prerequisite(s): SURGT-128 and SURGT-130.

SURGT-141 Credits: 2
Surgical Interventions 1B
This course is the second of two courses that provide the foundational knowledge of surgical core and specialty procedures. It examines the pathophysiology, diagnostic interventions, health sciences and surgical techniques for a variety of procedures. Prerequisite(s): SURGT-140.

SURGT-142 Credits: 4
Surgical Interventions II
Expands knowledge of core and specialty surgical procedures by incorporating pathophysiology, diagnostic interventions, health sciences and surgical techniques. Prerequisite(s): SURGT-137 and SURGT-141.
SUSTAINABILITY

SUSTN-100 Credits: 3
Sustainable Facilities Operations
This is an accelerated course that covers the overall aspects of what it takes to operate a building in a sustainable fashion in today’s complex world. A case is made for sustainability, social responsibility and environmental responsibility. The triple bottom line, Lean, Six Sigma, CMMS, LEED, and overall sustainable operations are covered and part of a class project. Students are encouraged to use a project from their work or of personal interest to them. Course requires computer skills in word processing, PowerPoint and spreadsheet.

SUSTN-101 Credits: 3
Environmental Control Technician Sustainable Energy Tech Practices
This course prepares the student to upgrade, operate and maintain energy management systems, and related software and components. The controls used in this course are the latest technologies available on the market. While the course focuses on the technological aspects of an energy controls technician, it also addresses customer service and proposal writing.

SUSTN-102 Credits: 3
Reporting and Presenting Systems Performances
This is an accelerated course. Designing buildings, and maintaining and operating sustainable (green) buildings requires basic measurement and reporting skills. This course emphasizes basic performance parameters of buildings and teaches the basic computer skills (spreadsheets, word processing, PowerPoint, and use of Blackboard are required) to be successful in future sustainability courses and in the sustainable building field. Basics of water, energy, material and waste related to buildings will be discussed. Basics of how a building operates, and some tools used to assist with optimizing sustainable performance will be discussed.

SUSTN-103 Credits: 3
Commissioning Process for Sustainable Energy Use
This is an accelerated course that takes students through the commissioning process and specifically explains the Cx Process. Topics include the benefits of Cx and why it is important. Sample documents developed by students. When complete, participants will have a thorough understanding of the Cx certifications. Course requires knowledge of building mechanical systems and good computer skills (word processing, PowerPoint and spreadsheets).

SUSTN-104 Credits: 3
Energy Auditing and Managing Energy Use
This is an accelerated course that takes students through the energy auditing process. Topics include gas, electric and water billing analysis, ASHRAE levels of audits, energy analysis of savings (including Energy Star), developing the energy audit report and presenting it to clients. Actual building(s) are audited and used for students to develop reports. Students are encouraged to use a facility they have a connection to, such as where they work. Course requires computer skills in word processing, PowerPoint and spreadsheets.

SUSTN-105 Credits: 3
The LEED Rating System
This is an eight-week accelerated course that explores the LEED rating system, how it is being used to drive sustainable buildings, and prepares students for taking the LEED Accredited Professional exam.

SUSTN-106 Credits: 3
Measurement and Verification
This course covers different methods of measuring and verifying energy savings. Emphasis is on the International Performance Measurement and Verification Protocols (IPMVP) and includes hands-on MandV using kWh meters, energy management systems and data loggers. Information covered will prepare the learner to take the national certification exam for measurement and verification. Energy managers know the importance of verifying that projects are working, including promoting success within and outside organizations. This course covers the simple to complex methodologies for measuring success so that systems and projects are documented and managed.

SUSTN-108 Credits: 3
Energy Modeling With eQuest
The course explores fundamental questions through lectures and hands-on classroom work, along with the use of eQuest energy modeling software wizards, leading to understanding buildings as systems that use energy in interconnecting ways. This is an eight-week accelerated course that moves at a fast pace. Prerequisite(s): SUSTN-104.

SUSTN-109 Credits: 3
Intelligent Lighting Systems
This accelerated course is set up to provide information on cutting-edge lighting technology and controls. There is a review of lighting concepts followed by an IES (Illuminating Engineers Society) controls course, discussion on controls and protocols, and hands-on programming/adjustment of existing lighting control systems. Current technology and the future direction of lighting will be discussed. Lighting controls will be emphasized, including state-of-the-art wireless controls accessed through the internet. The course will also cover daylighting controls, scheduling and occupancy. Course requires computer skills in word processing, PowerPoint and spreadsheets.

TOOL AND DIE MAKING

TDMK-360 Credits: 1
Basic Die Making Technology
This course introduces students to the theories necessary to properly construct basic stamping and forming of dies. Part terminology and function are integrated into the format via lecture and discussion.

TDMK-361 Credits: 1
Advanced Die Making Technology
This course is a continuation of the previous course, TDMK-360. It explores the theories necessary for proper die construction of more advanced progressive, inverted and compound dies. Prerequisite(s): TDMK-360.

TDMK-362 Credits: 1
Cavity Die Technology
This course introduces the student to the theories involved in proper mold construction in the three major areas of mold building: plastics (thermoset and thermoplastic), diecasting and rubber molds.

TDMK-366 Credits: 1
CNC Programming 2
Instructs students in techniques necessary for proper construction and transmission of a computerized numerical control (CNC) program via a computer-aided graphics system, as it is used in the field of tool and die making. Prerequisite(s): MACHTL-304.

TDMK-367 Credits: 1
Basic CAD/CAM
Students are introduced to the basic components of a CAD/CAM system, drawing creation and editing using CAD, layering and drawing management, CAD and CAM system interface, file transfer and tool path creation using CAD files on a CAM system. Prerequisite(s): TDMK-366.

TDMK-371 Credits: 4
Stamp Die Making 1
Skills and knowledge are developed through the building and tryout of a compound die. Die clearance, alignment and component function are taught through practical hands-on applications. Form dies are also introduced. CNC machining skills are further developed with the emphasis placed on machining processes and techniques for producing die components.

TDMK-372 Credits: 4
Stamping Die Making 2
This course is a continuation of TDMK-371 with the student producing a form die and a cam die. Along with the continued focus on CNC machining, surface grinding and form grinding skills are developed beyond the introductory level. As with all of the stamping die making courses, the student must trial run the completed die.
### TDMKG – TV

#### DEGREE/DIPLOMA COURSE DESCRIPTIONS

**TDMKG-373**  
*Credits: 4*  
**Stamping Die Making 3**  
Students will expand upon the stamping die making knowledge developed in the first two courses as they construct a progressive die. Essential die making practices are further developed as the students learn to produce die components using the Wire EDM.

**TDMKG-381**  
*Credits: 4*  
**Moldmaking 1**  
Skills and knowledge are enhanced through the machining of various mold components. A wide variety of conventional and CNC machine tools are utilized with instruction that focuses on tolerance and final assembly. Mold component relationship and function are stressed.

**TDMKG-383**  
*Credits: 4*  
**Moldmaking 3**  
Students will expand upon the moldmaking knowledge developed in the first two courses as they construct a mold that will run in a master unit die. Essential moldmaking practices are further developed as students produce all of the mold components required for their capstone project.

#### TRUCK DRIVING/COMMERCIAL DRIVING

**TRCKDR-341**  
*Credits: 4*  
**Truck Driving 1**  
This course covers the laws pertaining to the operation of a commercial motor vehicle (CMV). It also focuses on how to inspect a CMV, and how to operate one safely. Each student progresses according to his or her own abilities with the assistance of an instructor. Prerequisite(s): Must be admitted to the Truck Driver program (30-458-1), and completion of or currently enrolled in TRCKDR-341, TRCKDR-343 and TRCKDR-344.

**TRCKDR-342**  
*Credits: 3*  
**Truck Driving 2**  
This course focuses on understanding the paperwork connected with the trucking industry. It will also cover communication skills and security issues. Prerequisite(s): Must be admitted to the Truck Driver program (30-458-1), and completion of or currently enrolled in TRCKDR-341, TRCKDR-343 and TRCKDR-344.

**TRCKDR-343**  
*Credits: 3*  
**Truck Driving 3**  
This course further prepares students to obtain a commercial driver's license. Learners have the opportunity to plan trips and manage loading procedures. Weight distribution techniques and security issues are also discussed. Prerequisite(s): Must be admitted to the Truck Driver program (30-458-1), and completion of or currently enrolled in TRCKDR-341, TRCKDR-342 and TRCKDR-344.

**TRCKDR-344**  
*Credits: 3*  
**Truck Driving 4**  
This course focuses on the student's continuous improvement. The class is designed for students who have successfully obtained a commercial driver's license. Operating skills and the role of a professional truck driver will be emphasized. Prerequisite(s): Must be admitted to the Truck Driver (30-458-1) program, and completion of or currently enrolled in TRCKDR-341, TRCKDR-342 and TRCKDR-343.

#### TV AND VIDEO PRODUCTION

**TV-101**  
*Credits: 4*  
**TV/Video Studio Production Techniques**  
This course is a survey of the principles of studio and field television operations including camera techniques, lighting, sound, control rooms, settings, scenery, properties, floor directing and scripting as applied to operations within the television industry.

**TV-105**  
*Credits: 4*  
**TV/Video Field Production Techniques**  
Basic processes of broadcasting – advertising, ratings, the FCC, history, cable and networks – are examined and provide the student with a working knowledge of the various separate aspects that make up the television industry. Prerequisite(s): TV-101.

**TV-107**  
*Credits: 3*  
**Script Writing for Television, Radio and Film**  
Basic concepts of script writing for television, radio and film are presented. Students are encouraged to think in visual terms and to utilize the unique properties of the medium to communicate these visual impressions. Prerequisite(s): Completion of or concurrent registration in TV-110.

**TV-110**  
*Credits: 4*  
**Advanced Production Techniques**  
Training is provided in the responsibilities of the television producer/director in planning and producing television shows. These relate to program formats, advanced production techniques, costs, technical facilities, crew management and talent selection. Prerequisite(s): TV-105.

**TV-112**  
*Credits: 3*  
**Storytelling Via Post-Production**  
Students are introduced to editing concepts and techniques and are taught to assess and assemble visual sequences into completed segments. Training is provided in pulse-count and time code editing, backspace and computer-based systems, external triggering, list management and simple programming. Prerequisite(s): TV-101 and completion of or concurrent registration in TV-105.

**TV-113**  
*Credits: 3*  
**Television Lighting and Set Construction**  
Students learn television lighting techniques for both in-studio and on-location production situations. Attention is given to television production enhancement through lighting, the use of settings and their design. Practice is also given in shop methods and in set construction. Prerequisite(s): Completion of or concurrently registered for TV-110.

**TV-115**  
*Credits: 4*  
**Technical Problems in Television**  
All elements of television production are combined to enable students to utilize a wide range of broadcast equipment in the production of both open-circuit and closed-circuit television materials. Emphasis is also placed on applied media aesthetics. Prerequisite(s): TV-110.

**TV-119**  
*Credits: 3*  
**Engineering for Production Students**  
This course is a study of basic television systems and equipment embracing the techniques of camera video operations (registration, color balancing, maintenance, video level control), audio and videotape systems, switchers, audio consoles, microphones, character generators and time-code editors. Prerequisite(s): TV-110.

**TV-121**  
*Credits: 3*  
**TV and Video Production Workshop 1**  
Students are assigned to floor crew positions on WMVS/WMVT programs so that they may obtain on-the-air experience in areas where limited TV experience is required. Prerequisite(s): Completion of or concurrently enrolled in TV-105.

**TV-122**  
*Credits: 3*  
**TV and Video Production Workshop 2**  
Students are assigned to responsible crew positions such as floor director, property supervisor, teleprompter operator, microphone boom operator and camera operator on WMVS/WMVT productions. Each student has the opportunity for on-the-air experience. Prerequisite(s): TV-121.

**TV-123**  
*Credits: 3*  
**TV and Video Production Co-Op 1**  
Advanced practical video experience may be obtained through positions that are directly related to the student's career goals. Students will enhance their educational skills through this supervised work experience in conjunction with the local broadcast, cable and/or corporate video community. Prerequisite(s): TV-122.

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TV-124 Credits: 3
TV and Video Production Co-Op 2
Additional video work experience may be obtained through entry-level positions that lead to advancement, and provide experiences in relevant work situations. Prerequisite(s): TV-123.

TV-130 Credits: 3
Introduction to Computer Editing
This course is designed to provide students with the skills necessary to upgrade their videotape editing techniques through the use of time-code and computer-based edit control. Techniques and practice include split editing, list management and manipulation of general purpose interfaces for external machine control. Prerequisite(s): TV-112.

TV-132 Credits: 3
Advanced Videotape Editing
This course will build upon the techniques learned in TV-130, and provides students with hands-on experience in high-end edit systems utilized in both online and offline situations. Techniques and practice include system overview, basic editing, setting transitions, edit/review, EDL management, disk management and self-diagnostics. Prerequisite(s): TV-130 or TV-142.  

TV-142 Credits: 3
Non-Linear Video Editing and Authoring
This course will focus on editing video footage in a non-linear world and adapting that output for multi-versioned purposes: from tape to DVD to web. Integration of station facilities, using AVID DNxExpress Pro, Apple Final Cut Pro and AVID Adrenaline, plus outputting via DVD software, will be emphasized. Prerequisite(s): Completion of TV-105 and TV-112 and completion of or concurrent registration in TV-110.

TV-143 Credits: 3
ATC/HDTV Acquisition and Editing
This course follows TV-142 and focuses on advanced digital broadcast formats, their acquisition and preparation for editing. Goals will be to plan, light, shoot and gather field audio in the various high-definition formats, then prepare that material for editing. Lessons will focus on technical differences in ATV vs. NTSC. Prerequisite(s): Completion of TV-110 and TV-142 and completion of or concurrent registration in TV-115.

TV-144 Credits: 3
Graphic Design for Video Integration
Course focus is on creating graphics for use in broadcast, as well as other video applications, from tape to DVD to web. Also covers integration of station facilities, using FX/DEKO platform for TV graphics techniques, plus understanding how to use popular software, such as Photoshop, in creating video graphics. Prerequisite(s): Completion of VICOM-130 and TV-105 and completion of or concurrent registration in TV-110.

TV-145 Credits: 3
Interactive Content Development
This follows TV-144 and focuses on uniting the many platforms available in interactive design, with traditional video program content creation. Goals are to multi-version broadcast content, learn to interface with graphic artists and software, write content for many platforms, and track and organize materials. Prerequisite(s): TV-110, TV-144.

TV-181 Credits: 1
TV and Video Production Orientation
This orientation course is designed to familiarize the entering students with some employment and career opportunities, and skills, that they would acquire through the Television and Video Production program. Prerequisite(s): Completion of or concurrent registration in TV-101.

VISUAL COMMUNICATIONS

VICOM-104 Credits: 3
Multimedia for Computer-Based Training
In this advanced course, students learn the basics of instructional design as it relates to delivering computer-based training (CBT). The student learns principles of planning and design of CBT, as well as implementation and assessment. CBT authoring tools are introduced and used to create an interactive training module. Prerequisite(s): VICOM-105 and VICOM-135.

VICOM-105 Credits: 3
Multimedia and Web Authoring
This course provides students with no prior flash or programming experience the knowledge and hands-on practice needed to build a rich internet/CD-ROM application with Flash. Students will focus on how to lay out pages, use color and text effectively, work with multiple image types, build navigation and incorporate animation, sound and video. The course also introduces the ActionScript language and teaches students fundamental programming including constructs variables and conditional logic. Prerequisite(s): VICOM-152 and VICOM-123.

VICOM-106 Credits: 1
Introduction to Web Page Design
Students are introduced to the internet via web browser. This course reviews home page design concepts and looks at technological advances. Students learn the basic software tools found in web page design programs to create a mockup hypertext-driven web page.

VICOM-108 Credits: 1
Multimedia Scripting Basics
Introduces students to the basic scripting principles used in web languages and interactive authoring programs. Topics covered will include variables, conditional statements, loops and calculations. Other syntaxes are presented as examples of real-world applications of these structures within specific context. Prerequisite(s): Satisfactory Math and English placement test scores.

VICOM-110 Credits: 3
Introduction to Computer Simulation and Gaming
This course provides students with an overview of the computer simulation and gaming industry. Students will be introduced to the genres, gaming development process, ethics, copyright issues and planning, marketing and management concepts. Emphasis will be placed on game objectives, keeping the player perspective and educational applications.

VICOM-115 Credits: 3
CSG Production
This course provides students with a hands-on team approach to creating games and on design from the very beginning. Animation-focused students work side-by-side with Programming-focused students to create simple introductory games and simulations on a game engine. Exposure to content requirements, engine limitations, scheduling, deliverables and communications will be emphasized. Teams will be selected and compete against each other; the focus of this class is to perform rapid prototyping of ideas in a challenging environment while developing collaboration skills. Prerequisite(s): Completion of or concurrent registration in VICOM-110.

VICOM-117 Credits: 3
Game Logic and Problem-Solving
This course presents a formal approach to logical thinking and problem-solving using game logic concepts. For students to think logically and solve game play problems, they need to understand game mechanics and game play choices. This means to use logically valid forms of analysis, critical thinking and application concepts to derive new results from those already known to be implemented in the gaming industry. This course will teach these game problem-solving structures in context with fundamental programming structure application.

VICOM-119 Credits: 3
Designing Interactive Displays
Introduces students to interactive display systems using a game engine. Focus will be on designing, producing and testing museum-quality programs and simulations for “edutainment” purposes. The course will also emphasize display design concepts such as lighting, sound, projection, audience interaction, docent design and user interface technology. Students will be immersed in a team and production environment, working on a real project for a real client. Prerequisite(s): VICOM-115.
VICOM-120 Credits: 1
Interactive Display Production 1
This course provides the students opportunities to get practical production experience on the specific display platform prototype used at MATC. The student, working as part of a team, will be responsible for following production processes to evaluate current interactive displays and enhancing them. Focus will be placed on responding to client requests, developing practical design solutions, and implementing those solutions. Prerequisite(s): VICOM-130.

VICOM-121 Credits: 1
Interactive Display Production 2
This course provides the students with opportunities to get practical production experience on the specific display platform prototype used at MATC. The student, working as part of a team, will be responsible for following production processes to evaluate current interactive displays and enhancing them. Focus will be placed on responding to client requests, developing practical design solutions, and implementing those solutions. Prerequisite(s): VICOM-130.

VICOM-122 Credits: 3
Introduction to Visual Communications
This course is a survey of technology as applied to the production and delivery of multimedia projects. Computer multimedia systems are examined from a hardware and software standpoint. Applications of graphic technology to instruction, advertising and entertainment are emphasized. Basic skills and concepts needed across the various graphic disciplines are discussed and demonstrated. Career paths and specific job skills within the industry are identified.

VICOM-123 Credits: 3
Website Development
Students use XHTML and CSS to develop basic websites. Also, software tools such as Dreamweaver and Adobe Photoshop are used to create websites. Emphasis is placed on acquiring or creating content and publishing sites. Commercial sites are evaluated for understanding design and usability. Hands-on projects build toward the completion of a site published to the web. Prerequisite(s): VICOM-150.

VICOM-124 Credits: 3
Content Management Systems
Students learn web development concepts as applicable to content management systems (CMS). Students will develop websites using a variety of open-source CMS tools such as: WordPress, Joomla, Concrete5 and Drupal. The final project for the course is a website that students develop using an open-source CMS tool. Prerequisite(s): VICOM-108, VICOM-123 and VICOM-128.

VICOM-125 Credits: 3
Advanced Website Development
Students learn JavaScript to develop more robust websites. Students will learn about functions, event handlers, decision statements, cookies and other advanced coding techniques. Advanced behaviors using Adobe Dreamweaver will also be covered. The final project is a website that students will develop with JavaScript and Ajax. Prerequisite(s): VICOM-108, VICOM-123 and VICOM-128.

VICOM-126 Credits: 3
Mobile Web Development
Students learn concepts for information delivery on mobile devices such as cellular phones, PDAs, laptops and tablet PCs. WYSIWYG tools, such as Adobe Dreamweaver, and new adaptable languages are used to develop websites optimized for viewing on various mobile devices. The final project is a website that students will debug using mobile devices. Prerequisite(s): VICOM-108, VICOM-123 and VICOM-128.

VICOM-127 Credits: 3
Illustrated Storytelling
This course introduces the beginning animation student to concepts such as story development script writing and the ability to create visual storyboards using traditional drawing techniques. Students will also learn to translate their hand-drawn storyboards into animated, digital storyboards using Adobe AfterEffects, as well as pitching or selling their ideas for client approval.

VICOM-128 Credits: 3
Web Development with HTML/CSS
Students develop the HTML and CSS skills needed for developing functional websites. Emphasis is placed on writing code, designing with Cascading Style Sheets, debugging, and publishing of websites. The final project is a website that students will develop, by writing code. Prerequisite(s): Satisfactory Math and English placement test scores.

VICOM-129 Credits: 2
CSS Architecture
This course provides students with an overall architectural planning concept of a simulation or game. Students will be introduced to level diagrams, flow control, structure and progression diagrams, assessment tools in educational applications, and decision-making mapping. Emphasis is on planning, documentation tracking and process monitoring. Prerequisite(s): ITDEV-110 or ANIM-106.

VICOM-130 Credits: 3
CSG Design
This course offers students an exploration of the fundamentals of simulation and game design. Students will construct a simple game or simulation using industry standards and test-driven design elements. Emphasis will be placed on the planning, development control, and testing process of the simulation or game. Educational applications will also be discussed. Prerequisite(s): ITDEV-110, ANIM-106 or VICOM-152.

VICOM-134 Credits: 3
Audio Production
This course provides an overview of basic sound theory used in recording and editing analog and digital audio formats, using Sound Forge and Adobe Premier. Techniques for proper recording, creation of sound effects, and editing of audio to video, in addition to planning and writing, are important aspects of this course.

VICOM-135 Credits: 3
Interactive Multimedia Systems
An intermediate course introducing advanced animation techniques. The focus will be on concept-driven animation and creativity. Individual and collaborative project-based assignments provide a basic understanding of the professional production process. Prerequisite(s): VICOM-105.

VICOM-136 Credits: 3
Advanced Multimedia Techniques
The course emphasizes the advanced capabilities of Adobe Flash, using ActionScript object oriented programming. Students plan, produce and troubleshoot Flash-based applications, which can include websites, games, and touchscreen and portable device applications. This intermediate to advanced ActionScript class requires a basic understanding of Flash. Prerequisite(s): VICOM-105.

VICOM-137 Credits: 3
Interactive Video
Desktop digital video, DVD authoring, professional production standards and researching new technologies are components of this class. Students build on knowledge of interface design and multimedia production to create interactive video projects. Prerequisite(s): VICOM-152 and VICOM-154.

VICOM-140 Credits: 2
VICOM Practices
This course prepares students to work in the visual communications field by giving them practical real-job experience in a nonthreatening environment. The fundamentals of résumé-writing, interviewing and phone skills are emphasized. Job search techniques and job site observations are also discussed. Prerequisite(s): VICOM-105.

VICOM-145 Credits: 3
Visual Communications Portfolio
The diversity and caliber of each student’s work is assessed, packaged and presented through this course. Students prepare to market themselves in the workplace via the internet, distributable digital media and personal interviews. Participation in an annual portfolio exhibit is required. Prerequisite(s): VICOM-105.

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**VICOM – WELD**

**DEGREE/DIPLOMA COURSE DESCRIPTIONS**

**VICOM-150 Credits: 3**  
**Introduction to Digital Media**  
An introductory course, students work with software and hardware used in the development of multimedia projects. An overview of computer graphics software includes Photoshop, Illustrator and interactive authoring programs. Hardware tools such as scanners, CD writers and printers are covered. Project-based assignments provide a basic understanding of the multimedia production process. Prerequisite(s): Satisfactory Math and English placement test scores.

**VICOM-152 Credits: 3**  
**Interactive Design for Multimedia**  
Students will gain insight into interactive design. Students learn Photoshop techniques to work with digital images for interactive multimedia applications. Illustrator is used to learn typography for interface design. Professional planning strategies are applied to produce a finished multimedia project. Prerequisite(s): VICOM-150.

**VICOM-154 Credits: 3**  
**Digital Darkroom Techniques**  
In this course, students explore some of the more sophisticated tools and techniques of Photoshop, used to correct and modify photographic images. Attention to detail is emphasized in hands-on projects ranging from simple color corrections to complex compositions. Experience using traditional (film) or digital photography is helpful. Prerequisite(s): Must pass the MATC English and Math placement test.

**VICOM-160 Credits: 3**  
**Advanced Web Programming**  
Students learn advanced programming and design techniques using Dreamweaver, XHTML, and the latest open source language (Ruby on Rails) to create, debug and produce a more robust database-driven website. Emphasis is placed on organizing content, developing programming logic, and simplifying functionality. Variables, methods, event handlers, conditional statements, loops and calculations are covered in an OOP language that is easy to learn. Publishing a functional website is the goal of this course. Prerequisite(s): VICOM-125.

**VICOM-161 Credits: 3**  
**Action Scripting**  
The object-oriented capabilities of Adobe Flash are emphasized. The course teaches students how to use ActionScript objects, methods, events, properties and functions. The student will learn how to plan, produce and troubleshoot a website. This is an intermediate to advanced ActionScripting class that requires a basic understanding of a timeline-based authoring tool. Prerequisite(s): VICOM-105.

**VICOM-162 Credits: 3**  
**Database-Driven Web Design**  
Students learn the application, design concept and production techniques of a database-driven website. Students will use PHP and MySQL on an Apache server that has a Linux operating system to accomplish this. This provides a platform found in many smaller companies that are not Microsoft based. Programming concepts will be taught in PHP and MySQL to connect and talk to the database. The students will use DreamWeaver as the design tool. Publishing a website with database capabilities is the goal of this course. Prerequisite(s): VICOM-108, VICOM-125, and VICOM 128.

**VICOM-163 Credits: 3**  
**iPhone/iPad (iOS) App Development**  
Students will learn the basics of the Apple iOS SDK including user interface design, multi-view applications, table views, navigation controllers, data persistence, drawing, taps and touches, using libraries and localization. Students will develop several basic iPhone/iPad applications that provide the foundations of developing more advanced applications. Students will learn about ObjectiveC programming and writing applications for Mac OS interfaces. Prerequisite(s): VICOM-108, VICOM-123 and VICOM-128.

**VICOM-164 Credits: 3**  
**Android Application Development**  
Students will learn the basics of Google's Android SDK including user interface design, multi-view applications, table views, navigation controllers, data persistence, drawing, taps and touches, using libraries and localization. Students will develop several basic Android applications that provide the foundations of developing more advanced applications. Students will learn about Java programming and writing applications for Android interfaces. Prerequisite(s): VICOM-108, VICOM-123 and VICOM-128.

**VICOM-165 Credits: 3**  
**Advanced Mobile Development**  
Students will explore advanced mobile design techniques, building upon skills obtained through the prerequisite coursework. Topics will change to stay current with technology advances and industry trends. Prerequisite(s): VICOM-163, VICOM-164.

**VICOM-179 Credits: 4**  
**CSG API Programming**  
This course focuses on OO programming languages and tools used in computer simulations and games. Emphasis is placed on programming concepts used in an existing game engine at the root level of coding. Students will modify existing game code as they develop individual and group mods. The students will also be creating their own object classes to put into the game mechanics. The final project focuses on team programming and testing. Prerequisite(s): ITDEV-115.

**VICOM-180 Credits: 3**  
**Multimedia Collaborative Lab**  
This course allows students to work on collaborative projects with industry, Discovery World or internal MATC departments. Students apply project management skills and their creative skills to create interactive multimedia applications in learning, training or marketing environments. Students can work in teams or independently while guided by faculty. This process simulates an industry team-oriented work environment where faculty, industry and the students are all part of the project planning, monitoring and evaluation. Prerequisite(s): ITDEV-185 or ANIM-115.

**VICOM-181 Credits: 4**  
**CSG Collaborative Lab**  
This course offers students in the CSG program the opportunity to focus on their CSG project in an effort to produce a game module by the end of fourth semester. It allows time just to focus on production and testing of the integrated pieces of animation and programming. Prerequisite(s): ITDEV-115 or ANIM-129.

**WELDING**

**WELD-100 Credits: 1**  
**Fundamentals of Arc Welding**  
Students develop fundamental knowledge and skill in the safe use of shielded metal arc welding equipment. Typical operations such as bead, butt, lap and fillet welding are performed, using shielded AC and DC straight polarity and reverse polarity electrodes on mild steel plate, in flat and horizontal positions.

**WELD-300 Credits: 1**  
**Fundamentals of Arc Welding**  
Students develop fundamental knowledge and skill in the safe use of shielded metal arc welding equipment. Typical operations such as bead, butt, lap and fillet welding are performed, using shielded AC and DC straight polarity and reverse polarity electrodes on mild steel plate, in flat and horizontal positions.

**WELD-301 Credits: 2**  
**General Arc Welding**  
In this course, extensive instruction is provided in the making of various types of welded joints in all welding positions. Prerequisite(s): WELD-300.

**WELD-302 Credits: 2**  
**Specialized Arc Welding**  
Emphasis is placed on joint preparation and welding procedures. Proper techniques of using shielded metal arc alloyed electrodes are presented. In addition, preparation, testing and evaluation of coupons that pertain to structural codes are covered. Prerequisite(s): WELD-301.
WELD DEGREE/DIPLOMA COURSE DESCRIPTIONS

WELD-305 Credits: 1
Fundamentals of Oxyfuel Welding
Students develop a fundamental understanding and skill in the use of oxyacetylene welding equipment, including safe handling of cylinders of oxygen and acetylene. Such typical operations as joint design and various types of welds are performed with mild steel filler rod. Some instruction is given in manual oxyacetylene cutting of mild steel. Introduction to basic metallurgy for welders is given.

WELD-306 Credits: 2
Fundamentals of Gas Tungsten Arc Welding (TIG)
The purpose of this course is to give students a fundamental knowledge of the gas tungsten arc welding process. The basic principles of equipment setup and operation are taught. Instruction is provided on the proper techniques of welding mild steel sheet metal in and out of position. Prerequisite(s): WELD-305.

WELD-307 Credits: 2
Advanced Gas Tungsten Arc Welding (TIG)
This course is designed to give students instruction in the art of TIG welding plate and pipe. Proper equipment operation and setup for nonferrous alloys such as aluminum are also taught. Students also weld stainless steel sheet metal in and out of position. Prerequisite(s): WELD-306.

WELD-310 Credits: 1
Gas Tungsten Arc Welding (TIG)
Instruction is given in inert-gas shielded arc welding with a manually operated torch on such metals as aluminum, mild steel and stainless steel. Prerequisite(s): WELD-305.

WELD-313 Credits: 5
Shielded Metal Arc Welding
Provides industrial application of shielded metal arc welding in all positions on carbon steel. Provides industrial application of thermal cutting on carbon steel. Students apply safety according to industry standards and ANSI A49.1 Safety in Welding and Cutting. This course is designed in accordance with AWS SENSE national standard; AWS/ANSI QC-10:2004 Specification for Qualification and Registration of Level 1 – Entry-Level Welders. SMAW is one of the four areas of welding concentration in the one-year technical diploma program.

WELD-314 Credits: 5
Gas Tungsten Arc Welding
Provides basic skills in oxy-fuel welding, brazing and cutting on carbon steel. Provides industrial application of gas tungsten arc welding in all positions on carbon steel, stainless steel and aluminum in a lab setting. Students apply safety according to industry and ANSI Z49.1 Safety in Welding and Cutting. This course is designed in accordance with: AWS SENSE national standard AWS/ANSI QC-10:2004 Specification for Quality and Registration of Level 1 – Entry-Level Welders. GTAW and oxy-fuel welding are one of four areas of welding concentration in the one-year technical diploma program.

WELD-315 Credits: 5
Gas Metal ARC Welding Pract
Provides industrial application of gas metal arc welding in all positions on carbon steel. Provides industrial application of flux cored arc welding in all positions on carbon steel. Students apply safety according to industry standards and ANSI A49.1 Safety in Welding and Cutting. This course is designed in accordance with AWS SENSE national standard AWS/ANSI QC-10:2004 Specification for Qualification and Registration of Level 1 – Entry-Level Welders. GMAW and FCAW are two of the four areas of welding concentration in the one-year technical diploma program.

WELD-316 Credits: 5
Layout and Setup Practices
Provides a focus on the development of layout and basic fabrication skills through a sequence of industrial and AWS SESE weldments that involve the use of GMAW, GTAW, FCAW, and SMAW. Students will learn to utilize industrial equipment, power tools, band tools and layout tools. Students will apply advanced welding skills. Students apply safety according to industrial standards and ANSI A49.1 Safety in Welding and Cutting. This course is designed in accordance with AWS SENSE national standard AWS/ANSI QC-10:2004 Specification for Qualification and Registration of Level 1 – Entry-Level Welders. Layout and setup practices is the final area of concentration in the one-year welding diploma program.

WELD-325 Credits: 5
Heavy Plate Practices
This course provides secondary instruction compatible with WELD-327 or WELD-315 from the diploma program in the area of FCAW. Students who complete this welding component, along with print reading and math, are eligible to take training programs in some of the leading heavy plate employers in the MATC district. Employment is not guaranteed to anyone; you must prove your welding skills and core abilities such as attending every day and on time. All employers engage in strict drug testing that can go back as far as six months and involve as many as 30 drugs that are tested for.
Prerequisite(s): WELD-327 or WELD-315.

WELD-326 Credits: 1
Fundamentals of Semi-Automatic Wire Welding
The student develops fundamental knowledge and skill in the safe use of semi-automatic wire welding equipment. Topics discussed include joint details and distortion control, GMAW weld faults, welding, metallurgy and weld symbol interpretation.

WELD-327 Credits: 2
Specialized Semi-Automatic Wire Welding
Welding skills are developed in this course through the use of the semi-automatic solid and cored wire welding processes such as gas metal arc, flux cored and submerged arc. Prerequisite(s): WELD-326.

WELD-328 Credits: 2
Flux Core Arc Welding
This is a continuation of the concepts and skills in wire welding learned in WELD-327. Emphasis is on out-of-position welding on common joints. Prerequisite(s): WELD-327.

WELD-329 Credits: 4
Flux Core Arc Welding Practice 1
After successful completion of this course, the student will have the ability to produce multiple pass fillets and grooves with large diameter gas-shielded FCAW wires of quality consistent to AWS D1.1 structural welding code requirements. Prerequisite(s): WELD-326 and WELD-327.

WELD-330 Credits: 4
Flux Core Arc Welding Practice 2
The student successfully completing this course will have the ability to produce out of position welds with FCAW process, carbon arc gouge for full penetration fillet, and groove welds consistent with UT and x-ray requirements of AWS D1.1 structural welding code.

WELD-331 Credits: 1
Structural Welding 1
This is a welding shop course for building trade workers. Emphasis is on flat and horizontal position welds to structural code standards. Also emphasized is structural shape cutting using oxyfuel equipment.

WELD-332 Credits: 1
Structural Welding 2
This is a welding shop course primarily for the building trade area. Emphasis is on welding vertical and overhead fillet welds to structural code standards. Prerequisite(s): WELD-331.

WELD-333 Credits: 1
Structural Welding 3
This is a welding shop course, designed primarily for the building trades area. Emphasis is on welding vertical and overhead vee grooves to structural code standards. Prerequisite(s): WELD-332.

WELD-340 Credits: 2
Welding for Auto Body Technicians
Skills for the auto body shop are stressed during instruction on the use of the oxyacetylene torch, and arc and wire welding equipment to complete bead, butt, lap and fillet welds.

For more information: matc.edu or 414-297-MATC. Page 298
Develops advanced skills in print reading and layout. Students develop a fundamental understanding and skill for reading engine and drawing. Such typical operations as beading, butt, weld, and fillet welds are performed with the oxyacetylene torch and gas tungsten arc welding (TIG) on steel and aluminum. Prerequisite(s): WELD-300.

WELD-342 Credits: 1
Welding for Diesel and Powertrain Servicing 2
The student develops a fundamental understanding and skill for the combustion engine shop. Such typical operations as beading, butt, weld, and fillet welds are performed with the gas metal arc welding process. Thermal cutting is covered, along with metallurgy as it pertains to welding. The setup, operation, and maintenance of each process is stressed. Prerequisite(s): WELD-300.

WELD-350 Credits: 1
GTAW Processes
Safe working habits in handling oxyfuel and gas tungsten arc equipment are developed. The principles for applying oxygen on different types and sizes of materials in various joint configurations are stressed. Commercial production, handling and storage of compressed gases that are used in GTA and oxyfuel processes are discussed. Introduction to metallurgy is given.

WELD-351 Credits: 1
Shielded Metal Arc Welding Processes
Instruction is offered in the principles of shielded metal arc welding as applied to different types and thicknesses of metals in various joint configurations. The principles of various testing methods for ensuring weld quality are also presented, along with the proper techniques and applications of the SMAW process. Introduction to the weldability of metals is given.

WELD-352 Credits: 1
Gas Shielded Arc Welding Processes
The principles and theory of the semi-automatic wire welding processes as applied to different types and thicknesses of metals in various joint configurations are emphasized. Various testing methods used for assuring weld quality are covered.

WELD-353 Credits: 1
Layout and Setup Techniques
This course is designed for the student or welder who desires to become familiar with the principles of metal fabrication. Students work with blueprints, layout techniques, fabrication methods and assembly techniques in order to construct a weldment. Prerequisite(s): WELD-300, WELD-327, WELD-361, WELD-362 and WELD-380.

WELD-354 Credits: 2
Layout and Print Reading Practices
Develops advanced skills in print reading through utilization of complex industrial prints that feature AWS welding symbols, ISO welding symbols, American standard dimensions, SI metric dimensions, isometric drawings, section drawings, material lists and assembly drawings. Students get hands-on experience working with prints related to the work environment for welding. Students will learn to create drawings by utilizing dividers, squares, scales and protractors from existing drawings, written directions and sample mockups. The skills in this course transfer to the Layout and Set-up course in the lab. Prerequisite(s): WELD-360 or WELD-361 and WELD-362 plus WELD-380.

WELD-360 Credits: 2
Blueprint Reading for Welders
Develops fundamental skills in print-reading through the use of basic lines and views, basic sketching, dimensioning techniques, title block, notes, sections and detail, and types of prints. Emphasis is placed on orthographic projection and isometric views to help the learner develop the visual relationship between an object and a print in the first weeks of the course. Students get hands-on experience with prints for analysis of dimensions, welding symbols, materials list, parts of a print, and all the conventions used in the workplace. Students learn basic weld joints, welding symbols and knowledge of AWS standards for welding symbols.

WELD-361 Credits: 1
Basic Blueprint Reading for Welders
This fundamental blueprint-reading course covers basic lines and views, simple sketching, dimensioning techniques, title block, notes, sections and detail, and isometric views. Emphasis will be placed on orthographic projection and isometric views are also covered.

WELD-362 Credits: 1
Blueprint Reading/Welding Symbols
This course introduces the weld and welding symbol. Joint preparation and all information for the completion of weldments are covered. Welding abbreviations as they relate to the symbols are introduced.

WELD-363 Credits: 1
Advanced Blueprint Reading for Welders
This blueprint-reading course places emphasis on the more complicated blueprint. Pipe welding symbols, metrics, dual dimensioning, destructive and nondestructive testing symbols for weld and material discontinuities are covered. Prerequisite(s): WELD-361.

WELD-371 Credits: 4
Metal Fabrication 1
See INFOline at matc.edu for information. Prerequisite(s): WELD-315.

WELD-372 Credits: 4
Metal Fabrication 2
See INFOline at matc.edu for information. Prerequisite(s): WELD-371.

WELD-373 Credits: 3
Manufacturing Cutting
See INFOline at matc.edu for information. Prerequisite(s): WELD-315.

WELD-374 Credits: 4
Capstone Project in Welding
See INFOline at matc.edu for information. Prerequisite(s): WELD-315.

WELD-380 Credits: 1
Welding Trades Mathematics
This course is designed to provide students with a review of basic mathematical concepts, including metrics, averages, percentages, tolerances, linear and angular measures, area, volume and capacities of metal shapes and fabricated objects. Material weight, stretchout calculations and blueprint calculations for welding-specific applications are studied.

WELD-395 Credits: 1
Layout and Setup for Welders 1
This course is designed for the welder who desires to become familiar with fundamental metal construction as it pertains to welding. Skill is acquired in the use of common hand and power tools in the layout and setup of simple weldments. Prerequisite(s): WELD-361, WELD-362, and WELD-300, or WELD-327.

WELD-396 Credits: 2
Layout and Setup for Welders 2
This course is for the welder who wants to work as a layout/setup welder. Using blueprints, the student constructs weldments, allowing for shrinkage and holding critical tolerances. Prerequisite(s): WELD-395.

WELD-397 Credits: 2
Layout and Setup for Welders 3
Advanced training is given in weldment construction for the layout/setup welder. A strong general mathematics background is desirable for this course due to the more complex construction of the weldments. Prerequisite(s): WELD-396.

WELDING/INDUSTRIAL WELDING TECHNOLOGY

WELDTC-101 Credits: 2
Welding Theory 1
This course covers the theory and application of the gas tungsten arc weld and oxyfuel welding and cutting processes. The major safety standard, ANSI Z49.1 Safety Welding and Cutting, is studied in detail.

WELDTC-102 Credits: 3
Welding Theory 2
Covers theory and process control of the major consumable arc welding processes: SMAW, GMAW, FCAW and SAW. Computer-based information systems will be used to identify, research and write four technical papers in the lab portion of the course.
### WELDTC-105 Credits: 3
Weldability of Materials
This course will examine the characteristics of weldable materials and their properties that affect weldability: “The capacity of a material to be welded under the imposed fabrication conditions into a specific, suitably designed structure and to perform satisfactorily in the intended service” (AWS A3.0). Students gain the theoretical and technical knowledge needed to research and develop preliminary welding procedures for joining the major weldable materials. Prerequisite(s): Completion of or concurrent enrollment in WELDTC-102.

### WELDTC-107 Credits: 3
Fabrication Graphics
The skills needed to interpret and apply the information conveyed by conventional and computer-generated fabrication blueprints are developed through this course. Student receives hands-on experience in operating a CAD system to generate and manipulate fabrication databases.

### WELDTC-111 Credits: 4
Welding Practice 1
This course will give students hands-on experience in the setup and operation of the oxyfuel, gas tungsten arc and shielded metal arc processes to weld the basic joints in all positions. Prerequisite(s): Completion of or concurrently registered in WELDTC-101.

### WELDTC-112 Credits: 4
Welding Practice 2
This course will give students hands-on experience in the setup and operation of shielded metal arc, gas metal arc and flux-cored arc processes to weld the basic joints in all positions to commercial and code-quality standards. Prerequisite(s): Completion of or currently enrolled in WELDTC-102.

### WELDTC-113 Credits: 3
Welding Techniques 1
The purpose of this course is to give the theoretical and technical knowledge needed to develop, write and qualify welding procedures and welders to written specifications and codes and to pass the National Certified Welding Inspector's Exam. Prerequisite(s): WELDTC-102.

### WELDTC-114 Credits: 3
Welding Techniques 2
This course gives students hands-on experience in developing, writing and testing welding procedures to the major welding codes. Students also test and qualify welders to the major codes. Prerequisites: WELDTC-102.

### WELDTC-115 Credits: 3
Welding Quality Systems
This course gives students experience in using the major quality systems applicable to welding. Emphasis is on interpreting the ISO 9000 series standards as they relate to welding fabrications and developing the documentation skills needed to acquire ISO 9000 series certification for their employers.

### WELDTC-116 Credits: 3
Procedure and Welder Qualification/Certification
This course gives students experience in writing and qualifying welding procedures and qualifying welders. Emphasis is on utilizing computerized code databases to record and track welding procedures and welder qualifications.

### WELDTC-117 Credits: 3
Weldment Documentation and Evaluation
This course gives students experience in constructing and evaluating a weldment to major welding code or specification. Emphasis is on generating all documentation needed for a code weldment and development of a welding quality manual for the weldment.

### WELDTC-125 Credits: 4
Manufacturing Applications for Robots
Robots used in manufacturing are studied. Students receive hands-on experience in programming a tool-manipulating robot. Basic mechanisms, hydraulics and pneumatics are covered.

### WELDTC-134 Credits: 3
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-135 Credits: 4
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-136 Credits: 3
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-137 Credits: 3
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-138 Credits: 3
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-139 Credits: 3
Automated Welding Processes
Students gain hands-on experience in fixturing setting up, troubleshooting, programming and operating automated welding equipment including robots and computer-controlled plasma-cutting systems. Prerequisites: WELDTC-112 and completion of or currently enrolled in WELDTC-140.

### WELDTC-140 Credits: 4
Manufacturing Applications for Robots
Robots used in manufacturing are studied. Students receive hands-on experience in programming a tool-manipulating robot. Basic mechanisms, hydraulics and pneumatics are covered.

### WELDTC-144 Credits: 2
Welding Fundamentals for HVAC
Students develop fundamental knowledge and skill in the safe use of oxyacetylene cutting and welding, gas tungsten arc welding and shielded rod welding equipment. Typical operations such as bead, butt, lap and fillet welding are performed, using proper procedures and techniques.
**Adult High School and High School Equivalency Programs**

The MATC Adult High School (AHS) offers a number of opportunities for individuals to resume or continue educational programs. Those 18 and over can resume their secondary education studies and earn a high school diploma or high school equivalency diploma through the MATC Adult High School. Others may enroll in the Adult High School's math or science courses concurrent with their college courses to meet program prerequisites. High school students can take AHS classes for credit recovery outside of their regular school time. Offering a variety of academic and vocational/technical classes, the Adult High School provides students with the foundation for entry-level job skills and postsecondary preparation.

Classes run during the day, evening, online and weekends during the regular academic year, and day and online courses are offered during the summer. Day and some evening technical classes are scheduled in eight-week quarters; evening academic, online and weekend classes run 15-16 week-long semesters. Each credit is equal to one-half of a Carnegie unit, or approximately 4,500 minutes of instruction.

The Adult High School is certified by the Wisconsin Department of Public Instruction, and accredited by the North Central Association Commission on Accreditation and School Improvement (NCA CASI), the accrediting arm of AdvancED, since 1923. The school accepts transferred credits from any nationally accredited high school and will evaluate the merits of granting credit for apprenticeships, military experience, correspondence study and for similar activities.

Of the 42 MATC credits needed for graduation, 30 are required and 12 are electives. The diploma granted by the Adult High School is accepted by all colleges and universities throughout Wisconsin and the United States. For more information, call 414-297-7471.

**Adult High School Guidance Counseling**

The Pre-College Counseling Department is located in Room FH210 of Foundation Hall at the Downtown Milwaukee Campus, 414-297-6591. It is open 8 a.m. – 4 p.m., Monday through Friday, all year. Evening hours are available by appointment. The Pre-College Counseling staff orients, assesses and advises new students; and plans courses with students who must meet graduation requirements.

### The 42 credits needed for graduation from MATC’s Adult High School include:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>8</td>
<td>Select eight credits from 700-series courses in Communications (COMMHS). One course must be a writing course.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLES:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMMHS-711 Multicultural Literature 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMMHS-725 Composition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COMMHS-700 Write to Work</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>Select four credits from 700-series courses in Mathematics (MATHHS). Two credits of Algebra are required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLES:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATHHS-705 Survey of Math Concepts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATHHS-716 Algebra 1A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATHHS-721 Geometry 1</td>
</tr>
<tr>
<td>Computers</td>
<td>1</td>
<td>Select one credit from 700-series courses in computer literacy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLE:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFTECH-735 Keyboard, Keypad and Windows</td>
</tr>
<tr>
<td>Social Studies</td>
<td>6</td>
<td>Select six credits from 700-series courses in History (HISTHS) or Social Science (SOCHS). Two credits must be earned in American History or Government.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLES:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HISTHS-705 American History 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOCHS-761 Sociology</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>Select four credits from 700-series courses in Science (SCIHS).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLES:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCIHS-703 Biology 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCIHS-705 Chemistry 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCIHS-750 Physical Science 1</td>
</tr>
<tr>
<td>Career Education</td>
<td>1</td>
<td>Select one credit from 700-series courses in careers (CAREER).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLE:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAREER-741 Career Preparation and Exploration</td>
</tr>
<tr>
<td>Occupation Course</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Success Strategies Course</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Financial Literacy Course</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Physical Education/Health</td>
<td>3</td>
<td>Select three credits from 700-series courses in Health Education (HLTHHS).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>EXAMPLE:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HLTHHS-700 Wellness and Fitness Education</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
<td>Select 12 credits in 700-series courses from these subjects: Communications (COMMHS), Health Education (HLTHHS), History (HISTHS), Mathematics (MATHHS), Science (SCIHS) and Social Science (SOCHS). You may also choose elective credits from the 700-series courses in selected occupational subjects, such as: Auto Maintenance Technician (AUTO1), Culinary Arts (CULART), and Motorcycles and Outdoor Power Equipment (SMENG).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL CREDITS 42</strong></td>
</tr>
</tbody>
</table>

For a full list of course choices, see the Course Descriptions at the end of this section.
Adult High School Vocational/Technical Programs

The Adult High School provides opportunities for individuals to develop skills and explore career areas through its vocational/technical programs. These programs include automotive, business, computer aided drafting, culinary arts, motorcycle repair, small engines and pre-engineering. The classes are open to any adults; AHS, GED and HSED students; and local high school students through the High School Contract program. Students may take these courses concurrent with their secondary classes. High school students can make arrangements through their counselor at their school. Individuals interested in the Adult High School vocational/technical programs should call MATC at 414-297-7471.

The following is a list of vocational/technical courses and career exploration courses offered in the Adult High School.

Adult High School Vocational/Technical Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO1-767</td>
<td>Auto Tune-Up and Emissions (Advanced)</td>
</tr>
<tr>
<td>AUTO1-768</td>
<td>Auto Engine Servicing (Advanced)</td>
</tr>
<tr>
<td>CULART-741</td>
<td>Culinary Arts Exploration/Co-Op 1</td>
</tr>
<tr>
<td>CULART-742</td>
<td>Culinary Arts Exploration/Co-Op 2</td>
</tr>
<tr>
<td>CULART-762</td>
<td>Food Service/Culinary Fundamentals 1</td>
</tr>
<tr>
<td>CULART-764</td>
<td>Food Service/Culinary Fundamentals 2</td>
</tr>
<tr>
<td>MDRAFT-741</td>
<td>Computer Aided Drafting 1</td>
</tr>
<tr>
<td>MDRAFT-742</td>
<td>Computer Aided Drafting 2</td>
</tr>
<tr>
<td>MDRAFT-743</td>
<td>Civil Engineering and Architecture I &amp; II</td>
</tr>
<tr>
<td>MDRAFT-746</td>
<td>3D Modeling and Design 1</td>
</tr>
<tr>
<td>AUTO1-745</td>
<td>Automobile Electrical Systems</td>
</tr>
<tr>
<td>AUTO1-746</td>
<td>Auto Minor Service (Chassis)</td>
</tr>
<tr>
<td>AUTO1-747</td>
<td>Auto Tune-Up and Emissions</td>
</tr>
<tr>
<td>AUTO1-748</td>
<td>Auto Engine Servicing</td>
</tr>
<tr>
<td>AUTO1-765</td>
<td>Auto Electrical Systems (Advanced)</td>
</tr>
<tr>
<td>AUTO1-766</td>
<td>Minor Service – Chassis (Advanced)</td>
</tr>
<tr>
<td>MDRAFT-747</td>
<td>3D Modeling and Design 2</td>
</tr>
<tr>
<td>OFTECH-735</td>
<td>Keyboard, Keypad and Windows</td>
</tr>
<tr>
<td>OFTECH-739</td>
<td>Business Operations Co-Op 1</td>
</tr>
<tr>
<td>OFTECH-740</td>
<td>Business Operations Co-Op 2</td>
</tr>
<tr>
<td>SMENG-761</td>
<td>Motorcycles/Outdoor Power Equipment 1</td>
</tr>
<tr>
<td>SMENG-762</td>
<td>Motorcycles/Outdoor Power Equipment 2</td>
</tr>
<tr>
<td>SMENG-763</td>
<td>Motorcycles/Outdoor Power Equipment 3</td>
</tr>
<tr>
<td>SMENG-764</td>
<td>Motorcycles/Outdoor Power Equipment 4</td>
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</tbody>
</table>

Adult High School Career Exploration Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAREER-710</td>
<td>Exploring Technical Careers</td>
</tr>
<tr>
<td>CAREER-719</td>
<td>Healthcare Concepts and Careers</td>
</tr>
<tr>
<td>CAREER-740</td>
<td>Success Strategies for School</td>
</tr>
<tr>
<td>CAREER-741</td>
<td>Career Preparation and Exploration 1</td>
</tr>
</tbody>
</table>

General Educational Development (GED) Certificate

Preparation classes and services for the GED test are offered days and evenings at all four MATC campuses, and at MATC Pre-College partner community-based organizations (CBOs). Online classes are also available. In addition, there is an accelerated GED option – an intense, eight-week preparatory program that integrates critical thinking skill development with cross-curricula concentration. Entrance into the accelerated preparatory program requires instructor or counselor recommendation.

The new GED 2014 test consists of four parts: Reasoning through Language Arts (RLA), Mathematical Reasoning, Science and Social Studies.

GED testing centers are located at the Downtown Milwaukee, Mequon, Oak Creek and West Allis campuses. At the Downtown Milwaukee Campus, GED testing is conducted in Room S215 in the Student Center.

If you plan to take the GED test, you must attend an orientation session and academic screening session. Call 414-297-7471.

For information about the GED call: Downtown Milwaukee Campus, 414-297-6233; Mequon Campus, 262-238-2300; Oak Creek Campus, 414-571-4711; West Allis Campus, 414-456-5492.

High School Equivalency Diploma (HSED)

To qualify for entrance into a degree or diploma program, you may enroll in MATC’s High School Equivalency Diploma (HSED) and/or General Educational Development (GED) programs. The GED/HSED programs offer excellent opportunities for students to develop academic skills in reading, English, mathematics, science and social studies. Classes are offered at all MATC campuses during the day, evenings and online.

High School Equivalency can also be earned by completing 24 postsecondary credits. For more information, call 414-297-7471.

Program for Emerging Scholars

Wisconsin Statute s.118.15 provides that a student who is 16 years of age or older and meets the statutory definition of being a child-at-risk may take classes leading to a high school diploma at a technical college. For information about this program, call 414-297-8661.

Basic Skills Classes

Classes in the Basic Skills program are designed to help bring reading, writing and mathematics skills up to the 12th-grade level. If you do not have a high school diploma or equivalent, the Basic Skills program and preprogram classes can prepare you to enter an associate degree or technical diploma program, pass your high school equivalency test, or enter the Adult High School.

Courses include basic reading, writing and math, as well as critical thinking and career exploration. The classes in the Basic Skills program are available to students at a minimal tuition charge; some classes are offered as open-entry/open-exit. Tutoring, English as a Second Language, career advising and access to the Academic Support Center, Writing Lab and Math Lab are available to students. Basic Skills services accommodate our special needs population, including the hearing impaired, visually impaired, and learning disabled. The bilingual program, described here in Spanish and Hmong, includes bilingual tutoring, advising and other support services that
help you acquire basic skills in your native language while you are gaining proficiency in English.

For more information, see the Course Descriptions at the end of this section, call 414-297-7864 or 414-297-7392, or view School of Pre-College Education information at matc.edu.

**Basic Skills Information for Spanish Speakers**

El objetivo principal del programa bilingüe de destrezas básicas es mejorar las destrezas de lectura, escritura, aritmética, así como la preparación del estudiante para tomar el examen de equivalencia de escuela superior o secundaria (GED).

Los cursos de este programa son enseñados en el idioma nativo del estudiante facilitando así la transición hacia el inglés.

Una vez registrado en el programa, el estudiante recibirá servicios de tutoría, consejería y, más aún, recibirá el apoyo y atención necesarios para lograr las metas académicas deseadas.

Estos cursos son ofrecidos al público por un costo minimo y con registración abierta durante todo el año. Para más información comuníquese al teléfono 414-297-8446.

**Basic Skills Information for Hmong Speakers**

Yog koj tsis tsi tao tao koj daim High School Diploma los yang daim GED, Basic Skills yog ib program uas yuav pab kom koj xeem dhau mus kawm txoj hauj lwm koi nyiam, kom koj xeem dhau GED, thiab koj koj mus kawm tau rau hauv Adult High School program. Cov koj hqia ntauw hauv Basic skills no tsim los hqia kom koj txawj nyeem ntauw, txawj sau ntauw thiab txawj siv tshuang ntauw “computer” los mus rau kev xaiv hauj lwm tib si. Cov hoob no yog hqia dawb rau koj xwb. Tseen muaj qee hoob cia koj sau npe kawm thiab rho npe tawm thauem twg los tau. Hos muaj qee hoob hqia raws semester.

Tsis tag li ntauw, MATC kuj muaj neeg pab koj thauem koj tseen kawm ntauw. Lawy yuav pab hqia koj tej qho koj tsis to taub zoo, txhais lus rau koj thiab daws koj tej teeb meem.

Yog koj xav paub ntxiv no, hu tus xov tooj 414-297-8147.

**Assessment and Advising**

Many MATC programs require that students meet basic skills requirements in reading, writing and math before being accepted into a program. When a student does not meet these program requirements, a counselor discusses with the student other options designed to improve these skills.

**Placement Assessment**

The basic skills course requirements for each student are determined by scores on the college’s placement assessment. These assessments help identify the student’s academic strengths and weaknesses. After completing the assessment, the student meets with the counselor to review the initial placement and plan for his or her first-semester program.

Basic skills assessment is available to any student. For more information call: Downtown Milwaukee Campus, 414-297-6233; Mequon Campus, 262-238-2300; Oak Creek Campus, 414-571-4566; West Allis Campus, 414-456-53310.

Basic skills assessment is also available at community-based organizations (CBOs) in the metro Milwaukee area. For CBO locations, call 414-297-6400.

**Bilingual Programs and Services**

The Office of Bilingual Education provides ongoing academic support and tutorial services to bilingual students enrolled in diploma and degree programs. Academic support services are provided in and out of the classroom, including:

- Admission to MATC
- Bilingual Accuplacer/admissions testing
- Scheduling and registration
- Degree, diploma and certificate programs information
- Financial aid information and application
- Information on translation and evaluation of school transcripts
- Counseling referrals
- Test proctoring
- Liaison between instructors and students
- Academic and tutorial support in and out of the classroom

MATC offers courses and programs taught in both Spanish and English. Bilingual courses are offered in business, health, early childhood education and other areas. For a listing of bilingual classes, go to INFOnline at matc.edu.

Bilingual associate degree, technical diploma and certificate programs are available.

English-language courses are offered to prepare students to enter MATC occupational programs such as automotive, air conditioning and heating, baking, cabinetmaking, carpentry and more.

For information about MATC’s bilingual classes, programs and services, email michelsb@matc.edu or VangC5@matc.edu, or call 414-297-7801 or 414-297-8147. The college’s Bilingual Education Office is located in Room M224 in the Downtown Milwaukee Campus Main Building.

For information about the GED exams (in Spanish), call 414-297-8446.

**Community-Based Services**

**Labor Learning Centers**

MATC operates two learning centers that are open to the general community. The centers present an exceptional opportunity for you to decide which subjects you want to study, develop an individualized learning plan with the assistance of an onsite instructor and work at your own pace and schedule. The Labor Learning Centers can help you build and/or strengthen your skills in reading, writing, math and blueprint reading, and earn a GED or high school equivalency diploma.

In partnership with HIRE, MATC operates the Labor Learning Centers in cooperation with the Wisconsin State AFL-CIO; the Milwaukee County Labor Council, Labor Participation Division; the United Way; and Brewery Workers Local 9. For more information, call the HIRE Center at 414-385-6920.
SCHOOL OF PRE-COLLEGE EDUCATION

Community-Based and Faith-Based Organizations
In addition to campus-based classes, a network of 42 community-based programs provides onsite basic skills instruction from the 0-12 grade level. These programs are located in many of the city’s neighborhoods. For information, call 414-297-6961.

At these outreach classrooms, MATC faculty provide English language instruction, native language literacy for Hmong/Lao and Spanish speakers, bilingual content instruction and family literacy. The locations are equipped with computers to supplement instruction in reading, writing, math and GED. All students have access to MATC counselors, facilities and resources.

Students attend these classes in order to learn new skills or brush up on skills; many students are studying for their GED or HSED. For more information, call 414-297-6961.

Dislocated Workers Learning Center
At the Dislocated Workers Learning Center, located at the HIRE Center, you can build or strengthen skills at your own pace, setting your own hours. Typical content areas include math, reading, writing, problem-solving and blueprint reading. For information, call 414-385-6920 or 414-297-7807.

Job Center Network Learning Labs
The Job Center Network, in collaboration with the W-2 lead agencies, offers adult literacy computer-assisted instruction. The programs are designed to help students increase basic academic skills, attain a GED and/or transition into postsecondary programs through the development of personal empowerment, academic plans and career plans. Educational activities assist students in obtaining the knowledge, skills and attitudes necessary for entry or advancement into high-wage/high-skill occupations as well as college-level programs.

English as a Second Language (ESL)
The English as a Second Language program can help individuals whose native language is not English. The program has two goals: to prepare students for postsecondary courses and programs; and to help students function more effectively in the community. They can learn in a variety of ways: group, individualized, computer-assisted language learning, Weekend College and online. Depending on their needs, students can choose courses in oral language development, vocabulary improvement, reading and writing skills, pre-employment English and computer skills. They can also get help in preparing for citizenship. Outreach programs for business and industry are available as well.

ESL Courses Include:

- ESL-711 Beginning ESL Literacy
- ESL-721 Low Beginning ESL
- ESL-731 High Beginning ESL
- ESL-751 Low Intermediate ESL
- ESL-771 High Intermediate ESL
- ESL-791 Advanced ESL
- ESL-792 Citizenship Preparation

For more information about outreach programs for business and industry, call 414-297-8320.

For enrollment information call: Downtown Milwaukee Campus, 414-297-6813 or 414-297-6583; Mequon Campus, 262-238-2364; Oak Creek Campus, 414-571-4663; West Allis Campus, 414-456-5409.

Each MATC course is identified by a grouping of two to six letters or letters and a numeral, and a set of three numbers.

For example, in the course number ENGB3-773, the letters ENGB3 form the alphabetical code that identifies the subject in which the course is taught. The sequence of courses in the Course Description section follows this alphabetic code. The three numbers 773 identify the type of course – the type of program in which the course is found. In this example, the course is an Adult High School course.

MATC courses numbered in the 700-799 range are Adult High School, Basic Skills and ESL courses.

High School Credit: 4,500 minutes of instruction (75 hours).

Noncredit/Developmental (Basic Skills and ESL): up to 36 55-minute periods of instruction.

School of Pre-College Education Alphabetical List of Subjects With Department Numbers:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Department</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO1</td>
<td>Auto Maintenance Technician</td>
<td>(404)</td>
</tr>
<tr>
<td>CAREER</td>
<td>Career Education</td>
<td>(862)</td>
</tr>
<tr>
<td>COMMB1</td>
<td>Communications/Level 1</td>
<td>(851)</td>
</tr>
<tr>
<td>COMMB2</td>
<td>Communications/Level 2</td>
<td>(851)</td>
</tr>
<tr>
<td>COMMB3</td>
<td>Communications/Level 3</td>
<td>(851)</td>
</tr>
<tr>
<td>COMMB4</td>
<td>Communications/Level 4</td>
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</tr>
<tr>
<td>COMMB5</td>
<td>Communications/Level 5</td>
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</tr>
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<td>COMMB6</td>
<td>Communications/Level 6</td>
<td>(851)</td>
</tr>
<tr>
<td>COMMH5</td>
<td>Communications – Adult High School</td>
<td>(851)</td>
</tr>
<tr>
<td>COMPUB</td>
<td>Computer Basics – Adult Basic Education/ABE</td>
<td>(860)</td>
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<tr>
<td>CULART</td>
<td>Culinary Arts</td>
<td>(316)</td>
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<tr>
<td>ENGB2</td>
<td>English/Level 2</td>
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</tr>
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<td>English/Level 4</td>
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<tr>
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<td>English/Level 5</td>
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<td>English/Level 6</td>
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<td>ESL</td>
<td>English as a Second Language</td>
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<td>HISTHS</td>
<td>History – Adult High School</td>
<td>(853)</td>
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<tr>
<td>HLTHHS</td>
<td>Health – Adult High School</td>
<td>(857)</td>
</tr>
<tr>
<td>INDSGN</td>
<td>Interior Design</td>
<td>(304)</td>
</tr>
<tr>
<td>MACTL</td>
<td>Machine Shop</td>
<td>(420)</td>
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<tr>
<td>MATHB1</td>
<td>Math/Level 1</td>
<td>(854)</td>
</tr>
<tr>
<td>MATHB2</td>
<td>Math/Level 2</td>
<td>(854)</td>
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<td>Math/Level 3</td>
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<td>Math/Level 6</td>
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<tr>
<td>MATHHS</td>
<td>Math – Adult High School</td>
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PRE-COLLEGE EDUCATION  COURSE DESCRIPTIONS

AUTO MAINTENANCE TECHNICIAN

AUTO1-745  Credits: 1
Automotive Electrical Systems
This course includes basic automotive electrical and fuel systems operations, diagnosis and repair techniques. Hands-on lab work is stressed, utilizing automotive components, mockups and simulators. Classroom instruction is used to reinforce the lab work.

AUTO1-746  Credits: 1
Automobile Minor Service (Chassis)
This course provides training in the areas of brake servicing, front-end repair and alignment, lube service, tire and wheel balancing, and cooling system service. The shop is well equipped with state-of-the-art equipment for instruction.

AUTO1-747  Credits: 1
Automobile Tune-Up and Emissions
Provides practical shop assignments and demonstrations. Lectures introduce students to the diagnostic and repair procedures used to maintain the ignition, fuel, emissions control, computerized engine control, starting and charging systems for today's automobiles. Work is performed on customer, industry-donated and student vehicles.

AUTO1-748  Credits: 1
Automobile Engine Servicing
This course enables students to describe and identify internal and external parts of an auto engine; describe and identify proper uses of tools used in servicing automobile engines; practice automotive machine shop skills using high-tech boring, and properly fitting all engine parts; and completely assemble an engine on stand and test run it for final engine performance.

AUTO1-765  Credits: 1
Automotive Electrical Systems (Advanced)
This course provides students the opportunity to enhance skills learned in Automotive Electrical Systems through repetition and further independent study. Prerequisite(s): AUTO1-745.

AUTO1-766  Credits: 1
Automobile Minor Service – Chassis (Advanced)
This course provides a student the opportunity to enhance skills learned in Automobile Minor Service through repetition and more detailed work with alignments. Prerequisite(s): AUTO1-746.

AUTO1-767  Credits: 1
Automobile Tune-Up and Emissions (Advanced)
This course provides students the opportunity to learn diagnostic and repair procedures pertaining to the ignition, fuel, emission control, computerized engine control, starting and charging systems. Prerequisite(s): AUTO1-747.

AUTO1-768  Credits: 1
Automobile Engines (Advanced)
This course provides students the opportunity to enhance skills learned in Automobile Engine Servicing through repetition and more hands-on experience. Prerequisite(s): AUTO1-748.

CAREER EDUCATION

CAREER-710  Credits: 1
Exploring Technical Careers
Through presentations in training labs, hands-on shop assignments, and onsite employer visits, students acquire familiarity with the skills, job opportunities, and salary expectations in the electricity/electronics industry. Emphasis is placed on technical careers in these areas.

CAREER-719  Credits: 1
Healthcare Concepts and Careers
This course examines the healthcare industry and explores various health careers. Concepts related to the various health careers such as medical terminology, anatomy and physiology are also included.

CAREER-725  Credits: 1
Career Exploration Seminar
Students engage in self-assessment activities that match their strengths and needs to career choices. Using Web-based information, students research and compare careers with special attention to the educational preparation needed for success. Students will tour MATC, and interview counselors, staff and/or faculty as they prepare a career portfolio. Nontraditional employment receives special attention.

CAREER-726  Credits: 2
Career Exploration – Business
Bilingual students will study Microsoft Windows, MS Word (word processing), MS Excel (spreadsheets), MS Access (database), and MS PowerPoint (presentation graphics) in this course. Students are also introduced to the World Wide Web and email. This is a good course for students having little or no computer background.

CAREER-740  Credits: 1
Success Strategies for School
Students identify the characteristics of a successful student, identify which characteristics they lack, and work to develop those traits. Students identify their learning styles and how they can use their styles to aid themselves in learning.

CAREER-741  Credits: 1
Career Preparation and Exploration 1
Analysis of strengths, weaknesses, personalities, aptitudes, attitudes, etc., is covered. Students match their strengths and needs to job opportunities, and assess job availability. Up-to-date job openings are examined, and students research two careers.

CAREER-742  Credits: 0.50
Career Preparation and Exploration 2
This course explains the steps of applying for and acquiring a job, and acquiring success in the workplace. Students learn how to fill out applications, write résumés and cover letters, and prepare for interviews. Authority and responsibility are discussed.

CAREER-743  Credits: 0.50
Career Preparation and Exploration 3
This course stresses the idea that success in the world of work depends on one's ability to perform the requirements of the position and to get along with others. It helps the students recognize the role that personality plays in the work environment.

CAREER-744  Credits: 0.50
Career Preparation and Exploration 4
This course deals with conflict, stress and discrimination. It is devoted to improvement of employer-employee communications. This module prepares the students for career development and will help them move up the career ladder.

CAREER-750  Credits: 0.10
GED Orientation Career Planning
Class participants are provided an overview of the various options available to those persons seeking high school equivalency diplomas. This class, which must precede the taking of the GED/HSED tests, also includes interest inventory and career decision-making activities that help participants develop a better focus on career options based on backgrounds, skills and job trends.

CAREER-757  Credits: 0.10
GED 2 Employability Skills
This course is designed to acquaint high school equivalency diploma students with major employment trends in the 21st century. In conjunction with the review and completion of sample applications, students are introduced to varied résumé and cover letter formats. Opportunities to explore the interview process are also provided, plus information on available resources pertaining to the development of academic, personal management and teamwork skills.

COMMUNICATIONS – LEVEL 1

COMMB1-711  Credits: 4
Basic Communications 1
Level 1 Communications emphasizes writing simple notes and messages on familiar situations. Students who successfully complete Level 1 Communications achieve beginning basic education benchmarks according to NRS guidelines.

COMMB1-712  Credits: 5
Oral Communications
This is an oral language development course. Students learn English vocabulary and grammatical conventions through listening.
conversing and presenting information. Course content is developed around themes of employment, citizenship, education and health.

COMMUNICATIONS – LEVEL 2

COMM2-721 Basic Communications 2
Level 2 Communications emphasizes basic writing tasks related to life roles, such as completing medical forms, order forms and job applications. Students write short reports and messages to fellow workers. Students self-edit and peer-edit for spelling and punctuation. Students who successfully complete Level 2 Communications achieve low intermediate education benchmarks according to NRS guidelines.

COMM2-755 Basic Communications for Workplace Learning
This course is open-entry, open-exit, individualized, computer- and video-aided instruction in the areas of reading, critical thinking, writing, listening, speaking, interpersonal-intrapersonal, small-group interaction and team development, with emphasis on needs of the workplace.

COMMUNICATIONS – LEVEL 3

COMM3-731 Basic Communications 3
Level 3 Communications emphasizes writing simple narrative descriptions and short essays on familiar topics. Students complete forms, such as job applications, and strive for consistent use of basic grammar and punctuation. Students who successfully complete Level 3 Communications achieve high intermediate education benchmarks according to NRS guidelines.

COMM3-798 Communication Skills for the GED
This course will prepare students for two of the four GED 2014 tests. For the Reasoning through Language Arts GED test, students will be asked to demonstrate competency in reading in both academic and workplace contexts. Writing tasks will require analysis of texts, using evidence drawn from the texts. Preparation for the Social Studies test will measure the student’s ability to read, understand, analyze and write about topics relevant to four major social science domains: civics and government, U.S. history, economics and geography.

COMMUNICATIONS – LEVEL 4

COMM4-741 Basic Communications 4
Level 4 Communications emphasizes writing complete compound and complex sentences, personal notes and letters that accurately reflect thoughts. Learners strive for writing that is organized and cohesive with few mechanical errors. Students who successfully complete Level 4 Communications achieve low adult secondary education benchmarks according to NRS guidelines.

COMMUNICATIONS – LEVEL 5

COMM5-751 Basic Communications 5
Level 5 Communications emphasizes using varied and complex sentence structure with few mechanical errors. Writing is cohesive with clearly expressed ideas supported by relevant detail. Students who successfully complete Level 5 Communications achieve high adult secondary education benchmarks according to NRS guidelines.

COMMUNICATIONS – LEVEL 6

COMM6-761 Basic Communications 6
Level 6 Communications emphasizes creating written documents, including a research paper. Learners express both written and spoken ideas in a clear, concise manner in a variety of settings. Learners who successfully complete Level 6 Communications are prepared to enter postsecondary education and/or obtain and maintain employment.

COMMUNICATIONS – ADULT HIGH SCHOOL

COMMHS-700 Write to Work
The student will learn the components of marketing oneself for employment and mastering workplace writing once employment is gained. Students will gather, analyze, organize information and generate a variety of written assignments. Students will explore the importance of specific writing skills in their chosen occupation.

COMMHS-703 World Literature 1
The major focus is short fiction, poetry and drama. Students learn literary terms and story elements, and will develop an understanding of the characteristics of various literary genres. Students will explore the works of culturally diverse authors, playwrights and poets.

COMMHS-704 World Literature 2
This course is a continuation of World Literature 1. Skills are built that go beyond World Literature 1 by delving deeper into other selections from authors representing a global view in literature. Writing is done using a word processor and reviewing mechanics of good writing.

COMMHS-705 American Literature 1
During this junior-level English course, American literature from the American Colonial Period to post-Civil War days is studied. A sampling of authors studied will include Nathaniel Hawthorne, Henry Wadsworth Longfellow, Louisa May Alcott and Chief Joseph. The mechanics of writing are reviewed as applied to story responses through word-processed compositions.

COMMHS-706 American Literature 2
During this junior-level English course, the study of American literature is continued, covering the mid-1800s to modern times. Authors studied include Langston Hughes, Robert Frost, Walt Whitman and Richard Wright. Writing complete and effective sentences is reviewed to enhance word-processed compositions.

COMMHS-711 Multicultural Literature 1
This course will study the rich literary genres of a variety of cultures such as African American, Chinese, Indian, Japanese, Jewish, Korean, Latino/Hispanic and Native American. Biographies, essays, poetry and short fiction readings may be supplemented by films to provide a broader appreciation of the literary contributions made by a variety of noted world authors.

COMMHS-712 Multicultural Literature 2
Students read and discuss authors of a variety of cultural backgrounds, such as Amy Tan, Richard Wright and Zora Neal Hurston. Students review the mechanics of good writing, including capitalization, punctuation and quotation marks, in order to enhance their weekly word-processed compositions.

COMMHS-713 Science Fiction Literature
This English class reads, discusses and analyzes science fiction short stories, novels and films. This course is designed to help students think about the impact rapid changes in medicine, technology and science will have on their future. Science fiction classics by Isaac Asimov, Ray Bradbury, H.G. Wells, George Orwell, Arthur Clarke, and other noted writers are introduced to students. Based on their readings, students will complete three written reports.

COMMHS-725 Composition
This course prepares students to compose materials for common purposes and audiences. It provides instruction in the process of writing and the practice of the specific skills needed to communicate effectively for writing in academic and occupational settings. The student will review basic grammar, sentence structure, and paragraph development to serve as a stepping stone for perfecting writing skills. Students further develop essay writing skills.
COMMHS-727  Credits: 1
Writing With a Word Processor
This course teaches students to use a word processor to assist in prewriting, composing, revising and editing their compositions.

COMMHS-730  Credits: 1
Language Arts Communication 1
This English class is a combination of literature, grammar and writing. Short stories, poems and plays will be read and discussed. Grammar lessons of sentence structure, parts of speech, punctuation and spelling will be taught and incorporated into writing activities. Students learn to understand and appreciate literature and to develop their writing skills.

COMMHS-731  Credits: 1
Language Arts Communication 2
This English class is a combination of literature, grammar and writing. Short stories, poems and plays will be read and discussed. Grammar lessons of the parts of speech, phrasing, clauses, sentences and punctuation will be reviewed and incorporated into writing activities. Students learn to understand and appreciate literature and to develop their writing skills.

COMMHS-732  Credits: 1
English Review and Mastery
This English class is an intense review of grammar, punctuation, capitalization, phrasing, clauses, sentence structure, spelling and vocabulary with a writing component. Writing assignments will include writing paragraphs, business letters, a résumé, reports and a research paper.

COMMHS-735  Credits: 1
Communications Via the Media
Students work to develop an understanding of the nature, techniques and impact of the mass media, as well as to develop an understanding of the nature and importance of media literacy in today's society. Emphasis is placed on news providers, particularly newspapers. Students practice written communication skills by writing a variety of features common in the newspaper.

COMMHS-750  Credits: 1
Speak for Yourself
This is a speech class designed to emphasize the importance of speaking well to facilitate effective communication. It will give students an opportunity to prepare and deliver speeches. The speeches will focus on everyday situations that one might encounter in family living, at school, at church, at work, in the community, and in the world. It will stress that effective communication skills are relevant and very pertinent to being successful.

COMMHS-755  Credits: 1
The Internet and Communication
Learn what you need to know to use the Internet effectively at home, school and work. Learn etiquette for writing email, as well as how to use common features of email programs, including organizing mail, sending attachments and using an address book. Don't just surf the Web, learn how to conduct effective searches, evaluate the information you find and protect your privacy. Compose and publish your own web pages. Increase the effectiveness of your website by including pictures and video, using cameras, scanners and graphics programs.

COMMUNICATIONS – POST HIGH SCHOOL

COMMPH-777  Credits: 4
Post High School Communication
This communications course is designed for high school graduates who require remedial work in communications to bring their Accuplacer Sentence Skills scores to a 60 or better or 76 to enter their program of choice.

COMPUTER BASICS

COMPUB-701  Credits: 1
Computer Basics – Adult Basic Education
This introductory course to computers requires no prior experience. Students learn basic functions, terminology, applications, and use of the keyboard and mouse. Topics covered are the history of the computer, computer terminology, operating system, hardware components, software packages, and mouse dexterity. Students create simple documents in Microsoft Word. Prerequisite(s): Must be enrolled in a Basic Skills course.

CULINARY ARTS

CULART-741  Credits: 1
Culinary Arts Exploration Co-Operative 1
This course focuses on introductory food service information and preparation. Key topics are food safety guidelines, sanitation, an introduction to tools and equipment, and basic principles of cooking and baking.

CULART-742  Credits: 1
Culinary Arts Exploration Co-Operative 2
This course concentrates on basic nutrition principles used in menu planning, cooking and baking. Special dietary menu and recipe adjustments are covered, as well as standard recipe conversions. Sandwich preparation, starch cookery, beverages and intermediate baking are explored.

CULART-743  Credits: 1
Culinary Arts Exploration Co-Operative 3
Purchasing and inventory control procedures in food service operations are studied. Fish and seafood cookery, garde manger work with fruits and vegetables, and more advanced baking are the focus.

CULART-744  Credits: 1
Culinary Arts Exploration Co-Operative 4
Food-service business methods such as merchandising, customer relations and restaurant operations will be studied. Advanced garde manger, international cuisines, meat cookery, and yeast dough baking are the lab focus.

CULART-762  Credits: 1
Food Service and Culinary Fundamentals 1
Students enrolled in the class are presented opportunities to learn food production and customer service skills in an actual-on-the-job setting used to teach skills needed to prepare food products, and to introduce students to the fundamentals of safety and sanitation practiced in a commercial kitchen.

CULART-764  Credits: 1
Food Service and Culinary Fundamentals 2
This course provides students the opportunity to enhance skills learned in CULART-762, allowing the student more hands-on experience.

ENGLISH – LEVEL 5

ENGBS-752  Credits: 4
Advanced Grammar and Usage
Targeted to non-native speakers of English, this course emphasizes oral communication. It explores the system of English grammar and the connection of grammar to reading, writing and understanding. This course also emphasizes sentence structure. Prerequisite(s): Consent is required to enroll in this course.

ENGLISH – LEVEL 6

ENGBS-762  Credits: 4
Pre-College Writing
This pre-college course provides instruction and practice in narrative, expository and persuasive writing, using the writing process. Revision skills emphasize the use of compound and complex sentence structure, transitions and appropriate word choice. Grammar mechanics and usage are reviewed. Development of a writing portfolio and oral presentation are required.

ENGLISH – POST HIGH SCHOOL

ENGPB-777  Credits: 5
Academic Transition Lab: Communications
This course is designed for students who have graduated from high school, or GED or HSED, who do not earn a high enough Accuplacer reading score to enter their desired college program.
ENGLISH AS A SECOND LANGUAGE

ESL-711 Credits: 5
Beginning ESL Literacy
This course is designed for those students who have minimal reading and writing skills in their native language and have no proficiency in oral or written English.

ESL-721 Credits: 5
Low Beginning ESL
This course is designed for those students who have minimal proficiency in oral or written English.

ESL-731 Credits: 5
High Beginning ESL
This course is designed for students who have some ability to function in a limited capacity in oral or written English, but still need assistance.

ESL-751 Credits: 5
Low Intermediate ESL
Individualized instruction and group study options offer opportunities for improvement in oral and written English for non-native speakers of the language. A pre-employment and/or preacademic focus is offered using a variety of instructional strategies.

ESL-771 Credits: 5
High Intermediate ESL
This course is designed for students who function independently in oral or written English but need more consistency in the control of language skills.

ESL-791 Credits: 5
Advanced ESL
Individualized and group study options offer opportunities for improvement in oral and written English for more advanced non-native speakers of English.

ESL-792 Credits: 2
Citizenship Preparation
This course is structured for those who wish to become U.S. citizens. Instruction will focus on important events in U.S. history, and on the organization and functions of federal, state and local governments. There will be practice in writing basic English sentences needed for the citizenship test.

HISTORY – ADULT HIGH SCHOOL

HISTHS-705 Credits: 1
American History 1
The history of the American people from 1400 to 1876 is covered. The course includes a careful study of the sectional controversy and the Reconstruction period that followed the Civil War.

HISTHS-706 Credits: 1
American History 2
In covering major developments in United States history from the 1870s to today, the topics surveyed are: Industrialization, the Progressive Era, Imperialism, World War I, the 1920s, the Depression and World War II.

HISTHS-707 Credits: 1
World History
The course will introduce students to a global view of human development from prehistoric times to 1900. Selected ancient civilizations include Mesopotamia/Iraq, Macedonia, Egypt, Africa, Greece, Rome, India, China, Japan and Oceania.

HISTHS-711 Credits: 1
Current History
Current local, national and international events and problems of importance are considered. Emphasis is placed upon each citizen’s obligation and responsibility to become well informed and to be an active member of his/her community.

HISTHS-715 Credits: 1
African-American History
This course examines the impact of African-Americans on America's social, economic, political and psychological development. The student is also introduced to various contributions made by African-Americans in politics, economics, art, literature and music.

HEALTH EDUCATION – ADULT HIGH SCHOOL

HLTHHS-700 Credits: 1
Wellness and Fitness Education
This lecture and lab course provides students with a contemporary approach to the total wellness concept, which includes physical, emotional, occupational, spiritual and environmental components. Students develop personal plans for lifetime wellness.

HLTHHS-711 Credits: 0.60
Adult Recreation 1
The class is designed to introduce students to the benefits of participation in fitness and sports activities. The course will expose students to a broad array of recreational opportunities, emphasize instruction and participation rather than competition, and introduce concepts that have potential for lifetime use.

HLTHHS-712 Credits: 0.60
Adult Recreation 2
This course is designed to further develop recreational skills and individual fitness techniques. Prerequisite(s): HLTHHS-711.

HLTHHS-730 Credits: 0.50
Health for Adults
This lecture course helps students make a realistic appraisal of their health and supplies them with strategies to improve nutritional awareness, stress management and physical fitness.

HLTHHS-744 Credits: 0.50
CPR and First Aid
This course develops lifesaving skills needed to become certified in American Heart Association Heart Saver and first aid. Skills include techniques for adult, child and infant victims. Successful course completion will result in a two-year certification.

HLTHHS-751 Credits: 0.40
Body Conditioning 1
This activity class provides students with specific training techniques used to develop and enhance muscular strength and endurance. The focus is on improving fitness as well as preparing for the physical demands of daily living.

HLTHHS-752 Credits: 0.40
Body Conditioning 2
This course teaches advanced strategies of body toning and progressive resistance training. Prerequisite(s): HLTHHS-751.

HLTHHS-763 Credits: 0.50
Dance/Aerobic Fitness 1
This course is a series of choreographed exercises to music with vigorous, continuous dance movements that strengthen the cardiovascular system. These exercises enhance flexibility, muscle conditioning and enhance weight control.

HLTHHS-764 Credits: 0.50
Dance/Aerobic Fitness 2
This course is a series of choreographed exercises to music with continuous, rhythmic aerobic movement; the advanced variations and styles enhance cardiovascular endurance, flexibility, muscle conditioning and weight control.

INTERIOR DESIGN

INDSGN-700 Credits: 1
Introduction to Interior Design
The principles of interior design are studied and applied to interior environments. Major emphasis is on solving interior problems utilizing the fundamentals of design. The course topics include furniture history, spatial planning, blueprint reading and color board presentations.

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MACHINE SHOP
MACHTL-716  Credits: 1
What Is Engineering? 1
Students will learn what math, science and communication skills are needed for engineering and other technology careers through real-world problem-solving. Students design and build projects illustrative of several technological career areas including: mechanical design, simple machine energy transfer, kinematics and robotics. Hands-on projects include: bridge building, ballistic devices, 3D animated design, robotic building and programming. Through these projects students experience the real-world applications of the math and science concepts. Exposure to current marketing and presentation principles will also be included.

MACHTL-717  Credits: 1
What Is Engineering? 2
Students will learn what math, science and communication skills are needed for engineering and other technology careers through real-world problem-solving. Students design and build projects illustrative of several technological career areas including: pneumatics, mechanical design software, civil engineering/surveying and more advanced robotics. Through these projects, students experience the real-world applications of the math and science concepts. A final comprehensive project will incorporate skills learned, plus current marketing and presentation principles. Prerequisite(s): MACHTL-716.

MATHB1-714  Credits: 4
Basic Arithmetic 1
Level 1 Mathematics develops number concepts, mathematical language and whole number topics. Participants learn to count, add and subtract three-digit numbers, and perform multiplication through 12. They identify simple fractions and perform other simple arithmetic operations. Students achieve beginning basic education benchmarks according to NRS guidelines.

MATHB2-724  Credits: 4
Basic Arithmetic 2
Level 2 Mathematics emphasizes the four basic math operations, using whole numbers up to three digits. Students can identify and use all basic mathematical symbols. They use critical thinking skills to problem solve, perform computations, estimate results, and to apply mathematics to real-world situations. Students achieve low intermediate basic education benchmarks according to NRS guidelines.

MATHB2-755  Credits: 1
Mathematics for Workplace Learning Centers
This course provides open-entry, open-exit, individualized instruction in the areas of math, science, problem-solving, and introduction to computers with a focus on the changing needs of the workplace.

MATHB3-734  Credits: 4
Basic Arithmetic 3
Level 3 Mathematics emphasizes the four basic math operations, using whole numbers and fractions. Students can determine the correct operation for solving narrative math problems, and can convert fractions to decimals and decimals to fractions. Students achieve high intermediate basic education benchmarks according to NRS guidelines.

MATHB3-798  Credits: 5
Mathematics for GED
The student examines and demonstrates competency in topically organized and content-based coursework in mathematics/science. General science concepts and strategies will be reviewed. A concentration on arithmetic, basic algebra and geometry comprises the math component.

MATHB4-744  Credits: 4
Basic Arithmetic 4
Level 4 Mathematics emphasizes all basic math functions and introduces simple algebraic expressions. Students can perform all basic math functions with whole numbers, decimals and fractions. They can interpret and solve simple algebraic equations, tables and graphs and can develop their own tables and graphs, and can use math in business transactions. Participants achieve low adult secondary education benchmarks according to NRS guidelines.

MATHB5-754  Credits: 4
Basic Arithmetic 5
Level 5 Mathematics emphasizes applying mathematical concepts, including algebra, geometry, trigonometry and probability. Students make mathematical estimates of time and space and apply the principles of geometry to measure angles, lines and surfaces. Students achieve high adult secondary education benchmarks according to NRS guidelines.

MATHB6-764  Credits: 4
Basic Arithmetic 6
Level 6 Mathematics emphasizes analyzing non-routine problems and arriving at a solution by various means. Students apply algebraic, geometric and trigonometric functions to solve problems.

MAHHS-701  Credits: 1
General Mathematics 1
This course deals with whole numbers (0,1,2,3,...), fractions and decimals. Topics include reading, writing and defining these numbers, as well as performing addition, subtraction, multiplication and division on them. Application of all these topics as related to everyday life situations is explored.

MAHHS-705  Credits: 1
Survey of Math Concepts
Are you experiencing difficulty remembering your basic (but important) math skills? If so, this course is for you. Topics covered include a review of the properties of the operations on whole numbers, decimals and fractions. Ratios, proportions and percents are reviewed. Also covered are some algebraic topics such as algebraic terminology, exploration of exponents, practice with the order of operations and an introduction to simple linear equations. Applications of these tools to daily life situations also are explored.
MATHHS-722  Credits: 1
Geometry 2
This course is equivalent to the first semester of high school geometry. Topics covered include similar polygons, right triangles, circles, and some right triangle trigonometry. The formulas for finding the areas of plane figures, and the area and volume of solid figures are developed and applied.

MATHHS-731  Credits: 1
Digital Logic for Electronics
This is an introductory course in digital logic. Students learn the logic functions through circuit-construction lab work and computer circuit-simulation software. Math content includes fundamentals of number systems through tables, basic Boolean algebra and Karnaugh maps used to explain and develop electronic circuits. The final project is assembling a programmable sensing robot. Students will find this class a helpful introduction to college-level digital electronics and an interesting exploration of the way electronic devices work.

MATHHS-742  Credits: 1
Computer Applications
This is a good beginning course that covers computer terminology and uses Windows. Topics include working with a word processor, spreadsheet and database. Math skills are applied in the spreadsheet and database sections. Prerequisite(s): One year of high school mathematics.

MATHMATICS – POST HIGH SCHOOL

MATHPH-701  Credits: 1
General Mathematics 1
A study is made of addition, subtraction, multiplication and division of real numbers. Topics include ratio and proportion, fractions and decimals. The course reviews basic arithmetic concepts and establishes the concepts required for taking a future course in algebra.

MATHPH-705  Credits: 1
Survey of Math Concepts
Are you experiencing difficulty remembering your basic (but important) math skills? If so, this course is for you. Topics covered include a review of the properties of the operations on whole numbers, decimals and fractions. Ratios, proportions and percents are reviewed. Also covered are some algebraic topics such as algebraic terminology, exploration of exponents, practice with the order of operations, and an introduction to simple linear equations. Applications of these tools to daily life situations also are explored.

MATHPH-707  Credits: 1
Consumer Math
This course is designed to help you with everyday consumer math skills; the math you should and do use all the time. You will learn a wide variety of personal and business math skills.

MATHPH-716  Credits: 1
Algebra 1A
This course has a brief review of fractions and decimals. The main course consists of the basic operations with real numbers, evaluating algebraic expressions, solving equations and inequalities with one variable, and operations with algebraic expressions.

MATHPH-717  Credits: 1
Algebra 1B
This course begins with factoring and the solution of quadratic equations by factoring. It also includes rational expressions, and ratio and proportion, and concludes with operations with algebraic expressions involving fractions. Prerequisite(s): MATHHS-716 or MATHPH-716.

MATHPH-721  Credits: 1
Geometry 1
A Euclidean geometry course with topics on angle relationships, perpendicular and parallel lines, and polygons. The deduction system is used to establish theorem statements, using direct and indirect proof. Prerequisite(s): MATHHS-717.

MATHPH-722  Credits: 1
Geometry 2
In this course, Geometry 1 is extended to include similar polygons, right triangles, circles, construction, and logic. Sets that describe areas and volumes, as well as the formulas for such sets, are presented.

MATHPH-731  Credits: 1
Digital Logic for Electronics
This is an introductory course in digital logic. Students learn the logic functions through circuit-construction lab work and computer circuit-simulation software. Math content includes fundamentals of number systems through tables, basic Boolean algebra and Karnaugh maps used to explain and develop electronic circuits. The final project is assembling a programmable sensing robot. Students will find this class a helpful introduction to college-level digital electronics and an interesting exploration of the way electronic devices work.

MATHPH-742  Credits: 1
Computer Applications
The features of a spreadsheet, database and word processor are covered using formulas to do complex calculations and charts. Students will learn the logic of setting up fields and querying a database. They will integrate this database and spreadsheet into a word processing document.

MATHPH-771  Credits: 5
Academic Transition Lab: Math
This course is designed for students who have graduated from high school, or GED or HSED, who do not earn a high enough Accuplacer math score to enter their desired college program.

MATHPH-777  Credits: 4
Post High School Math
This course is designed for high school graduates who require remedial work in math to bring their Accuplacer scores to the level needed to enter P/LI or their program of choice.

MECHANICAL TECHNOLOGY

MCDES-N-115  Credits: 2
What Is Engineering? Principles of Engineering
In this course, students will learn material testing, optical sensor technology. Hands-on projects will include bridge building, robotic systems, kinematics actions, hydraulic applications and field experience. Students will learn real-world applications of engineering with direction links to two- and four-year educational options.

MECHANICAL DRAFTING

MDRAF-N-41  Credits: 1
Computer-Aided Drafting – CAD 1
This course provides instruction for skills and knowledge of two-dimensional drafting using AutoCAD software. This includes the following: drawing setup, drafting 2D objects, editing entities, and creating and managing layers. Also covered are creating blocks, applying dimensional, and inserting hatch patterns and text. The focus is directed toward creating accurate drawings.

MDRAF-N-42  Credits: 1
Computer-Aided Drafting – CAD 2
This course continues to work with AutoCAD using advanced features and commands, such as blocks with attributes, references, spines, object linking and embedding, viewports, Model Space and Paper Space. More detail is given for drafting formats such as creating orthographic projections, isometrics and auxiliary views. Students also learn how to read a scale and convert hand draws to computer drawings. Prerequisite(s): MDRAF-N-41.

MDRAF-N-44  Credits: 1
Civil Engineering and Architecture I & II
This course provides an overview of the fields of civil engineering and architecture, while emphasizing the interrelationship and dependence of both fields on each other. Hands-on projects and activities include the use of BIM software. Course topics include the roles of civil engineers and architects, project planning, site planning, building design, and project documentation and presentation; 2D and 3D drawings are created.

For more information: matc.edu or 414-297-MATC.
MDRAFT-746  Credits: 1
3D Modeling and Design 1
Focus is on the seven stages of the design process, from problem identification to presentation. Emphasis is on developing a portfolio throughout the course, which documents class projects. Students will learn elements and principles of design, and develop sketching and visualization skills through hand sketching, annotated drawings and geometric relationships. Major emphasis is on Inventor software by Autodesk. Students will learn more advanced features of the software. Inventor software is used to teach model analysis, verification and documentation. Presentation techniques and marketing applications will also be covered. Prerequisite(s): M.DRAFT-746.

OFFICE/SYSTEMS TECHNOLOGY

OFFTECH-735  Credits: 1
Keyboard, Keypad and Windows
This is a competency-based course for learning the alphabetic and numeric keyboard using the touch method. In addition, the numeric keypad is presented. Students experience hands-on practice using a mouse, menus and Windows accessories. Furthermore, the student will format, type, print, edit and save simple documents using MS Word.

OFFTECH-737  Credits: 1
Basic Applications of Word Processing
Students will format, type and print documents, as well as edit a document using simple editing features, manipulate multiple-page documents, and create and edit simple tables.

OFFTECH-739  Credits: 1
Business Operations Co-Op Part 1
Class time consists of a variety of work-related sections designed to improve skills necessary for work with the portfolio. Areas to be covered will include: course and program orientation, communications and career development.

OFFTECH-740  Credits: 1
Business Operations Co-Op Part 2
Class time consists of a variety of work-related sections designed to improve skills necessary for work with the portfolio. Areas covered include database, spreadsheets, math concepts and financial record-keeping. Prerequisite(s): OFFTECH-739.

OFFTECH-741  Credits: 1.50
Business Co-Op Work Experience 1
Class time consists of a variety of work-related sections designed to improve entry-level clerical skills as defined by the portfolio. Among the areas to be covered will be a meeting preparation project, a project that is either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTECH-735.

OFFTECH-742  Credits: 1.50
Business Co-Op Work Experience 2
Class time consists of a variety of work-related sections designed to improve entry-level clerical skills as defined by the portfolio. Among areas to be covered will be a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTECH-741.

OFFTECH-743  Credits: 1.50
Business Co-Op Work Experience 3
Class time consists of a variety of work-related sections designed to improve entry-level clerical skills as defined by the portfolio. Among areas to be covered are a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTECH-742.

OFFTECH-744  Credits: 1.50
Business Co-Op Work Experience 4
Class time consists of a variety of work-related sections designed to improve entry-level clerical skills as defined by the portfolio. Among areas covered are a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTECH-743.

READB1-717  Credits: 4
Basic Reading 1
Level 1 Reading (grade equivalent 0-1.9) emphasizes reading simple material on familiar subjects and comprehending simple compound sentences in single or linked paragraphs containing a familiar vocabulary. Students who successfully complete Level 1 Reading achieve beginning basic education benchmarks according to NRS guidelines.

READB2-727  Credits: 4
Basic Reading 2
Level 2 Reading (grade equivalent 2.0-3.9) emphasizes reading text on familiar subjects that have a simple and clear underlying structure. Students use context to determine meaning and can interpret actions required in specific directions. They also read simple charts, graphs, labels, payroll stubs, and simple authentic material. Students who successfully complete Level 2 Reading achieve low intermediate basic education benchmarks according to NRS guidelines.

READB3-737  Credits: 4
Basic Reading 3
Level 3 Reading (grade equivalent 4.0-5.9) emphasizes reading text on familiar subjects or from which new vocabulary can be determined by context. Students read simple descriptions and narratives and can make some minimal inferences about familiar texts and compare and contrast information from texts. They also read authentic materials on familiar topics, such as simple employee handbooks. Students who successfully complete Level 3 Reading achieve high intermediate basic education benchmarks according to NRS guidelines.

READB4-747  Credits: 4
Basic Reading 4
Level 4 Reading (grade equivalent 6.0-8.9) emphasizes comprehension of a variety of materials, such as periodicals, non-technical journals on common topics, and expository writing. Students identify spelling, punctuation and grammatical errors and follow simple multi-step directions. Students identify the main idea in reading selections and use context to determine meaning. Participants who successfully complete Level 4 Reading achieve low secondary education benchmarks according to NRS guidelines.

READB5-757  Credits: 4
Pre-College Reading 5
Level 5 Reading (grade equivalent 9.0-10.9) emphasizes comprehension of a variety of literary works, including primary source materials and professional journals. Students will explain and analyze information, use context cues and higher order processes to interpret the meaning of written material, and will read technical information and complex manuals. Students who successfully complete Level 5 Reading achieve high adult secondary education benchmarks according to NRS guidelines.
PRE-COLLEGE EDUCATION COURSE DESCRIPTIONS

READING – LEVEL 6

READ6-767 Credits: 4
Pre-College Reading 6
Level 6 Reading (grade equivalent 11.0-12.9) emphasizes adapting strategies and skills to a variety of reading tasks and becoming a critical reader. Students apply prior experience and knowledge, use study skills, and transfer reading and vocabulary skills to a variety of printed and illustrative materials found in the workplace, school and everyday life. Students who successfully complete Level 6 Reading achieve a reading level comparable to the Wisconsin 12th grade exit standards for reading and are prepared to enter postsecondary education and/or obtain and maintain employment.

READ6-770 Credits: 1
Analytical Reading Strategies for Health Occupations
This one-credit course is designed to advance the analytical/scientific reading ability of students entering the health occupations, which require advanced reading skills. This course will introduce the student to analytical reading and comprehension strategies through applied practice. Prerequisite(s): Consent is required to enroll in this course.

READING – ADULT HIGH SCHOOL

READHS-711 Credits: 1
Developmental Reading 1
Do you want to build your reading confidence? Do you miss some important information when you read? This course will help students develop reading comprehension and vocabulary strategies. The class will read a short novel as well as current magazine and newspaper articles. Students also practice critical thinking topics are explored through guided reading, independent reading, reading-writing connections, literature circles, reading intervention, reading aloud, vocabulary exploration and content area.

READHS-714 Preparation for Accuplacer Seminar
This is an eight-hour in-depth workshop designed for students prior to taking the Accuplacer test. Its purpose is to help students become familiar with the test and develop a more user-friendly attitude toward the Accuplacer.

READHS-772 Reading for Non-Traditional Occupations 1
This course is designed for high school students exploring non-traditional occupations who need to improve their reading and writing competencies.

READHS-773 Reading for Non-Traditional Occupations 2
This course is designed for high school students exploring non-traditional occupations who need to improve their reading and writing competencies.

READING – POST HIGH SCHOOL

READPH-771 Credits: 5
Academic Transition Lab: Reading
This course is designed for students who have graduated from high school, or GED or HSED, who do not earn a high enough Accuplacer reading score to enter their desired college program.

READPH-777 Post High School Reading
This reading course is designed for high school graduates who require remedial work in reading to bring their Accuplacer score up to the 55 needed to enter PLI or 70 to enter their program of choice.

SCIENCE – LEVEL 2

SCIB2-741 Credits: 2
Basic Skills Science
Students apply scientific terminology and concepts to develop job skills and learning skills, and integrate the scientific method to aid in the discovery of specific science content of biology, earth science, chemistry and physics, as well as prepare the student for the GED science test. The student’s observation and practical skills will be enhanced through lab and hands-on experience.

SCIENCE – ADULT HIGH SCHOOL

SCIIH-701 Credits: 1
General Science 1
Designed to give students a better understanding of the environment, this course demonstrates the importance of the sciences in everyday life. Topics include matter, energy, electricity and heat. Includes class demonstrations and group experiments.

SCIIH-702 Credits: 1
General Science 2
This course is a study of our changing planet and the makeup of our living world. Topics include geology, weather, climate, the universe, life on earth, ecology, the human body, and environmental problems.

SCIIH-703 Credits: 1
Biology 1
Students obtain an overview of biology and learn about the basic tools for biology, the chemical and structural basis of life, genetics and microbiology through lecture and labs.

SCIIH-704 Credits: 1
Biology 2
Students develop an understanding of the anatomy and physiology of animals, with an emphasis on human biology, through lecture, dissections and experiments.

SCIIH-705 Credits: 1
Chemistry 1
The language and logic of chemistry are developed by studying elements, compounds and mixtures; atomic structure; the periodic table and the Periodic Law; chemical bonding; naming of compounds; the writing of formulas; and other topics. Prerequisite(s): MATHHS-716 or MATHPH-716.
SCIHS-706  Credits: 1  
Chemistry 2  
Instruction is continued in the laws and principles of chemistry through a study of oxygen, hydrogen, carbon, the properties of gases, the kinetic theory of matter, ionization, solutions, oxidation-reduction, radioactivity, and additional topics. Prerequisite(s): SCIHS-705 or SCIPH-705.

SCIHS-715  Credits: 1  
Environmental Biology  
This is a continuation of Biology 1 and 2. Students will develop an awareness of the interrelationships and interactions of life and the environment through lecture and through labs. Topics will include plant life, evolution and ecology.

SCIHS-720  Credits: 1  
Bioethics  
Biological science and technology offer both promise and problems. They greatly influence our lives and will shape our future. In bioethics, students will learn the biology and technology of science and society issues; society will have to make decisions on these issues that will have an effect on people. Students will then research the issues, and discuss the controversy related to the issues and their major impact on society. Topics may include abortion, cloning, stem cells, genetic engineering, evolution, the rain forest, pollution, recycling, alternative energy sources and more.

SCIHS-750  Credits: 1  
Physical Science 1  
This course teaches the nature of science while incorporating physics, chemistry, earth science and space science. Topics include nonliving matter, scientific problem-solving, metric measurement, nature of chemicals, periodic tables, force, acceleration, momentum, work, power and machines.

SCIHS-751  Credits: 1  
Physical Science 2  
Physical Science 2 is a course designed to teach the nature of science while incorporating physics, chemistry, earth science and space science. Topics will include heat and temperature, waves, communication and technology, the solar system, the universe, Earth, the atmosphere, and using natural resources.

SCIIPH-701  Credits: 1  
General Science 1  
Designed to give students a better understanding of the environment, this course demonstrates the importance of the sciences in everyday life. Topics include matter, energy, electricity and heat. Includes class demonstrations and group experiments.

SCIIPH-702  Credits: 1  
General Science 2  
A study of our changing planet and the makeup of our living world. Topics include geology, weather, climate, universe, life on earth, ecology, the human body, and environmental problems.

SCIPH-703  Credits: 1  
Biology 1  
Students will obtain an overview of biology, and learn about the basic tools for biology, the chemical and structural basis of life, genetics and microbiology through lecture and labs.

SCIPH-704  Credits: 1  
Biology 2  
Students will develop an understanding of the anatomy and physiology of animals, with an emphasis on human biology, through lecture, dissections and experiments.

SCIPH-705  Credits: 1  
Chemistry 1  
The language and logic of chemistry are developed by studying elements, compounds and mixtures; atomic structure; the periodic table and the Periodic Law; chemical bonding; naming of compounds; the writing of formulas; and other topics. Prerequisite(s): MATHHS-716 or MATHPH-716.

SCIPH-706  Credits: 1  
Chemistry 2  
Instruction is continued in the laws and principles of chemistry through a study of oxygen, hydrogen, carbon, the properties of gases, the kinetic theory of matter, ionization, solutions, oxidation-reduction, radioactivity, and additional topics. Prerequisite(s): SCIHS-705 or SCIPH-705.

SCIPH-715  Credits: 1  
Environmental Biology  
This is a continuation of Biology 1 and 2. Students will develop an awareness of the interrelationships and interactions of life and the environment through lecture and through labs. Topics will include plant life, evolution and ecology.

SCIPH-750  Credits: 1  
Physical Science 1  
This course teaches the nature of science while incorporating physics, chemistry, earth science and space science. Topics include nonliving matter, scientific problem-solving, metric measurement, nature of chemicals, periodic tables, force, acceleration, momentum, work, power and machines.

SCIPH-751  Credits: 1  
Physical Science 2  
Physical Science 2 is a course designed to teach the nature of science while incorporating physics, chemistry, earth science and space science. Topics will include heat and temperature, waves, communication and technology, the solar system, the universe, Earth, the atmosphere, and using natural resources.

SCINECE – POST HIGH SCHOOL

SCIPH-701  Credits: 1  
General Science 1  
Designed to give students a better understanding of the environment, this course demonstrates the importance of the sciences in everyday life. Topics include matter, energy, electricity and heat. Includes class demonstrations and group experiments.

SCIPH-702  Credits: 1  
General Science 2  
A study of our changing planet and the makeup of our living world. Topics include geology, weather, climate, universe, life on earth, ecology, the human body, and environmental problems.

SMENG-761  Credits: 1  
Motorcycles and Outdoor Power Equipment 1  
This course is designed to introduce the student to basic internal combustion machinery. Students will be introduced to the theoretical workings of gasoline-driven motors. The mathematics of American standard and metric measurements will be discussed. Commonly used tools and specialty tools will be explained. Students will be able to apply this knowledge to small engines used for lawn mowers and lawn tractors. Students will be able to take apart and assemble motors, replace components and repair broken engines. Students will also work on self-driven mowers and work on transmissions of lawn tractors.

SMENG-762  Credits: 1  
Motorcycles and Outdoor Power Equipment 2  
This course introduces motorcycle repair and all-terrain vehicles (ATVs) to students. The focus of this course is to experience reading service manuals in order to understand how to repair motorcycles and ATVs from different manufacturers. Motorcycle and ATV engines, drivetrains and carbureted fuel systems are the main emphasis of this course. Students will learn about the operations of engines through hands-on applications by assembling and replacing pistons, rings, valves, crankshafts, cams, bearings, bushings, carburetor slides, choke mechanisms and all other engine components. Students will use American standard, metric and specialty tools. They will be able to start and tune engines, and will experience how to use diagnostic tools that read the internal workings of an operating engine. Prerequisite(s): SMENG-761.

SMENG-763  Credits: 1  
Motorcycles and Outdoor Power Equipment 3  
This course continues teaching students about the operations and repairs of motorcycles and all-terrain vehicles (ATVs) and can be used as the launching point for students who may be interested in pursuing a career in motorcycle repair. Students will experience and learn more diagnostic procedures. Fine-tuning and increased performance will be the focus of this course. Students will be introduced to electrical components and fuel injection systems. Drivetrain components, such as clutches, gear ratios and transmissions, will be discussed and worked on. Chain drivers and direct drives will be available to work on. More specialty tools will be used. Prerequisite(s): SMENG-762.
SMENG-764  Credits: 1  
**Motorcycles and Outdoor Power Equipment 4**  
The focus of this course will be engine performance, fuel injection and the electronics of outdoor recreational vehicles. Students will learn how to read diagnostic equipment and will learn basic wiring fundamentals. Electrical language will be taught. Students will learn about reading electrical instruments and how to perform basic troubleshooting techniques, repair and install wiring systems and learn the interrelations of the engine’s electrical components of battery, coils, fuel system, ignition, rectifiers, lights, etc. Students will be exposed to replacing old components with newer components for better performance and reliability. Prerequisite(s): SMENG-762.

**SOCIAL SCIENCE – LEVEL 2**

SOCHS-742  Credits: 3  
**Basic Social Studies**  
The content of this course is delivered in two languages. Its goal is to mainstream new immigrants into society. The student will acquire the basic social studies concepts in behavioral sciences, U.S. history, political science, economics and geography that will allow the development of a personal response to social issues. In addition, students will learn to compare, contrast and summarize cultural features.

**SOCIAL SCIENCE – ADULT HIGH SCHOOL**

SOCHS-701  Credits: 1  
**American Government**  
A study is made of American democracy. Topics include political principles, documents, and the development of rights of a free people. Emphasis is placed upon three major areas: the Congress, the presidency and the Supreme Court.

SOCHS-704  Credits: 1  
**Economics**  
A study of the challenge to use limited resources to satisfy unlimited human wants for goods and services. This course attempts to explain how humans and nations resolve this problem.

SOCHS-709  Credits: 1  
**United States Geography**  
This introductory course in geography deals with the physical and economic elements of the earth. It includes a discussion of climates and maps.

SOCHS-710  Credits: 1  
**World Geography**  
The study of the physical and economic elements of the earth is continued. The course includes the study of Asia, Australia, and North America and South America. World trade, conservation, and underdeveloped areas are discussed.

SOCHS-714  Credits: 1  
**Personal Economics**  
Students research, plan, implement and assess their short- and long-term personal economic future. Students will focus on practical skills that can be applied to improving their personal finances.

SOCHS-715  Credits: 1  
**Introduction to the Social Sciences**  
This course provides an introduction to the basic concepts of the seven major social sciences: psychology, sociology, anthropology, geography, history, political science and economics. Additional course content deals with developing effective thinking and study skills.

SOCHS-724  Credits: 1  
**Human Relations**  
This course is designed to aid in improving oneself and one’s relations with others. Emphasis is placed upon areas such as heightening self-awareness, conflict resolution, and improving communication.

SOCHS-725  Credits: 1  
**Coping and Wellness**  
This course covers issues confronting students in today’s society such as: anger management, substance abuse, street crime, poverty, etc. Efforts will be made to have students interact with community leaders and healthcare professionals, as well as perform in-class projects.

SOCHS-750  Credits: 0.50  
**Civil Literacy**  
In this course, the student learns the basic principles expressed in important political documents in U.S. history, as well as the relationships between national, state and local governments.

SOCHS-752  Credits: 0.50  
**Advanced Civic Literacy**  
The student will expand upon his/her knowledge obtained in Civic Literacy. The emphasis is on researching material from the internet and other resources. Students also watch or participate in government functions.

SOCHS-761  Credits: 1  
**Sociology**  
This course develops an awareness of the social structures, social processes and institutions that make up society. By analyzing the various societal processes and structures, it enables the student to relate to group experiences.

SOCHS-762  Credits: 1  
**Sociology 2: Social Problems**  
This course considers the dynamic political and socio-economic factors that operate within a metropolitan area and influence our daily lives. Current trends having significant effects on urban areas also are discussed.

SOCHS-781  Credits: 1  
**Civil Law 1**  
This course clarifies how ours is a government of laws and not of people. It reinforces the concept that good citizens possess knowledge about law and government while participating in the legal system. It explores and explains the criminal justice system, while providing students with practical information and problem-solving opportunities that develop the knowledge and skills.

SOCHS-783  Credits: 1  
**Civil Law 2**  
This course explains how and why discretion is exercised by criminal justice personnel from arrest through sentencing. It explores the critical events that occur before, during and after a trial. In addition, this course provides a practical understanding of law and the legal system, which will be useful to students in their everyday lives, and improves the understanding of fundamental principles and values underlying our Constitution, laws and legal system.

SOCHS-791  Credits: 1  
**Civil Law 1**  
This course clarifies how ours is a government of laws and not of people. It reinforces the concept that good citizens possess knowledge about law and government while participating in the legal system. It explores and explains the civil tort system, while providing students with practical information and problem-solving opportunities that develop knowledge and skills. In addition, this course provides a practical understanding of lawsuits that will be of use to students in their everyday lives. It provides awareness of current tort issues and controversies related to the law and the legal system.

SOCHS-793  Credits: 1  
**Civil Law 2**  
This course is designed to provide students with practical information and problem-solving opportunities that develop the knowledge and skills necessary for survival in a consumer-oriented society. The course explores and explains some of the major components of consumer law. It provides students with the ability to analyze, evaluate, and, in some situations, resolve consumer-related legal problems.
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For a listing of MATC faculty, additional administration and staff, visit: matc.edu/about/human_resources/upload/MATC-Credential-Information-Directory.pdf

CAMPUS LOCATIONS

Downtown Milwaukee Campus
700 West State Street
414-297-MATC

Mequon Campus
5555 West Highland Road
262-238-2200

Oak Creek Campus
6665 South Howell Avenue
414-571-4500

West Allis Campus
1200 South 71st Street
414-456-5500

For more information: matc.edu or 414-297-MATC.
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State and federal laws include the concept of “reasonable accommodation” as a key element in providing equal opportunity and access to programs and services for students with disabilities.