MATC.EDU/APPLY | 414-297-MATC

2020-21 CATALOG

YOUR GUIDE TO MILWAUKEE AREA TECHNICAL COLLEGE

MATC Milwaukee Area Technical College

Transforming Lives, Industry & Community

MATC PROMISE

The MATC Promise means free tuition for eligible students!

The MATC Promise for New High School Graduates

In the 2020-21 school year, MATC will welcome its fifth class of MATC Promise students. First launched in 2015, the MATC Promise was the first program of its kind in Wisconsin, helping to make college an option for students who never thought it was possible. This public-private "last dollar" partnership covers tuition, after other grants and scholarships are applied, for up to 75 credits. The cost of books, program fees and equipment are not covered by the Promise program.

The MATC Promise for Adults

In 2018, MATC launched the MATC Promise for Adults, one of the first programs of its kind in the U.S. The MATC Promise for Adults supports students who started college but did not finish. Eligible students can qualify for up to 75 credits of free tuition — after other scholarships and grants are applied — to complete an in-demand associate degree or technical diploma. The Promise also provides support to help students stay on track to graduate and connect to a career. The cost of books, program fees and equipment are not covered by the Promise program.

For details, visit matc.edu/promise.

On the Cover

Joaquín Altoro, CEO and executive director of the Wisconsin Housing and Economic Development Authority (WHEDA) and former MATC student, delivers the keynote speech during MATC's 2019 Winter Commencement.

Equal Opportunity and Affirmative Action Commitment

Milwaukee Area Technical College's commitment to equal opportunity in admissions, educational programs, and employment policies assures that all individuals are included in the diversity that makes the college an exciting institution. MATC does not discriminate against qualified individuals in employment or access to courses, programs, or extracurricular activities on the basis of race, color, national origin, ancestry, religion, creed, sex, sexual orientation, age, disability, pregnancy, marital status, parental status, or other protected class status. The lack of English skills shall not be a barrier to admission or participation in any MATC program or service.

MATC will comply fully with state and federal Equal Opportunity and Affirmative Action laws, executive orders, and regulations. Direct questions concerning application of this policy to the MATC Affirmative Action Officer, 700 West State Street, Milwaukee, WI 53233-1443.

It is the policy of MATC to provide reasonable accommodations for all students, or applicants for admission, who have disabilities (see Discrimination Against Individuals With Disabilities Policy C0203). MATC will adhere to all applicable federal and state laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal opportunity and access to programs and services for students with disabilities. Reasonable accommodations will be provided in a timely and cost-effective manner. Access shall not be denied because of the need to make reasonable accommodations for an individual's disability.

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.

Choose MATC for a Brighter Future

Since 1912, MATC has been preparing students for a wide range of careers and we're proud to continue helping students reach their personal and professional goals. Today, the college serves more than 30,000 students.

Many people are choosing MATC to get where they want to be in life. No matter what your individual goals, MATC can serve as the path to a brighter, more fulfilling future. We remain dedicated to transforming lives, industry and community.

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This catalog was prepared according to information current as of January 15, 2020. All information is subject to change.

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

Seven Academic & Career Pathways, Seven Roads to Success

Here's a brief overview of our Academic & Career Pathways. Pathways are designed to put you on the path to success: graduation and a career, transferring to a four-year university or both. Choose the Pathway that fits your passion – or let us help you explore careers that match your skills, interests and experience. Be sure to check program and course descriptions for a complete picture of what MATC offers!

See pages 24-28 for details.

Business & Management
Academic & Career Pathway

Do you want to begin a career in accounting, business management or finance? Have you ever thought about becoming an entrepreneur, or working in real estate? Our Business & Management Pathway covers all these fields, and so much more, with comprehensive courses designed to take you to the next level.

Community & Human Services
Academic & Career Pathway

Does being an EMT or paralegal sound right for you? How about being a barber or a child care provider? If so, you'll want to check out our Community & Human Services Pathway, which prepares you to help others through a variety of careers focused on service.

Creative Arts, Design & Media
Academic & Career Pathway

Whether your goal is to earn an associate degree or technical diploma, transfer to a four-year college or start a career, this pathway prepares you to showcase your creative talents. Programs range from animation to TV/video production, baking to interior design.

General Education
Academic & Career Pathway

Many students choose this pathway as their route to a four-year degree. You can fulfill many of the general education requirements for a bachelor's degree. That way, you could start at your four-year school with junior standing, and dive into courses for your selected major.

Healthcare Services
Academic & Career Pathway

MATC offers cutting-edge programs so you can become a healthcare provider and strengthen the well-being of our community. We work with healthcare organizations to offer innovative clinical and cultural immersion experiences for our students. Come visit our state-of-the-art dental clinic, simulation labs and food science kitchen!

Manufacturing, Construction & Transportation
Academic & Career Pathway

If you are looking to further your education by obtaining an associate degree or technical diploma, or experience on-the-job training with an apprenticeship, explore this pathway to prepare for a career in manufacturing, construction or transportation industries.

STEM (Science, Technology, Engineering & Math)
Academic & Career Pathway

If you are seeking an education and career that embraces your technical aptitude and challenges your analytical side, the STEM Pathway has a home for you! This pathway includes advanced manufacturing, civil engineering, electronics technology, information technology and more.

Academic & Career Pathways

Milwaukee Area Technical College

Contact Information and Locations

Campus Locations

Downtown Milwaukee Campus
700 West State Street
Milwaukee, WI 53233
414-297-MATC

Mequon Campus
5555 West Highland Road
Mequon, WI 53092
262-238-2200

Oak Creek Campus
6665 South Howell Avenue
Oak Creek, WI 53154
414-571-4500

West Allis Campus
1200 South 71st Street
West Allis, WI 53214
414-456-5500

Education Center

MATC Education Center at Walker's Square

816 West National Avenue
Milwaukee, WI 53204
414-302-2648

Find Us on Social Media

#ProudToBeMATC

Contact Us

Business & Management

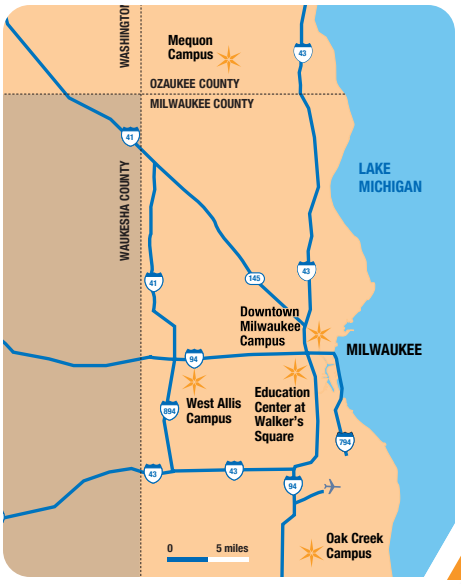
Academic & Career Pathway
Downtown Milwaukee Campus,
Main Building, Room M312-314
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-456-5323, Business-Management-Pathway@matc.edu

Community & Human Services

Academic & Career Pathway
Downtown Milwaukee Campus,
T Building, Room T200
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-570-4426, Community-Human-Services-Pathway@matc.edu

Creative Arts, Design & Media

Academic & Career Pathway
Downtown Milwaukee Campus,
C Building, Room C210
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-297-6004, CreativeArts-Design-Media-Pathway@matc.edu



General Education

Academic & Career Pathway
Downtown Milwaukee Campus,
C Building, Room C210
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-297-6584, General-Education-Pathway@matc.edu

Healthcare Services

Academic & Career Pathway
Downtown Milwaukee Campus,
H Building, Room H116
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
262-238-2281, Healthcare-Services-Pathway@matc.edu

Manufacturing, Construction & Transportation

Academic & Career Pathway
Downtown Milwaukee Campus,
T Building, Room T200
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-297-8901, Manufacturing-Construction-Transportation-Pathway@matc.edu

STEM

Academic & Career Pathway
Downtown Milwaukee Campus,
Main Building, Room M312-314
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
414-297-6319,
STEM-Pathway@matc.edu

For a full listing of key college telephone numbers go to **matc.edu** then click the **Menu** and select **Contact Us**.

Associate Degrees, Technical Diplomas and Certificates

Business & Management
Academic & Career Pathway
Accounting (10-101-1), **A**
Accounting Assistant (31-101-1), **T**
Accounting Bookkeeper Trainee, **C**
Administrative Professional (10-106-6), **A**
Banking and Financial Services (10-114-3), **A**
Bilingual Office Assistant (31-106-6), **T**
Business Analyst (10-102-1), **A**
Business Management (10-102-3), **A**
Business Management (31-102-3), **T**
Business Management Trainee, **C**
Digital Marketing and Integrated Communications (31-104-9), **T**
Entrepreneurship (31-145-2), **T**
Entrepreneurship, **C**
Event Management (10-109-6), **A**
Financial Services (31-114-3), **T**
Financial Services Trainee, **C**
Foundations of Lodging and Hospitality Management (31-109-5), **T**
Hotel/Hospitality Management (10-109-1), **A**
Human Resources (10-116-1), **A**
Marketing (10-104-3), **A**
Marketing – Online Accelerated (10-104-3), **A**
Medical Administrative Specialist (10-160-4), **A**
Medical Billing (31-160-5), **T**
Office Technology Assistant (31-106-1), **T**
Property Management, **C**
Real Estate (10-194-1), **A**
Real Estate Broker Associate (30-194-1), **T**
Real Estate Salesperson, **C**
Sales and Customer Experience (30-104-10), **T**
Special Event Management (31-109-2), **T**
Supply Chain Management (10-182-1), **A**
Supply Management (30-182-1), **T**
Transportation – Logistics (30-182-2), **T**

Community & Human Services
Academic & Career Pathway
Aesthetician (30-502-3), **T**
Barber (31-502-5), **T**
Child Care Services (31-307-1), **T**
Cosmetology (31-502-1), **T**
Criminal Justice Studies (10-504-5), **A**
Early Childhood Education (10-307-1), **A**
Emergency Medical Technician (30-531-3), **T**
Emergency Medical Technician – Advanced (30-531-6), **T**
Emergency Medical Technician – Paramedic (31-531-1), **T**
Environmental Health and Water Quality Technology (10-506-1), **A**
Fire Protection Technician (10-503-2), **A**
Funeral Service (10-528-1), **A**
Human Service Associate (10-520-3), **A**
Paralegal (10-110-1), **A**
Paralegal Studies (30-110-2), **T**
Preschool, **C**
Water Technician, **C**

Creative Arts, Design & Media
Academic & Career Pathway
Animation (10-207-1), **A**
Audio Engineer (30-701-1), **T**
Audio Production (10-701-4), **A**
Baking and Pastry Arts (10-314-1), **A**
Baking Production (31-314-2), **T**
Computer Simulation and Gaming (10-153-1), **A**
Culinary Arts (10-316-1), **A**
Culinary Assistant (31-316-1), **T**
Digital Imaging (30-203-1), **T**
eProduction (10-701-3), **A**
Food Service Assistant (30-316-1), **T**
Front-End Web Developer (31-206-1), **T**
Graphic Design (10-201-1), **A**
Interior Design (10-304-1), **A**
Music Occupations (10-805-1), **A**
Photography (10-203-1), **A**
Production Artist (31-201-2), **T**
Television & Video Production (10-701-1), **A**
TV/Video Field Production Assistant (31-701-1), **T**
TV/Video Studio Production Assistant (31-701-2), **T**
Unity Developer (31-153-1), **T**
Web & Digital Media Design (10-201-3), **A**

General Education
Academic & Career Pathway
Associate of Arts (20-800-1), **A**
Associate of Arts: Online Accelerated (20-800-1), **A**
Associate of Arts – Community Engagement: Pre-Major (20-800-1), **A**
Associate of Arts – Global Studies: Pre-Major (20-800-1), **A**
Associate of Arts – Teacher Education: Pre-Major (20-800-1), **A**
Associate of Science (20-800-2), **A**
Associate of Science – Chemical Technology: Pre-Major (20-800-2), **A**
Associate of Science – Economics: Pre-Major (20-800-2), **A**
Chemical Processing Technician (31-603-1), **T**
Chemical Technician (10-603-1), **A**
Individualized Technical Studies (10-825-1), **A**

Healthcare Services
Academic & Career Pathway
Anesthesia Technology (10-541-1), **A**
Cardiovascular Technology – Echocardiography (10-521-2), **A**
Cardiovascular Technology – Invasive (10-521-1), **A**
Central Service Technician (30-534-1), **T**
Dental Assistant (30-508-2), **T**
Dental Hygiene (10-508-1), **A**
Dietary Manager, **C**
EKG Technician, **C**
Health Information Technology (10-530-1), **A**
Health Unit Coordinator, **T**
Healthcare Customer Service, **C**
Healthcare Services Management (10-530-3), **A**
Medical Assistant (31-509-1), **T**
Medical Coding Specialist (31-530-2), **T**
Medical Interpreter (31-538-1), **T**
Medical Laboratory Technician (10-513-1), **A**
Nursing Assistant (30-543-1), **T**
Nutrition and Dietetic Technician *formerly Dietetic Technician* (10-313-1), **A**
Occupational Therapy Assistant (10-514-1), **A**
Pharmacy Technician (31-536-1), **T**
Phlebotomy (30-513-1), **T**
Physical Therapist Assistant (10-524-1), **A**
Practical Nursing (31-543-1), **T**
Practical Nursing LPN-RN Educational Progression (10-543-10), **A**
Radiography (10-526-1), **A**
Registered Nursing (10-543-1), **A**
Renal Dialysis Technician (31-517-1), **T**
Respiratory Therapist (10-515-1), **A**
Surgical Technology (10-512-1), **A**

New Programs Under Development

MATC works with local industry and business partners to develop new programs that meet workforce needs. For the most current list of MATC's academic programs, see **matc.edu**.

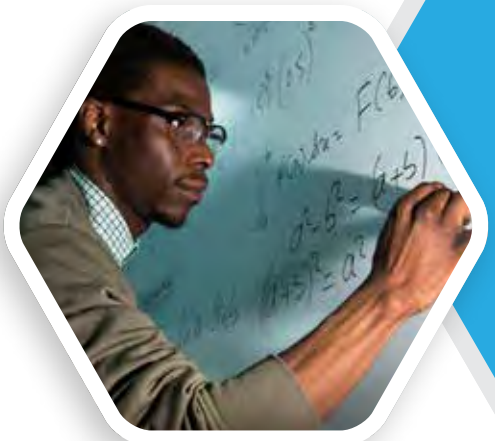
Offered at Milwaukee Area Technical College, 2020-21

Manufacturing, Construction & Transportation Academic & Career Pathway

Advanced Metal Fabrication (32-457-1), **T**
Air Conditioning and Refrigeration Technology (10-601-1), **A**
Appliance Technician (31-445-1), **T**
Architectural Woodworking/Cabinetmaking (31-409-1), **T**
Auto Collision Repair and Finish Technician (31-405-1), **T**
Automated Building Systems (30-481-1), **T**
Automotive Express Lube Technician, **C**
Automotive Maintenance Technician (31-404-3), **T**
Automotive Technology – Comprehensive (10-602-6), **A**
Automotive Technology Maintenance Light Repair (30-602-4), **T**
Aviation Maintenance Technician – General, **C**
Aviation Technician – Airframe (31-486-1), **T**
Aviation Technician – Powerplant (31-486-2), **T**
Boiler Operator, **C**
Bricklaying (30-408-2), **T**
Carpentry (31-410-1), **T**
Computer Numerical Control (CNC) Technician (32-444-1), **T**
Dental Technician (30-507-1), **T**
Diesel and Powertrain Servicing (31-412-3), **T**
Electrical Power Distribution/Line Mechanic(31-413-2), **T**
Electricity (31-413-1), **T**
Landscape Horticulture (10-001-4), **A**
Landscape Horticulture Technician (31-001-5), **T**
Machine Tool Operations (31-420-1), **T**
Manufacturing Maintenance (32-462-1), **T**
Power Engineering and Boiler Operator(30-428-1), **T**
Preparatory Plumbing (31-427-1), **T**
Refrigeration, Air Conditioning and Heating Service Technician (31-401-1), **T**
Technical Studies: Apprentice (10-499-5), **A**
Tool and Die Making (32-439-1), **T**
Truck Driving (30-458-1), **T**
Welding (31-442-1), **T**
Welding Fundamentals, **C**
Welding Technology (10-621-1), **A**

STEM (Science, Technology, Engineering & Math) Academic & Career Pathway

Advanced Manufacturing Technology (10-664-2), **A**
Architectural Technology (10-614-1), **A**
Biomedical Electronics Technology (10-605-6), **A**
Civil Engineering Technology (10-607-1), **A**
Computer Electronics Technology (10-605-3), **A**
Electronic Engineering Technology (10-605-7), **A**
Electronic Technology – Automation (10-605-1), **A**
Electronics Technician Fundamentals (30-605-1), **T**
IT Computer Support Specialist (10-154-3), **A**
IT Computer Support Technician (31-154-6), **T**
IT Digital Forensics Analyst (31-150-1), **T**
IT Help Desk Support Specialist (31-154-7), **T**
IT Information Systems Security Specialist (10-151-3), **A**
IT Mobile Applications Developer (10-152-8), **A**
IT Network Specialist (10-150-2), **A**
IT Network Specialist – Online Accelerated (10-150-2), **A**
IT Networking and Infrastructure Administration (31-150-2), **T**
IT User Support Technician (30-154-6), **T**
IT Web and Software Developer (10-152-7), **A**
Level 2 – Service Center Technician, **C**
Mechanical and Computer Drafting (31-421-2), **T**
Mechanical Design Technology (10-606-1), **A**
Microsoft Enterprise Desktop Support Specialist, **C**
Quality Engineering Technology, (10-623-9), **A**
Service Center Technician, **C**
Surveying and Mapping (31-607-1), **T**



These academic programs are grouped in this catalog by:

A - Associate degree programs, pages 29-106

T - Technical diploma programs, pages 107-184

C - Certificate programs, pages 185-203

Associate degree and technical diploma programs are listed with their program codes in parentheses.

Your Journey With MATC Begins Here

Let's Get Started

Apply online at matc.edu or visit us in person at any campus!

If you visit, you'll find computer stations for completing applications for admission and financial aid, and for completing registration. Our team will be ready to help.

We're Here to Help You Succeed

MATC can help you reach your goals, with bilingual services and programs, tutoring, academic advising, career counseling and employment services. You can find more information about these services in this catalog. You also can visit **matc.edu**, choose **Student Life and Resources** from the menu and select **Student Support.**

Join Us for 2020-21!

Start dates:

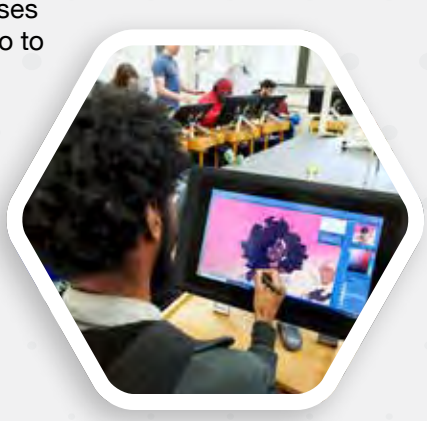
Summer session start dates will vary due to the Democratic National Convention

Fall semester starts **Monday, August 24, 2020**

Spring semester starts **Tuesday, January 19, 2021**

Just Want to Take a Course?

If you want to take courses but don't want to earn an associate degree or technical diploma, you don't need to complete the full admissions process, but will not be eligible for financial aid. You will still need to register for the classes you want to take. Go to **matc.edu,** click on **Future Students** and then **Just Take a Class.**



Applying to MATC

Some Requirements Before You Apply:

- You must have a high school diploma or GED equivalency certificate to enter an MATC associate degree or technical diploma program – only a few exceptions apply.
- For students who want to finish high school, MATC offers Adult High School, GED and HSED opportunities (see page 310).
- Some courses require specific high school experience. If you don't have those course requirements, you can fulfill them through our Adult High School, or our General Education Career & Academic Pathway.

Readmission for Returning Students

Coming back to MATC? Great! If you have taken a break from your program (not including summer), then you'll need to apply for readmission. You can complete a program readmission form online at **matc.edu,** search **Returning Students.** Please note that if the program you are reapplying to has a waiting list, you may have to join that list.

International Students

MATC welcomes international students! Those who plan to apply for a student visa should visit **matc.edu** and search **International Students**. You also may call **414-297-6282** or write to:

MATC International Student Admissions Office, Room S101, 700 West State Street, Milwaukee, WI 53233-1443

Waiting Lists

Waiting lists are used when we have more applicants than we have spots available in a program. When you complete your application to a program that's already full, you'll be placed on the list in the order that you finished applying.

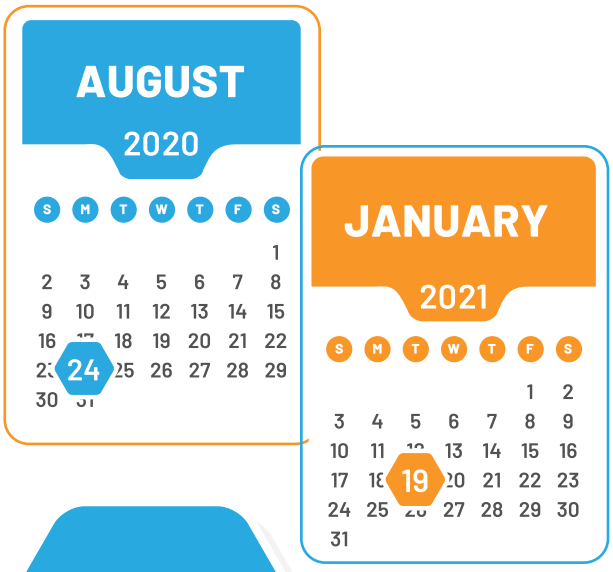
While waiting to take core courses, you can still enroll in your program's specified general studies courses, such as English, math and electives.

Healthcare Services – The Petition Process

The Healthcare Services Academic & Career Pathway uses a petition process for entry, which requires you to complete the petition application during the petition window dates.

Find instructions on how to complete the petition process for a Healthcare Services Pathway program by visiting **matc.edu.** and searching **Petitioning.**

A criminal background check (CBC) is required for MATC students pursuing an associate degree, technical diploma or certification offered in the Healthcare Services Pathway. MATC will not deny admission to any Healthcare Services Pathway program based upon the results of the criminal background check. However, agencies who serve as clinical or field placement sites for MATC's Healthcare Services courses reserve the right to deny a placement based upon criminal background check results. Should you be denied clinical or field placements by an approved clinical or field placement site, you may be unable to complete all course requirements necessary for graduation, licensure and/or employment.



Let's Get Started!

How to Apply

How to Apply to a Program

Applying to MATC is easy, just follow these steps:

1 Apply for Admission

Fill out your application at **matc.edu/apply** or visit any MATC campus

Pay the $30 application fee

2 Submit Official Transcripts

Depending on your experience, you will submit one or more from the following list:

- High school (with graduation date)
- GED/HSED
- Homeschool PI-1206 form and detailed transcript
- College/university
- Out of country transcripts (must be translated and evaluated by an approved agency)

3 Submit Other Required Items

Some programs have additional admission requirements such as criminal background check or licensure. Check program requirements for details.

4 Watch for Your Acceptance Letter

Congratulations! You've been accepted. Keep going.

5 Activate Your myMATC Student Portal Account

MyMATC is the student online portal where you can access your academic profile, MATC email and other resources. Visit **mymatc.matc.edu**.

6 Watch the Online Orientation

The online orientation will introduce you to essential resources within the college, including how to register for classes.

You can take the online orientation after you have activated your account. Visit **orientation.matc.edu**.

7 Register for Classes and Payment Options

Current MATC students can register for classes online at **selfservice.matc.edu**.

8 Attend New Student Welcome Session

Credit for Prior Learning and Experience (CPLE)

Get credit for what you already know

Before you pick your courses and start at MATC, think about what previous courses and experiences could earn you college credit. It's possible you've already gained college-level learning on your own. CPLE is a way to earn credit for specific MATC courses based on skills learned as part of courses completed from another college, work experience, professional licenses, certificates, apprenticeships, military training or through training programs. To graduate, all students must complete 25% of their coursework at MATC. Visit **matc.edu** and search **CPLE** for more information.

MATC

STUDENTS: SAVE TIME ONLINE WITH

SELF-SERVICE

Get Information 24/7 With Self-Service

Once you enroll, you will have an easy way to help you stay connected and access key college services.

At selfservice.matc.edu, you can:

- Register for classes
- Pay tuition and fees and enroll in a payment plan
- Get immediate, 24/7 information about your financial aid without waiting on hold or in a line
- View your class schedule and cumulative GPA
- Review and print your unofficial transcript
- View your semester grades

TRY IT OUT — LOGIN AT SELFSERVICE.MATC.EDU WITH YOUR MATC EMAIL AND PASSWORD.

Registration

Registration Is How You Sign Up for Classes

To Register for the Classes You Need:

- Students enrolled in a degree or diploma program may register online at **selfservice.matc.edu** or in person at any of the four MATC campuses. Other students can register online at **INFOnline.matc.edu** or in person.
- Remember to make sure you have met the course prerequisites.

Service Members Priority Registration

We honor the fact that state law gives veterans and members of the armed forces priority in registering for courses at Wisconsin technical colleges and the University of Wisconsin System. Service members' priority registration information is available at **matc.edu** by searching **MESO**.

Priority Registration

Make It PRIORITY

If you're already enrolled in an associate degree or technical diploma program, you get to register earlier. You'll have the opportunity to register for the next semester after mid-term of the current semester. You can meet with an advisor who will assist you in selecting courses. The Priority Registration dates for eligible program students are listed on the Academic Calendar at **matc.edu**.

Open Registration

Newly admitted program students and students not accepted into a program register during Open Registration. See the Academic Calendar at **matc.edu** for Open Registration dates.

Payment Options

Select a payment option to avoid being dropped from all classes. Payment options include awarded financial aid, sponsorship received by MATC, enrolled in the MATC Payment Plan or paid in full. Visit **selfservice.matc.edu** to enroll in a payment plan. You can pay online at **selfservice.matc.edu** or in person.

Fees for most courses are set by the Wisconsin Technical College System Board and are updated each academic year.

New Student Welcome Session

First-time students attend a welcome session to learn important campus information. After registering for your classes, you will be able to reserve a session time. Visit **matc.edu** and search **Welcome Session** for more information.

Types of Degrees at MATC

Associate Degrees

Associate of Arts (A.A.), Associate of Science (A.S.) and Associate in Applied Science (A.A.S.) degree programs usually take at least two years to complete for a full-time student. Many students choose the A.A. and A.S. options to fill requirements for a four-year degree transfer. Check with the four-year institution you plan to attend, and ensure your courses will count toward your degree.

Technical Diplomas

Are you looking to prepare for a specific job or upgrade your job skills? MATC offers specialized technical diploma programs. Timeframes range from one-semester, one-year and two-year programs that provide extensive career training. Technical diploma courses usually involve more time in hands-on activities, more class time and less homework.

Certificates

In addition to associate degrees and technical diplomas, MATC awards certificates. A certificate may consist of:

- Selected courses to update career skills
- Selected courses from an associate degree or technical diploma program for people with related experience, and who may already be working in their field
- A single continuing-education career course

If You Need Financial Aid:

Apply as early as possible. Your financial aid application must be completed before the end of the semester unless you are a continuing student. Apply for federal financial aid online at **fafsa.gov** or download the myStudentAid app. The MATC federal school code is 003866. Visit **matc.edu** and search **Financial Aid** for specific dates.

Transfer Opportunities

Start Your Bachelor's Degree With MATC

Plan Ahead: Make Your Transfer Seamless

Preparation is key. Students should plan ahead by researching their transfer options and contacting MATC's Office of Articulation and Transfer at **414-297-6836.**

Also review the four-year transfer information at **matc.edu** (search **Four-Year Transfer**). Transfer agreements set the credits that will transfer to a four-year institution. If no agreement is in place, you should talk with the institution you are planning to attend and discuss what they are willing to accept.

MATC Can Be Your Path to a Four-Year Degree

We have agreements with more than 35 four-year colleges and universities, making transferring to complete your bachelor's degree a convenient and affordable option.

Talk to your advisor and find out which courses and MATC programs will transfer to the college or university you plan to attend. It's also a good idea to keep in touch with the admissions department of that four-year school, so you can make sure you're taking the right MATC courses for your transfer.

Types of Transfers and Transfer Agreements

Credit Transfer: General Education Pathway

Earn 64 or more bachelor's degree transfer credits through programs in MATC's General Education Academic & Career Pathway. You can transfer credits earned in MATC's 200-level courses to most four-year colleges and universities in Wisconsin, and to others across the nation. With planning, MATC's Associate of Arts (A.A.) and Associate of Science (A.S.) degrees can let you enter a four-year degree program with junior standing.

Program-to-Program Transfer Agreements

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 and universities.

All-Inclusive Transfer Agreements

MATC students may transfer many or all of their credits from MATC and apply them toward a four-year degree at the accepting school.

Specialized Guaranteed Admission Agreements

Students are guaranteed admission into UW-Madison, Marquette University, 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. See **matc.edu** and search **Four-Year Transfer**.

Transfer Days

MATC hosts representatives from many public and private colleges and universities for events throughout the academic year such as Transfer Days and four-year transfer partner visits. Check **matc.edu** and see the **Calendar** for dates and times.

For complete University of Wisconsin System transfer information, visit **wisconsin.edu/transfer.**

Flexible Learning Options at MATC

We'll Work With Your Schedule

MATC has 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 Saturdays.
- We offer more than 400 online classes.
- Some associate degree, technical diploma and certificate programs are offered entirely online. Visit **matc.edu** and search **Online Learning** for more information.
- Accelerated degree programs are available and designed especially for working adults.

Auditing Courses

Interested in learning something new, without the pressure of exams and grades? Auditing courses lets you do just that.

Audited courses aren't for credit, and aren't eligible for financial aid or veterans benefits. Not every course can be audited. For additional information on auditing courses, contact register@matc.edu or call **414-297-7900**.

Continuing Education Courses (CEC)

MATC offers CEC and personal enrichment course opportunities. Students can visit **selfservice.matc.edu** for course listings.

Continuing education courses are also available to businesses through MATC's Workforce Solutions, either on campus or at the workplace. Visit **matc.edu** and search **Workforce Solutions**.

WORKFORCE SOLUTIONS
Milwaukee Area Technical College

Apprenticeships

Earn a wage while you learn a trade

Apprenticeships are formal training agreements for hands-on learning. Employers teach skills of the trade on the job, and classroom instruction reinforces this knowledge. To become an apprentice you need to be registered with the Bureau of Apprenticeship Standards and have an employer sponsor your attendance in classes for one day per week. For more information, visit **matc.edu** and search **Apprenticeships**.

Internships

Hands-on experience in your field

Internships allow students to apply what they've learned while gaining real experience, by combining in-class work with a career-related job. You'll earn college credits, acquire work experience and enhance personal growth. Internships are mandatory in some MATC programs and optional in others; refer to the program's curriculum. Visit **matc.edu** and search **Internships** for more information.

Study Abroad Opportunities

Would you like to study in a different part of the world? MATC offers a number of study abroad opportunities for students interested in learning firsthand about cultures around the world. Some scholarships are available to help fund MATC-sponsored study abroad opportunities, and you can earn credit for your program. Visit **matc.edu** and search **International Study** for more information.

Workforce Solutions

MATC Workforce Solutions offers businesses professional training and development including custom and on-site options. We provide training that is responsive for today's fast-paced, ever-changing business environment and produce outcomes that can be applied on the job immediately. Led by experienced professional educators, each cost-effective program is custom-designed and scalable to fit individual business needs.

Our services include:

- Organization-wide training and development programs at your location or at one of our four campus training facilities
- Customized training to improve organizational and leadership performance
- Enhancement of workforce skills to improve employee productivity
- Professional development workshops and seminars

Workforce Solutions is committed to the economic development of the region and achieving a diverse and trained workforce. For more information about the services available, visit **matc.edu** and search **Workforce Solutions**.

Opportunities to Complete High School Credentials

MATC offers several programs for adults, and teens in some cases, who need to finish high school requirements.

Adult High School

MATC's Adult High School can help you finish high school graduation requirements. High school students 16 or 17 years of age also can enroll in evening, online, weekend or summer session Adult High School classes for credit recovery.

General Educational Development (GED)

The GED test, offered at all MATC campuses, is an option for those who haven't finished high school. Most employers require at least a GED, and it's one way to meet entrance requirements at MATC and other colleges. We offer GED prep courses, too.

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.

Program for Emerging Scholars

State law allows an at-risk student age 16 years or older take high school classes leading to a high school diploma.

For more information, see the 700-Level Courses for Adult High School/GED/HSED, College Support and Learning English section on pages 310-321.

More Opportunities for High School Students

If you're a high school student, you can begin your college education by taking dual credit now! Examples include:

- Dual Enrollment Academy
- Start College Now
- Transcripted Credit
- Contracted Courses

For information about these opportunities, visit **matc.edu** and search **High School Opportunities**.

Apply for Financial Aid

Before You Begin:

In order to receive financial aid, you must be admitted to an MATC associate degree or technical diploma program before the admission application deadline.

1. **STEP ONE: Gather all required FAFSA® information.** Collect your signed 2018 Federal Tax Return, W-2s and untaxed income received. If you're a dependent, you'll need your parents' Federal Tax Returns as well.

2. **STEP TWO: Complete your FAFSA information.** Go to **fafsa.gov** or download the myStudentAid app for iOS and Android. The MATC federal school code is 003866.

3. **STEP THREE: Sign the FAFSA. You (and a parent if you're a dependent) will agree to the FAFSA certification statement and sign the application.** You can sign electronically using your FAFSA user ID (both you and your parent will need your own individual FAFSA user IDs).

4. **STEP FOUR: View your Student Aid Report.** You'll receive a Student Aid Report (SAR), sent via email if you listed an email address, or available on **selfservice.matc.edu**. Review the information to make sure it's correct. Contact the MATC Financial Aid office for assistance with any inaccuracies.

MATC Financial Aid Office Contact Information

Visit the Financial Aid office, Downtown Milwaukee Campus, Student Center/S Building, or the Admissions Center at the Mequon, Oak Creek or West Allis campuses. Call **414-297-6282** or email **finaid@matc.edu**.

Apply for Scholarships

You may be eligible for scholarships from the MATC Foundation! Don't miss these great opportunities.

- The scholarship application period for **current and continuing MATC students** begins the last Monday in February and ends in early April; scholarship recipients are selected and notified via email in May
- The 2020 scholarship application period for **new high school graduates and first-time MATC students** is July 1-August 2
- Most scholarships are awarded as multi-semester (Fall and Spring) scholarships for the next academic year
- **Apply online at: matc.academicworks.com**

For help, email **scholarships@matc.edu**.

The MATC Promise Means Free Tuition for Eligible Students

The MATC Promise for New High School Graduates

MATC established Wisconsin's first free-tuition Promise program in 2015. The MATC Promise for New High School Graduates pays the tuition for up to 75 credits for eligible students, after federal and state financial grant aid has been applied. The cost of books, program fees and equipment are not covered.

The MATC Promise for Adults

In 2018, MATC launched the Promise for Adults for students age 24 and older who started but did not complete a college degree. It provides eligible students up to 75 credits of free tuition, after other scholarships and grants are applied, to complete an in-demand program.

Find out more about both MATC Promise programs at matc.edu/promise.

Academic Support Centers and Tutoring Services

Academic Support Centers (ASC) are open to all MATC students, and include assistance in computer applications, course assignments, online use, math, science, social sciences, study skills, writing and tutoring services. For more information, visit **matc.edu** and search **MATC ASC**.

- **Communications Center** staff provide assistance in online work and in business courses related to communications
- **Computer Production Center** staff offer assistance in using a computer for course assignments
- **Math Center** staff provide assistance in all math levels
- **Science Center** staff offer assistance in science and Healthcare Services Pathway courses, use of computerized instructional resources and internet use
- **Writing Center** staff offer assistance in course-related written assignments and projects, résumé writing and research papers. Online writing help is available – visit **matc.edu** and search **MATC Online Tutoring**.

Tutoring is free to all MATC college students. Services include walk-in tutoring, group tutoring, in-class tutoring and online tutoring. Tutoring is offered based on the needs of students and tutor availability.

Supported Courses

MATC believes you can succeed in college — regardless of your ACT, high school grade-point average or your passing GED score. We will help provide the right academic support. When you start at MATC, you'll be registered in college-level courses with extra supports if you need them. The college will review your previous academic records to see if you may need help such as extra hours of instruction, tutoring, homework help or lab work.

Student Accommodation Services

Student Accommodation Services (SAS) ensures that students with disabilities have equal opportunities and access to all courses, programs and activities offered at MATC. Prospective students with disabilities should contact Transition Services at the Downtown Milwaukee Campus, **414-297-7839** or visit **matc.edu** and search **SAS** for more information.

MATC Libraries

Our libraries are great spaces to study, plus take advantage of additional services and resources. Services are available onsite at all four campus libraries, virtually at **book.matc.edu** and via our **Text-a-Librarian (SMS) service**.

Child Care Services

Your kids are in good hands at MATC Children's Centers

We understand that affordable, reliable child care can be a challenge for students. That's why we offer reliable, quality child care to support your success. Available at each campus, MATC Children's Centers offer a variety of learning experiences that encourage emotional, social, intellectual and physical development. All locations are nationally accredited and hold a five-star quality rating from the state of Wisconsin. Flexible scheduling is available, but children must be registered prior to attending children's centers. MATC is approved for payment by several funding agencies.

- 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 Street, **414-456-5419**

Counseling Services

We know the importance of maintaining good mental health and are here to help. Each MATC campus offers crisis intervention, referrals and brief, supportive listening. All services are free, confidential and tailored to fit student needs.

The counselors are available at each campus 7:45 a.m.-6 p.m. Mondays through Thursdays, 7:45 a.m.-4 p.m. Fridays.

Go to **matc.edu** and search **Personal Counseling**.

Office of Bilingual Education

Located at the Downtown Milwaukee Campus, the Office of Bilingual Education aids students who need guidance in completing their college education. For more information about these services call **414-297-8882**. Also see the 700-Level Courses for Adult High School/ GED/HSED, College Support and Learning English section, pages 310-321.

Veterans Services (Military Education Support Office – MESO)

We proudly recognize recipients of the GI Bill

If you plan to take advantage of federal or state military educational benefits, paperwork should be submitted prior to the start of each semester. We handle all certifying and processing of educational benefits at the Downtown Milwaukee Campus. Keep in mind you may be eligible for other types of financial aid in addition to VA benefits. Also remember MATC offers eligible student veterans and current military service members priority registration for each term in keeping with state law. Contact the MESO School Certifying Official (SCO) at **414-297-8363**, or email **meso@matc.edu**.

Veterans Resource Center

We recognize that veterans have unique needs on a college campus, and staff members in the Veterans Resource Center ease the transition from the military to college. The Veterans Resource Center on the Downtown Milwaukee Campus is where military-affiliated students can get information about veteran resources, use computers, do homework or socialize. Veterans, those currently serving in the military, and dependents and spouses receiving benefits can contact Veterans Specialist Wesley Walker, **walkerw9@matc.edu**, **414-297-6835**.

MATC's Student Employment Services

Department of Multicultural Student Services and the Men of Color Initiative

Community, Support, Advocacy, Advising

Working to leverage cultural strengths to help overcome the challenges faced by students of diverse backgrounds, the Department of Multicultural Student Services provides support services, case management, advocacy and intervention, and academic advising. It's made up of four main offices:

- African American Student Services
- American Indian Student Services
- Asian American Student Services
- Latino Student Services

Specialists serve as advocates for current and prospective students of color from diverse backgrounds. The staff provides case management related to student retention.

Multicultural Student Services is located at the Downtown Milwaukee Campus. For more information, call **414-297-6968** or visit **matc.edu** and search **Multicultural Student Services**.

The Men of Color Initiative strengthens and serves current and future MATC students by collaborating with the community to overcome the challenges and issues men of color may face on the road to their academic success. For more information, email **menofcolor@matc.edu** or see the Facebook page for MATC Multicultural Affairs and Men of Color Initiative.

The Student Career, Employment and Transfer Center

We can help you find a job or an internship

The Student Career, Employment and Transfer Center is here to assist students and graduates with employment, and to provide career information resources.

- We partner with employers to offer information about job openings for MATC graduates and students
- We also provide opportunities for students to network with employers through on-campus programming, employer information sessions and job fairs
- Through our InternConnect services, MATC brings together students interested in internships and employers seeking interns

The Student Career, Employment and Transfer Center is located at the Downtown Milwaukee Campus and services are available at all regional campuses by appointment. Stop in the office, search **Employment and Transfer Center** at **matc.edu** or email **jobshop@matc.edu**.

WisconsinTechConnect.com and the Wisconsin "TechConnect" Job System

WisconsinTechConnect.com is a nationwide employment information system for recruiting Wisconsin Technical College System students and graduates. It's a collaborative effort of Wisconsin's 16 technical colleges. Employers across the state post job openings on the website. Students and graduates can explore job opportunities related to MATC's program areas, and upload their résumés for employers to view.

Find Employment Information With the Graduate Career Report

MATC's Graduate Career Report is an important resource for prospective and current students regarding career and education planning. Visit **matc.edu** and search **Career Report**.

Student Life

Find Out Why We're #ProudToBeMATC!

Get engaged with MATC Engage – **matc.campuslabs.com/engage**

The Office of Student Life is dedicated to serving all areas beyond the classroom! This includes:

- Educational, recreational and cultural programming
- Honor recognition
- Guidance
- Problem-solving
- Student housing information
- Student organizations
- Student advocacy and student development

If you have college-related concerns or problems, you are encouraged to seek help from the Office of Student Life. Visit **matc.edu** and search **Student Life**.

Stormer Pass

The MATC Stormer Pass is the official identification card for students at MATC. It provides an easy, safe and convenient method to make purchases and use services on campus. While off campus, use your Stormer Pass as your U.S. Bank card when you open a U.S. Bank checking account. Contact the **Office of Student Life** at **414-297-7859**, email **stormerpass@matc.edu**, visit **matc.edu** or contact U.S. Bank at 414-226-0105.

Student Activities

To see what's happening on campus, visit matc.campuslabs.com and log in with your MATC email and password.

There are tons of opportunities for students to participate in fun and fulfilling extracurriculars. Here are a few of the amazing opportunities at MATC.

STORMERS
MILWAUKEE AREA TECHNICAL COLLEGE
ATHLETICS

Student Athletic Teams – The Stormers

MATC features these women's and men's varsity athletic teams:

- Baseball (Men's)
- Basketball (Men's and Women's)
- Soccer (Men's and Women's)
- Softball (Women's)
- Tennis (Men's and Women's)
- Volleyball (Women's)

Students on all of our sports teams learn and practice skills that serve them throughout their lives. MATC sports teams are members of the National Junior College Athletic Association and the North Central Community College Conference. For information about athletic opportunities and the schedule of games and matches, visit **matcstormers.com**.

Student Organizations

With more than 50 student organizations and clubs to choose from, you're sure to find a group that's right for you at MATC. Featuring academic, professional, service, cultural and special-interest organizations, MATC values providing enriching and exciting opportunities for students. Information about registered student organizations, or how to start a new one, is available from the Office of Student Life at each MATC campus or at **matc.campuslabs.com**.

Student Government

Do you want to make an impact as a student leader? Participating in Student Government is a great opportunity, and contributes to MATC while developing your skills in communication, organization and leadership. Through Student Government, all MATC students are represented by elected student representatives. Officially recognized as the voice of the student body by the administration of MATC, Student Government makes recommendations to the Office of Student Life regarding student or college-related issues.

Student Newspaper

Interested in photography, art and design, advertising and writing? This is a great opportunity for you. The college's biweekly student newspaper, *MATC Times*, is produced and published by MATC students. No previous training or experience necessary.

Student Development Events and Programs

Workshops, seminars, presentations and programs address such topics as stress management, study-habit improvement, how to choose a career and how to deal with conflict. These programs and events apply to life on campus, as well as your overall personal development.

Student Enrichment and 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.

Student 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. Visit **matc.edu** and search **Student Life**.

Student Resource Center

We are ready to connect you with free, confidential resources that can help you stay in school. These include:

- Child care funding
- Dreamkeepers (for emergency assistance funds)
- Driver's license recovery
- Food
- Housing
- Mental health
- Student legal aid
- Transportation
- And more!

Stop in the Student Resource Center on the Downtown Milwaukee Campus in the S Building, Room S215, weekdays 8 a.m.-5 p.m. We're here to help you succeed!

Academic Standards at MATC

The MATC Standards of Academic Success are the requirements for students to maintain satisfactory academic progress. This lets students know when they may need additional help, and when they are at risk.

The Standards of Academic Success apply to all students enrolled in associate degree and technical 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:

- Minimum 2.0 semester grade-point average (GPA) based on coursework completed at MATC during the semester
- Minimum 2.0 cumulative GPA based on all coursework completed at MATC
- Minimum 67% semester course completion rate (percentage of credits completed out of credits attempted at MATC for the semester being evaluated)
- Minimum 67% 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. See the Student Handbook for more information.

Graduation Requirements at MATC

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 credits be taken at MATC.

Graduation application deadlines:

For Fall – **October 31**

For Spring – **March 31**

Satisfactory Academic Progress (SAP) – For Financial Aid

Keeping up with school, so you don't risk losing your financial aid

Students receiving financial aid must make Satisfactory Academic Progress toward the completion of course requirements for an associate degree, technical diploma or eligible certificate. Students can only receive financial aid for classes that are required or prepare them for success (remedial courses) in their program area. To be considered in good standing at MATC, a student must meet all of the following requirements:

- **Grade-Point Average (GPA) Requirement:**

  Students must maintain a **cumulative GPA of 2.0 or better**. Remedial credits will be considered in GPA. For repeat coursework, the highest grade received will be considered.

- **Completion Rate Percentage Requirement:**

  A student must successfully complete **67% of all credits attempted**. That means you have to pass two-thirds of your classes. This is a cumulative percentage. Credits attempted are the total credits you are enrolled in (including remedial, repeated courses, withdrawals, incompletes and transfer credits) even if you did not receive aid for them.

- **Maximum Timeframe Requirement:**

  Students must complete an associate degree technical diploma or eligible certificate before 150% of credits required for graduation are attempted. For example: If an associate degree (two-year published length) requires 60 credits, a student must complete the degree before 90 credits have been attempted. Students may be deemed ineligible for aid at the point when they cannot mathematically complete their program within the 150% timeframe.

Visit **matc.edu** and search **Academic Standards** for more details.

Eligibility for Loans and State Grants

Before the federal financial aid census date, you need to be enrolled in at least six credit hours to be eligible for a loan and for state grants. In order for your loan to be processed, you must complete the online loan counseling and sign an online master promissory note at studentaid.gov. The federal financial aid date, census date and other important dates are listed in the **financial aid section** of **matc.edu**.

Deferments for Course Fees or Books

As a student receiving federal financial aid, you may be eligible for a deferment. This could cover the cost of books, fees, required uniforms or tools until your funds are available. You'll need approval from the Financial Aid office, and will sign a promissory note agreeing to pay these costs by a set date. A processed federal Student Aid Report is necessary for this option.

Prerequisites

Prerequisites are previous courses you need to have taken for success in a class. You'll need to complete the required prerequisites for a class before enrolling. Prerequisite courses are listed with the course description on **selfservice.matc.edu** or **INFOnline.matc.edu.**

Contact your 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.

Student Handbook and Student Code of Conduct

The Office of Student Life updates and distributes the MATC Student Handbook, which includes the Student Code of Conduct. MATC may impose disciplinary sanctions for violations of the Student Code of Conduct.

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 document. The Student Code of Conduct is the definitive document on student conduct and the judicial system. Contact the Office of Student Life at **414-297-8177**.

MATC Student Records Information

Family Educational Rights and Privacy Act (FERPA)

MATC complies with FERPA, which exists to:

- Let students know what educational records are kept by the college
- Give them the right to inspect those records and ask for corrections if necessary
- Control the release of such information to those who are not involved in the educational process

Under FERPA, directory information is made available to anyone who requests it unless you specifically request otherwise. 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. MATC will not provide information regarding time and location of a student's classes, and does not provide student or instructor home addresses and/or telephone numbers.

Personally identifiable information in your education record will not be released or disclosed unless you consent to it. However, one exception is disclosure to school officials with legitimate educational interests. This typically means an official needs to review an education record 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 related to educational records or the release of your records, please call **414-297-6824**.

Pathways to Your Career Goals Begin at MATC

Dr. Vicki J. Martin, MATC president, (far right) talks with baking program students and instructor at MATC's annual gingerbread house competition.

I am honored that you are exploring Milwaukee Area Technical College as your partner in achieving your dreams. Whether you are in high school, want to return to college to finish a degree or want to attain new skills, we can get you on a path to success. We offer high-quality college programs and affordable tuition.

Come and find out why more than 30,000 students choose MATC:

- Hands-on learning led by instructors with industry experience
- Personal attention through small class sizes and comprehensive student services
- Daytime, evening, accelerated and online course options
- Active campus life, including student groups, athletics and housing opportunities
- Child care available for students
- Employment services to help students find internships, and jobs for MATC students and graduates through our Student Career, Employment and Transfer Center

Affordable, high quality, and close to home

MATC provides an affordable, high-quality opportunity to advance your education. For eligible students, the MATC Promise provides free tuition. Our Financial Aid office can help you determine the best way to pay for your education.

MATC's tuition per semester is about half the cost of a semester at a four-year public university, and we are accredited by the Higher Learning Commission to ensure quality and transferability.

The college offers the chance to learn in the heart of it all − our Downtown Milwaukee Campus sits next to the new arena and brewery districts − or at a campus close to you in Mequon, Oak Creek or West Allis. We also offer an Education Center in Walker's Square on the city's near south side.

Our graduates succeed

Within six months of graduation, 94 percent of MATC graduates are employed and in the most recent two-year period, more than 3,700 of our students went on to attend a four-year college or university. In short, our graduates succeed. Thank you for considering MATC as your partner for success. We hope to see you at the college!

Vicki J. Martin

Vicki J. Martin, Ph.D.
MATC President

Accreditation Information

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

The college is also a member of the American Association of Community Colleges, aacc.nche.edu.

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

Aesthetician

State of Wisconsin Department of Safety and Professional Services
4822 Madison Yards Way
Madison, WI 53705
608-266-2112
dsps.wi.gov/Pages/Professions/Aesthetician/Default.aspx

Anesthesia Technology

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 US Highway 19 North, Suite 158
Clearwater, FL 33763
727-210-2350
caahep.org/Students/Program-Info/Anesthesia-Technology.aspx

Automotive Maintenance Technician

ASE Education Foundation
1503 Edwards Ferry Road NE, Suite 401
Leesburg, VA 20176
703-669-6650
aseeducationfoundation.org

Automotive Technology – Comprehensive

ASE Education Foundation
1503 Edwards Ferry Road NE, Suite 401
Leesburg, VA 20176
703-669-6650
aseeducationfoundation.org

Aviation Maintenance Technician – General

Federal Aviation Administration Headquarters
800 Independence Avenue SW
Washington, DC 20591
www.faa.gov

FAA (Federal Aviation Administration) CFR (Code of Federal Regulations) Part 147 Aviation Maintenance Technician School.

Aviation Technician – Airframe and Powerplant

Federal Aviation Administration Headquarters
800 Independence Avenue SW
Washington, DC 20591
www.faa.gov

FAA (Federal Aviation Administration) CFR (Code of Federal Regulations) Part 147 Aviation Maintenance Technician School.

Baking and Pastry Arts

American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC)
180 Center Place Way
St. Augustine, FL 32095
800-624-9458 or 904-824-4468
acfchefs.org/accreditation

Barber

State of Wisconsin Department of Safety and Professional Services
4822 Madison Yards Way
Madison, WI 53705
608-266-2112

Cardiovascular Technology

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 US Highway 19 North, Suite 158
Clearwater, FL 33763
727-210-2350
caahep.org/Students/Program-Info/Cardiovascular-Technology.aspx

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, Landscape Architects, Professional Engineers, Designers and Professional Land Surveyors
4822 Madison Yards Way
Madison, WI 53705
608-266-2112
dsps.wi.gov/pages/BoardsCouncils/AE/Default.aspx

Computer Numerical Control (CNC) Technician

The National Institute for Metalworking Skills
10565 Fairfax Boulevard, Suite 10
Fairfax, VA 22030
703-352-4971
nims-skills.org

Cosmetology
State of Wisconsin Department of Safety and Professional Services
4822 Madison Yards Way
Madison, WI 53705
608-266-2112

Criminal Justice Studies
State of Wisconsin – Department of Justice
Training & Standards Bureau
17 West Main Street
P.O. Box 7857
Madison, WI 53707-7857
608-266-8800
www.doj.state.wi.us/dles/training-and-standards-bureau

Culinary Arts
American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC)
180 Center Place Way
St. Augustine, FL 32095
800-624-9458 or 904-824-4468
acfchefs.org/accreditation

Dental Hygiene
The Commission on Dental Accreditation
211 East Chicago Avenue
Chicago, IL 60611
800-621-8099 or 312-440-2718
ada.org/coda

Diesel and Powertrain Servicing
ASE Education Foundation
1503 Edwards Ferry Road NE, Suite 401
Leesburg, VA 20176
703-669-6650
aseeducationfoundation.org

Dietary Manager
Association of Nutrition & Foodservice Professionals (ANFP)
406 Surrey Woods Drive
St. Charles, IL 60174
800-323-1908 or 630-587-6336
anfponline.org

Early Childhood Education
National Association for the Education of Young Children (NAEYC)
1313 L Street NW, Suite 500
Washington, DC 20005
800-424-2460 or 202-232-8777
naeyc.org/accreditation

EMT – Paramedic Technician
Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP)
8301 Lakeview Parkway, Suite 111-312
Rowlett, TX 75088
214-703-8445
coaemsp.org

Funeral Service
American Board of Funeral Service Education
992 Mantua Pike, Suite 108
Woodbury Heights, NJ 08097
816-233-3747
abfse.org/html/committee.html

Medical Assistant
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 US Highway 19 North, Suite 158
Clearwater, FL 33763
727-210-2350
caahep.org/Accreditation/CAAHEP-Accreditation-Process.aspx

Accreditation is based upon the recommendation of the Curriculum Review Board of the American Association of Medical Assistants' Endowment (CRB-AAMAE).

Medical Laboratory Technician
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
5600 North River Road, Suite 720
Rosemont, IL 60018
773-714-8880
naacls.org

Nutrition and Dietetic Technician
Commission on Accreditation for Dietetic Education (CADE) of the American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
800-877-1600 or 312-899-0040
education@eatright.org

Occupational Therapy Assistant (OTA)
Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA)
6116 Executive Boulevard, Suite 200
North Bethesda, MD 20852-4929
301-652-AOTA (2682)
aota.org/Education-Careers/Accreditation.aspx or acoteonline.org

Paralegal
American Bar Association
321 North Clark Street
Chicago, IL 60654
312-988-5616
americanbar.org/groups/paralegals/

Pharmacy Technician
ASHP/ACPE Pharmacy Technician
Accreditation Commission
4500 East-West Highway, Suite 900
Bethesda, MD 20814
301-664-8835 or 301-657-3000
ashp.org

Phlebotomy
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
5600 North River Road, Suite 720
Rosemont, IL 60018
773-714-8880
naacls.org

Physical Therapist Assistant
Commission on Accreditation of Physical Therapy Education (CAPTE)
1111 North Fairfax Street
Alexandria, VA 22314
800-999-2782 or 703-684-2782
capteonline.org

Practical Nursing
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
404-975-5000
acenursing.org

Practical Nursing LPN–RN Educational Progression
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
404-975-5000
acenursing.org

Radiography
Joint Review Committee on Education in Radiologic Technology (JRCERT)
20 North Wacker Drive, Suite 2850
Chicago, IL 60606
312-704-5300
jrcert.org

Real Estate
State of Wisconsin Department of Safety and Professional Services
4822 Madison Yards Way
Madison, WI 53705
608-266-2112

Registered Nursing
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
404-975-5000
acenursing.org

Respiratory Therapist
Commission on Accreditation for Respiratory Care (CoARC)
264 Precision Boulevard
Telford, TN 37690
817-283-2835
coarc.com

Accreditation is based on recommendation of the Commission on Accreditation for Respiratory Care.

Surgical Technology
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 US Highway 19 North, Suite 158,
Clearwater, FL 33763
727-210-2350
caahep.org/Accreditation/CAAHEP-Accreditation-Process.aspx

Accreditation is based on recommendation of the Accreditation Review Committee on Education in Surgical Technology.

Surveying and Mapping
Land Surveyor Section of the Wisconsin Examining Board of Architects, Landscape Architects, Professional Engineers, Designers and Professional Land Surveyors
4822 Madison Yards Way
Madison, WI 53705
608-266-2112
dsps.wi.gov/pages/BoardsCouncils/AE/Default.aspx

Business & Management
Academic & Career Pathway

Is your goal to be competitive in the rapidly changing business and financial services industries? Whether you want to own your own business, or work for a corporation, a nonprofit organization, a small startup – or expand your leadership influence – the instruction by MATC's expert faculty will prepare you with the skills, experience and confidence to succeed.
matc.edu/course-catalog/business-management

Pathway Offices

Downtown Milwaukee Campus,
Main Building, Room M312-314
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
Business-Management-Pathway@matc.edu
414-456-5323

A Associate Degree program
T Technical Diploma program
C Certificate program

- Accounting (A), page 30
- Accounting Assistant (T), page 108
- Accounting Bookkeeper Trainee (C), page 186
- Administrative Professional (A), page 31
- Banking and Financial Services (A), page 48
- Bilingual Office Assistant (T), page 122
- Business Analyst (A), page 50
- Business Management (A), page 51
- Business Management (T), page 124
- Business Management Trainee (C), page 190
- Digital Marketing and Integrated Communications (T), page 136
- Entrepreneurship (T), page 143
- Entrepreneurship (C), page 193
- Event Management (A), page 66
- Financial Services (T), page 144
- Financial Services Trainee (C), page 194
- Foundations of Lodging and Hospitality Management (T), page 146
- Hotel/Hospitality Management (A), page 72
- Human Resources (A), page 73
- Marketing – Online Accelerated (A), page 84
- Marketing (A), page 85
- Medical Administrative Specialist (A), page 87
- Medical Billing (T), page 159
- Office Technology Assistant (T), page 163
- Property Management (C), page 199
- Real Estate (A), page 98
- Real Estate Broker Associate (T), page 171
- Real Estate Salesperson (C), page 200
- Sales and Customer Experience (T), page 174
- Special Event Management (T), page 175
- Supply Chain Management (A), page 101
- Supply Management (T), page 176
- Transportation – Logistics (T), page 179

Community & Human Services
Academic & Career Pathway

Programs in this pathway train and educate the service-related professionals who provide the lifeblood of a thriving community. With input from local employers, MATC's courses ensure you receive high-quality, career-focused training with the most up-to-date equipment and facilities.
matc.edu/course-catalog/community-human-services

Pathway Offices
Downtown Milwaukee Campus,
T Building, Room T200
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
Community-Human-Services-Pathway@matc.edu
414-570-4426

A Associate Degree program
T Technical Diploma program
C Certificate program

- Aesthetician (T), page 110
- Barber (T), page 121
- Child Care Services (T), page 128
- Cosmetology (T), page 130
- Criminal Justice Studies (A), page 58
- Early Childhood Education (A), page 61
- Emergency Medical Technician (T), page 140
- Emergency Medical Technician – Advanced (T), page 141
- Emergency Medical Technician – Paramedic (T), page 142
- Environmental Health and Water Quality Technology (A), page 64
- Fire Protection Technician (A), page 67
- Funeral Service (A), page 68
- Human Service Associate (A), page 74
- Paralegal (A), page 92
- Paralegal Studies (T), page 164
- Preschool (C), page 198
- Water Technician (C), page 202

Creative Arts, Design & Media
Academic & Career Pathway

Showcase your creative talents through a program in this pathway. State-of-the-art classrooms, labs and equipment will provide you with hands-on instruction, so you can develop a portfolio, gain career-related experience, and join a community of artistic professionals.
matc.edu/course-catalog/creative-arts-design-media

Pathway Offices
Downtown Milwaukee Campus,
C Building, Room C210
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
CreativeArts-Design-Media-Pathway@matc.edu
414-297-6004

A Associate Degree program
T Technical Diploma program

- Animation (A), page 35
- Audio Engineer (T), page 113
- Audio Production (A), page 45
- Baking and Pastry Arts (A), page 47
- Baking Production (T), page 120
- Computer Simulation and Gaming (A), page 57
- Culinary Arts (A), page 59
- Culinary Assistant (T), page 131
- Digital Imaging (T), page 135
- eProduction (A), page 65
- Food Service Assistant (T), page 145
- Front-End Web Developer (T), page 147
- Graphic Design (A), page 69
- Interior Design (A), page 76
- Music Occupations (A), page 89
- Photography (A), page 93
- Production Artist (T), page 170
- Television & Video Production (A), page 104
- TV/Video Field Production Assistant (T), page 181
- TV/Video Studio Production Assistant (T), page 182
- Unity Developer (T), page 183
- Web & Digital Media Design (A), page 105

General Education
Academic & Career Pathway

Start your bachelor's degree at MATC by completing an Associate of Arts or Associate of Science degree. These programs are composed of general education courses (English, math, sciences, humanities), and the credits can transfer to four-year colleges and universities, including the University of Wisconsin System and private colleges/universities. Pre-majors let you choose a curriculum tailored to support your future transfer goals. The chemical technician degree and technical diploma programs are designed to prepare you for employment immediately following graduation through practical, hands-on experience.
matc.edu/course-catalog/general-education

Pathway Offices
Downtown Milwaukee Campus,
C Building, Room C210
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
General-Education-Pathway@matc.edu
414-297-6584

A Associate Degree program
T Technical Diploma program

- Associate of Arts (A), page 37
- Associate of Arts: Online – Accelerated (A), page 38
- Associate of Arts – Community Engagement: Pre-Major (A), page 39
- Associate of Arts – Global Studies: Pre-Major (A), page 40
- Associate of Arts – Teacher Education: Pre-Major (A), page 41
- Associate of Science (A), page 42
- Associate of Science – Chemical Technology: Pre-Major (A), page 43
- Associate of Science – Economics: Pre-Major (A), page 44
- Chemical Processing Technician (T), page 127
- Chemical Technician (A), page 54
- Individualized Technical Studies (A), page 75

Healthcare Services
Academic & Career Pathway

These programs prepare you to be a healthcare provider with the necessary leadership skills to strengthen the health and well-being of our community. Come visit our state-of-the-art dental clinic, simulation labs and food science kitchen, and see MATC's many other impressive spaces where you will grow both personally and professionally.
matc.edu/course-catalog/healthcare-services

Pathway Offices
Downtown Milwaukee Campus, H Building, Room H116
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
Healthcare-Services-Pathway@matc.edu | 262-238-2281

A Associate Degree program
T Technical Diploma program
C Certificate program

- Anesthesia Technology (A), page 34
- Cardiovascular Technology – Echocardiography (A), page 52
- Cardiovascular Technology – Invasive (A), page 53
- Central Service Technician (T), page 126
- Dental Assistant (T), page 132
- Dental Hygiene (A), page 60
- Dietary Manager, (C), page 191
- EKG Technician (C), page 192
- Health Information Technology (A), page 70
- Health Unit Coordinator (T), page 148
- Healthcare Customer Service (C), page 195
- Healthcare Services Management (A), page 71
- Medical Assistant (T), page 158
- Medical Coding Specialist (T), page 160
- Medical Interpreter (T), page 161
- Medical Laboratory Technician (A), page 88
- Nursing Assistant (T), page 162
- Nutrition and Dietetic Technician *formerly Dietetic Technician* (A), page 90
- Occupational Therapy Assistant (A), page 91
- Pharmacy Technician (T), page 165
- Phlebotomy (T), page 166
- Physical Therapist Assistant (A), page 94
- Practical Nursing (T), page 168
- Practical Nursing LPN-RN Educational Progression (A), page 95
- Radiography (A), page 97
- Registered Nursing (A), page 99
- Renal Dialysis Technician (T), page 173
- Respiratory Therapist (A), page 100
- Surgical Technology (A), page 102

Manufacturing, Construction & Transportation
Academic & Career Pathway

Get the hands-on, real-world instruction that employers value in the manufacturing, construction and transportation fields. MATC's campuses feature state-of-the-art equipment and you'll work with our industry-expert faculty to be sure you're job-ready on day one.
matc.edu/course-catalog/manufacturing-construction-transportation

Pathway Offices
Downtown Milwaukee Campus, T Building, Room T200
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
Manufacturing-Construction-Transportation-Pathway@matc.edu | 414-297-8901

A Associate Degree program
T Technical Diploma program
C Certificate program

- Advanced Metal Fabrication (T), page 109
- Air Conditioning and Refrigeration Technology (A), page 33
- Appliance Technician (T), page 111
- Architectural Woodworking/Cabinetmaking (T), page 112
- Auto Collision Repair and Finish Technician (T), page 114
- Automated Building Systems (T), page 115
- Automotive Express Lube Technician (C), page 187
- Automotive Maintenance Technician (T), page 116
- Automotive Technology – Comprehensive (A), page 46
- Automotive Technology Maintenance Light Repair (T), page 117
- Aviation Maintenance Technician – General (C), page 188
- Aviation Technician – Airframe (T), page 118
- Aviation Technician – Powerplant (T), page 119
- Boiler Operator (C), page 189
- Bricklaying (T), page 123
- Carpentry (T), page 125
- Computer Numerical Control (CNC) Technician (T), page 129
- Dental Technician (T), page 133
- Diesel and Powertrain Servicing (T), page 134
- Electrical Power Distribution/Line Mechanic (T), page 137
- Electricity (T), page 138
- Landscape Horticulture (A), page 83
- Landscape Horticulture Technician (T), page 154
- Machine Tool Operations (T), page 155
- Manufacturing Maintenance (T), page 156
- Power Engineering and Boiler Operator (T), page 167
- Preparatory Plumbing (T), page 169
- Refrigeration, Air Conditioning and Heating Service Technician (T), page 172
- Technical Studies: Apprentice (A), page 103
- Tool and Die Making (T), page 178
- Truck Driving (T), page 180
- Welding (T), page 184
- Welding Fundamentals (C), page 203
- Welding Technology (A), page 106

STEM
Academic & Career Pathway

Our STEM (Science, Technology, Engineering & Math) programs are aligned with industry trends focused on changes in technology, equipment and software. Explore our STEM programs if you are interested in a career that will develop your technical aptitude, embrace your passion for problem-solving and challenge your analytical side.
matc.edu/course-catalog/stem

Pathway Offices
Downtown Milwaukee Campus,
Main Building, Room M312-314
Mequon Campus, Room A108-110
Oak Creek Campus, Room A121
West Allis Campus, Room 103
STEM-Pathway@matc.edu | Phone 414-297-6319

A Associate Degree program
T Technical Diploma program
C Certificate program

- Advanced Manufacturing Technology (A), page 32
- Architectural Technology (A), page 36
- Biomedical Electronics Technology (A), page 49
- Civil Engineering Technology (A), page 55
- Computer Electronics Technology (A), page 56
- Electronic Engineering Technology (A), page 62
- Electronic Technology – Automation (A), page 63
- Electronics Technician Fundamentals (T), page 139
- IT Computer Support Specialist (A), page 77
- IT Computer Support Technician (T), page 149
- IT Digital Forensics Analyst (T), page 150
- IT Help Desk Support Specialist (T), page 151
- IT Information Systems Security Specialist (A), page 78
- IT Mobile Applications Developer (A), page 79
- IT Network Specialist – Online Accelerated (A), page 80
- IT Network Specialist (A), page 81
- IT Networking and Infrastructure Administration (T), page 152
- IT User Support Technician (T), page 153
- IT Web and Software Developer (A), page 82
- Level 2 – Service Center Technician (C), page 196
- Mechanical and Computer Drafting (T), page 157
- Mechanical Design Technology (A), page 86
- Microsoft Enterprise Desktop Support Specialist (C), page 197
- Quality Engineering Technology, (A), page 96
- Service Center Technician (C), page 201
- Surveying and Mapping (T), page 177

ASSOCIATE DEGREES

The Associate of Arts, Associate of Science and Associate in Applied Science degree programs typically require two years of full-time study to complete.

Associate of Arts and Associate of Science degree programs include courses in the 200-level; credits earned in most 200-level courses will be accepted by four-year colleges and universities to satisfy course requirements for bachelor's degree programs. It is important to consult with the four-year school regarding specific credit transfer details.

Associate in Applied Science degree programs provide hands-on training leading directly to a career. Most courses in these programs are numbered in the 100-level; selected 100-level courses are accepted for transfer to bachelor's degree programs, but it is important to check transferability with the four-year school you plan to attend.

Accounting, p. 30
Administrative Professional, p. 31
Advanced Manufacturing Technology, p. 32
Air Conditioning and Refrigeration Technology, p. 33
Anesthesia Technology, p. 34
Animation, p. 35
Architectural Technology, p. 36
Associate of Arts, p. 37
Associate of Arts Online – Accelerated, p. 38
Associate of Arts – Community Engagement: Pre-Major, p. 39
Associate of Arts – Global Studies: Pre-Major, p. 40
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Associate of Science – Economics: Pre-Major, p. 44
Audio Production, p. 45
Automotive Technology – Comprehensive, p. 46
Baking and Pastry Arts, p. 47
Banking and Financial Services, p. 48
Biomedical Electronics Technology, p. 49
Business Analyst, p. 50
Business Management, p. 51
Cardiovascular Technology – Echocardiography, p. 52
Cardiovascular Technology – Invasive, p. 53
Chemical Technician, p. 54
Civil Engineering Technology, p. 55
Computer Electronics Technology, p. 56
Computer Simulation and Gaming, p. 57
Criminal Justice Studies, p. 58
Culinary Arts, p. 59
Dental Hygiene, p. 60
Early Childhood Education, p. 61
Electronic Engineering Technology, p. 62
Electronic Technology – Automation, p. 63
Environmental Health and Water Quality Technology, p. 64
eProduction, p. 65
Event Management, p. 66
Fire Protection Technician, p. 67
Funeral Service, p. 68
Graphic Design, p. 69
Health Information Technology, p. 70
Healthcare Services Management, p. 71
Hotel/Hospitality Management, p. 72
Human Resources, p. 73
Human Service Associate, p. 74
Individualized Technical Studies, p. 75
Interior Design, p. 76
IT Computer Support Specialist, p. 77
IT Information Systems Security Specialist, p. 78
IT Mobile Applications Developer, p. 79
IT Network Specialist – Online Accelerated, p. 80
IT Network Specialist, p. 81
IT Web and Software Developer, p. 82
Landscape Horticulture, p. 83
Marketing – Online Accelerated, p. 84
Marketing, p. 85
Mechanical Design Technology, p. 86
Medical Administrative Specialist, p. 87
Medical Laboratory Technician, p. 88
Music Occupations, p. 89
Nutrition and Dietetic Technician (formerly Dietetic Technician), p. 90
Occupational Therapy Assistant, p. 91
Paralegal, p. 92
Photography, p. 93
Physical Therapist Assistant, p. 94
Practical Nursing LPN-RN Educational Progression, p. 95
Quality Engineering Technology, p. 96
Radiography, p. 97
Real Estate, p. 98
Registered Nursing, p. 99
Respiratory Therapist, p. 100
Supply Chain Management, p. 101
Surgical Technology, p. 102
Technical Studies: Apprentice, p. 103
Television & Video Production, p. 104
Web & Digital Media Design, p. 105
Welding Technology, p. 106

Accounting

ASSOCIATE DEGREE | **Program Code: 10-101-1** | Downtown Milwaukee, Oak Creek, West Allis campuses (Also offered online)

ACCOUNTING
matc.edu/academics/pathways

Certificate
• Accounting Bookkeeper Trainee, p. 186

Technical Diploma
• Accounting Assistant, p. 108

Associate Degree
• Accounting, p. 30

Designed to provide fundamental accounting skills in a range of applications, this program is a good fit for students who like to work with numbers. You will learn about financial, cost, tax, payroll, governmental, nonprofit and computerized accounting.

Career Outlook

Qualified accounting applicants continue to be in demand.

Program Learning Outcomes

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

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ACCTG-111 Accounting 1 ^	4
(1)	ACCTG-121 Income Taxation ^	4
(1)	ACCTG-122 Accounting Software Applications ^	3
(1)	MATH-107 College Mathematics ‡ ^	3
	(or) Any 200-level MATH course	
(2)	ACCTG-113 Accounting 2 ‡ ^	4
(2)	ACCTG-130 Computerized Accounting ‡ ^	3
(2)	ACCTG-142 Payroll Accounting ^	2
(2)	BADM-165 Legal Environment of Business ^	3
(2)	ENG-195 Written Communication ^	3
	(or) ENG-201 English 1 ‡	
(3)	ACCTG-116 Intermediate Accounting ‡	4
(3)	ACCTG-126 Accounting for Managers	3
(3)	ECON-195 Economics	3
	(or) Any 200-level ECON course	
(3)	ENG-197 Technical Reporting	3
	(or) Any 200-level ENG course	
(3)	FIN-180 Financial Statement Analysis ‡	3
(4)	ACCTG-140 Accounting for Governmental and Nonprofit Entities ‡	3
(4)	ACCTG-145 Forensic Accounting ‡	3
	(or) ACCTG-155 Applied Individual Income Tax ‡	
(4)	ACCTG-150 Accounting Practice With a Systems Approach ‡	3
(4)	FIN-120 Introduction to Money, Banking and Financial Markets ‡	3
(4)	PSYCH-199 Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
	TOTAL CREDITS:	**60**

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Accounting Assistant technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Administrative Professional

ASSOCIATE DEGREE | **Program Code: 10-106-6** | West Allis Campus

ADMINISTRATIVE PROFESSIONAL
matc.edu/academics/pathways

Technical Diploma
• Office Technology Assistant, p. 163

Associate Degree
• Administrative Professional, p. 31

Get ready to take on key responsibilities that include operating new office technologies, performing and coordinating an office's administrative activities, and storing and integrating information for dissemination to staff and clients.

Career Outlook

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

Program Learning Outcomes

- Demonstrate effective workplace communications
- Apply technology skills to business and administrative tasks
- Perform routine administrative procedures
- Manage administrative projects
- Maintain internal and external relationships
- Model professionalism in the workplace

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ENG-195	Written Communication (or) ENG-201 English 1 ‡	3
(1) OFTECH-101	Office Technologies 1 ^	3
(1) OFTECH-103	Keyboard and Keypad ^	1
(1) OFTECH-122	Business English Essentials ^	3
(1) SOCSCI-172	Introduction to Diversity Studies (or) Any 200-level SOCSCI or HIST course	3
(2) ENG-196	Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(2) OFTECH-104	Budgeting Basics for Support Personnel ^	3
(2) OFTECH-119	Information Management ^	3
(2) OFTECH-133	Business Document Production 1 ‡ ^	3
(2) OFTECH-184	MS Office: Word, Excel, Access and PowerPoint ‡ ^	3
(3) MATH-123	Math With Business Applications ‡	3
(3) OFTECH-111	Workplace Communication for Support Personnel	3
(3) OFTECH-123	Proofreading and Editing	3
(3) OFTECH-153	Collaboration Tools	1
(3) OFTECH-165	Administrative Office Procedures 1 ‡ ^	3
(3) OFTECH-182	Customer Service Skills ^	3
(4) ELECTIVES	(Three credits needed)	3
(4) OFTECH-170	Meeting and Event Planning for Support Personnel	3
(4) OFTECH-185	MS Office – Intermediate ‡	3
(4) OFTECH-187	Business Publications	3
(4) OFTECH-196	Administrative Professional Internship ‡ ^	1
(4) PSYCH-199	Psychology of Human Relations (or) Any 200-level PSYCH course	3

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Office Technology Assistant technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Advanced Manufacturing Technology

ASSOCIATE DEGREE | **Program Code: 10-664-2** | Downtown Milwaukee Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Gain skills related to the latest manufacturing technology, sometimes known as Smart Manufacturing or Industry 4.0, which requires a skill set related to microprocessor-driven equipment, sensors and processes.

Career Outlook

The outlook for the advanced manufacturing industry is strong. This program addresses employers' needs for manufacturing technicians capable of working with today's complex manufacturing equipment and processes.

Program Learning Outcomes

- Apply state and national safety rules to the manufacturing systems environment
- Analyze automation within a complex manufacturing system
- Manage advanced manufacturing systems for operational efficiency and cost control
- Analyze technical specifications for implementation of manufacturing systems, modules, and components

(See full description at matc.edu.)

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or equivalent

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Start Date: August

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ADVMFG-100** Introduction to Industrial Control Systems	2
(1)	**ADVMFG-110** Introduction to Mechatronics	2
(1)	**ADVMFG-113** Advanced Manufacturing DC/AC Circuits 1 ‡	3
(1)	**ADVMFG-115** Interpret Engineering Drawings	2
(1)	**MATH-115** College Technical Mathematics 1 ‡	5
	(or) Any 200-level MATH course	
(2)	**ADVMFG-102** Advanced Manufacturing Motor Controls ‡	3
(2)	**ADVMFG-105** Introduction to Robotics ‡	2
(2)	**ADVMFG-114** Advanced Manufacturing DC/AC Circuits 2 ‡	3
(2)	**ADVMFG-120** Introduction to Industrial Internet of Things (IIoT) ‡	2
(2)	**ADVMFG-130** Advanced Manufacturing Digital Electronics	4
(2)	**ECON-195** Economics	3
	(or) Any 200-level ECON course	
(2)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(3)	**ADVMFG-111** Advanced Manufacturing Machine Mechanisms ‡	3
(3)	**ADVMFG-116** Introduction to Manufacturing Quality Control Systems ‡	2
(3)	**ADVMFG-117** Advanced Manufacturing Materials and Processes ‡	2
(3)	**ADVMFG-121** Vision and Smart Sensors ‡	2
(3)	**ADVMFG-196** Advanced Manufacturing PLC System Basics ‡	3
(3)	**ENG-196** Oral/Interpersonal Communication	3
	(or) Any 200-level ENG or SPEECH course	
(4)	**ADVMFG-112** Fundamentals of Machining Processes ‡	3
(4)	**ADVMFG-122** Advanced Manufacturing Engineering Project Management ‡	2
(4)	**ADVMFG-190** Advanced Manufacturing Design Problems ‡	2
(4)	**ADVMFG-192** Advanced Manufacturing Fluid Power ‡	3
(4)	**ADVMFG-198** Advanced Manufacturing PLC System Applications ‡	2
(4)	**PSYCH-199** Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
	TOTAL CREDITS:	**64**

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Air Conditioning and Refrigeration Technology

ASSOCIATE DEGREE | **Program Code: 10-601-1** | Oak Creek Campus

The Refrigeration, Air Conditioning and Heating Service Technician technical diploma ladders into this associate degree. Contact an MATC advisor for information.

Ensure comfortable environments in homes and businesses. Students attain a background in mathematics, drafting, electricity and thermodynamics. Co-op credit may be available for appropriate employment opportunities.

Career Outlook

There is a steady demand for trained air conditioning and refrigeration technicians.

Program Learning Outcomes

- Install HVAC/R components
- Service HVAC/R systems
- Troubleshoot HVAC/R systems
- Evaluate HVAC/R system designs

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ENG-195	Written Communication	3
	(or) ENG-201 English 1 ‡	
(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
(1) NATSCI-112	Principles of Sustainability	3
(2) ENG-197	Technical Reporting	3
(2) HVAC2-114	Electrical Controls and Systems ‡	4
(2) HVAC2-115	Refrigeration 1 ‡	4
(2) HVAC2-120	Heating Systems 1 ‡	4
(2) MATH-107	College Mathematics ‡	3
	(or) Any 200-level MATH course	
(3) HVAC2-116	Refrigeration 2 ‡	4
(3) HVAC2-121	Heating Systems 2 ‡	4
(3) HVAC2-146	Digital Energy Management Systems ‡	2
(3) HVAC2-148	Heat Pumps ‡	3
(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
(4) PSYCH-199	Psychology of Human Relations	3
(4) SOCSCI-197	Contemporary American Society	3

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Air Conditioning, Heating and Refrigeration Technology.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Anesthesia Technology

ASSOCIATE DEGREE | **Program Code: 10-541-1** | Downtown Milwaukee Campus

ANESTHESIA TECHNOLOGIST
matc.edu/academics/pathways

Certificate
• Healthcare Customer Service, p. 195

Associate Degree
• Anesthesia Technology, p. 34

Become an anesthesia technologist and you'll be a vital member of the anesthesia care team. These technologists work under the direction of the anesthesia provider and are proficient in the acquisition, preparation and application of the equipment required for the delivery of anesthesia care. Graduates are eligible to take the American Society of Anesthesia Technologists & Technicians (ASATT) National Certification Examination to become certified as an Anesthesia Technologist (Cer.A.T.T.).

Career Outlook

Anesthesia technologists are in high demand.

Program Learning Outcomes

- Apply healthcare and technological science principles to the OR environment
- Operate patient-related equipment
- Perform intraoperative case management as an anesthesia technologist

Admission Requirements

High school diploma or GED, and one year of high school-level biology, chemistry and algebra required. This program admits students through a petition selection process. See this program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater FL 33763; 727-210-2350; caahep.org/Students/Program-Info/Anesthesia-Technology.aspx.

COURSES		Credits
(1)	**ANTECH-102** Introduction to Anesthesia Technology ‡	**2**
(1)	**ENG-195** Written Communication	**3**
	(or) ENG-201 English 1 ‡	
(1)	**HEALTH-101** Medical Terminology ^	**3**
(1)	**HEALTH-104** Culture of Healthcare ^	**2**
(1)	**HEALTH-107** Digital Literacy for Healthcare ^	**2**
(1)	**NATSCI-177** General Anatomy and Physiology ‡	**4**
	(or) NATSCI-201 Anatomy and Physiology 1 ‡	
(2)	**ANTECH-117** AT Fundamentals 1 ‡	**3**
(2)	**ANTECH-118** AT Instrumentation 1 ‡	**3**
(2)	**ANTECH-120** AT Clinical Procedures ‡	**2**
(2)	**CVTECH-110** EKG Analysis ‡	**2**
(2)	**ENG-197** Technical Reporting	**3**
	(or) Any 200-level ENG or SPEECH course	
(2)	**NATSCI-179** Advanced Anatomy and Physiology ‡	**4**
	(or) NATSCI-202 Anatomy and Physiology 2 ‡	
(2)	**PSYCH-199** Psychology of Human Relations	**3**
	(or) Any 200-level PSYCH course	
(2)	**SOCSCI-197** Contemporary American Society	**3**
	(or) Any 200-level SOCSCI course	
(3)	**ANTECH-133** Anesthetics ‡	**3**
(3)	**ANTECH-137** AT Fundamentals 2 ‡	**3**
(3)	**ANTECH-138** AT Instrumentation 2 ‡	**3**
(3)	**ANTECH-139** Anesthesia Technology Clinical Experience 1 ‡	**3**
(3)	**CVTECH-132** Physics of Medicine ‡	**3**
(4)	**ANTECH-185** Anesthesia Technology Clinical Seminar ‡	**2**
(4)	**ANTECH-186** Anesthesia Technology Clinical Experience 2 ‡	**4**
(4)	**ANTECH-187** Anesthesia Technology Clinical Experience 3 ‡	**4**

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Healthcare Customer Service certificate.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Animation

ASSOCIATE DEGREE | **Program Code: 10-207-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

MATC's unique facilities and the program's innovative curriculum offer a comprehensive background in animation. Students have opportunities to learn about 2D animation and 3D animation. Portfolio reviews in several courses are designed to assist you in compiling work samples to show employers.

Career Outlook

From visualization of architectural spaces to video games to effects in movies, animation is expanding.

Program Learning Outcomes

- Create an animated asset for a product
- Build assets suitable for export and/or rendering to target platforms
- Apply fundamental artistic concepts to the 3D environment
- Implement project management skills

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ANIM-101	Basic Drawing for Animators 3
(1)	ANIM-104	Principles of Character Development .. 3
(1)	ANIM-106	Principles of 3D Animation 3
(1)	CSG-115	CSG Production 3
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(2)	ANIM-120	Environment and Set Design ‡ ..... 3 (or) ANIM-114 Storyboard Pro ‡
(2)	ANIM-125	3D Modeling ‡ ..... 3 (or) ANIM-138 Animation for Game Development ‡
(2)	ANIM-140	Timelines, Keyframes and Kinematics ‡ 3
(2)	ANIM-156	Broadcast Animation ‡ 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(3)	ANIM-124	Animation Layout and Design ‡ 3
(3)	ANIM-130	3D Simulations and Illustrations ‡ 3
(3)	ANIM-145	Intermediate 3D Animation ‡ ..... 3 (or) ANIM-121 Intermediate 2D Animation ‡
(3)	CSG-147	Game Studio Management 3
(3)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course
(4)	ANIM-110	Digital Life Drawing 3
(4)	ANIM-150	Advanced Animation ‡ 2
(4)	ANIM-160	Animation Portfolio ‡ 2
(4)	ANIM-165	Motion Analysis for Animation ‡ 3
(4)	CSG-119	Designing Interactive Displays ‡ 3
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI course

TOTAL CREDITS: 64

( ) Semester order for full-time students.
‡ Prerequisite required.
Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Architectural Technology

ASSOCIATE DEGREE | **Program Code: 10-614-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This program prepares students for work in fields related to architecture and construction. 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.

Career Outlook

Architectural technicians are in demand. They work with architects, engineers, contractors, designers, and building material manufacturers and suppliers.

Program Learning Outcomes

- Develop construction documents
- Evaluate building materials
- Develop building designs
- Integrate building systems

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra and geometry

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ARCHT-101	Architectural Theory and Drawing 1 4
(1)	ARCHT-105	Architectural History 2
(1)	ARCHT-110	Computer Applications for Architecture .. 2
(1)	ARCHT-121	Architectural Materials and Methods 1.. 2
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	MATH-115	College Technical Mathematics 1 ‡ 5
(2)	ARCHT-109	Architectural Theory and CADD ‡ 4
(2)	ARCHT-120	Structural Systems and Components ‡.. 3
(2)	ARCHT-122	Architectural Materials and Methods 2 ‡.. 3
(2)	ENG-196	Oral/Interpersonal Communication ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	MATH-116	College Technical Mathematics 2 ‡ 4
(3)	ARCHT-103	Architectural Theory and CADD 3 ‡ 5
(3)	ARCHT-131	Mechanical and Environmental Systems 1 ‡ 2
(3)	ELECTIVES	(Two credits needed) 2
(3)	NATSCI-139	Survey of Physics 3
(3)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	ARCHT-104	Architectural Theory and CADD 4 ‡ 5
(4)	ARCHT-107	Building Estimating 2
(4)	ARCHT-132	Mechanical and Environmental Systems 2 ‡ 2
(4)	ARCHT-141	Architectural Practices and Procedures ‡ 2
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

STEM

Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Associate of Arts Liberal Arts and Sciences Four-Year College Transfer Program

ASSOCIATE DEGREE | **Program Code: 20-800-1** | All campuses

The Associate of Arts degree provides you 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 humanities and allow students many options to analyze information, think critically and creatively, respect diversity and collaborate with others. Courses may be taken online or face to face. Students who plan to transfer should consult with the four-year college/university regarding specific requirements for a major and the credit transfer details. Contact an MATC advisor for more information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

‡ 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. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**

ENG-201	English 1 ‡
ENG-202	English 2 ‡

Speech – 3 credits required **3**

SPEECH-201	Elements of Speech
(or) SPEECH-203	Interpersonal Communication
(or) SPEECH-206	Intercultural Communication

Humanities – 15 credits required **15**

Select credits from 200-level courses in the humanities (such as English, music, speech, art, foreign language).

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.

Social Sciences – 15 credits required **15**

The 15 credits must be taken from at least three of these five areas:

1.	ECONOMICS	ECON-195 (or) any 200-level ECON course
2.	SOCSCI-203	Introduction to Sociology
3.	PSYCH-231	Introductory Psychology
4.	SOCSCI-221	American National Government and Politics Today
	(or) SOCSCI-222	American State and Local Government
5.	HISTORY	Any 200-level HIST course

World/Foreign Language – 4 credits required **4**

This requirement may be waived if student has completed four high school semesters of the same foreign language with a grade of C or higher; the four waived credits must be made up by another 200-level course. 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.

Mathematics – 4 credits required **4**

Select any 200-level MATH courses, except MATH-260.

Natural Sciences – 7 credits required **7**

Select any 200-level NATSCI courses.
Four credits must be in a laboratory science.

Physical Education – 3 credits required **3**

Select any 200-level PHYED course.

Additional Electives – 7 credits required **7**

Choose primarily from 200-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

Associate of Arts: Online – Accelerated

ASSOCIATE DEGREE | **Program Code: 20-800-1** | Offered entirely online

Liberal Arts and Sciences Four-Year College Transfer Program

This online accelerated degree program provides you 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 sessions. A session lasts seven or eight weeks. The degree also can be completed in more time, per your schedule.

Students who plan to transfer are advised to consult with the four-year college/university regarding specific requirements for a major, and the credit transfer details. Contact an MATC advisor for more information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

Quin 1: Fall term, first session		Credits
ENG-201	English 1 ‡	**3**
PHYED-210	An Active Approach to Wellness and Fitness	**3**
ECON-201	Principles of Microeconomics	**3**
HIST-211	America Through 1877	**3**
Quin 2: Fall term, second session		
SOCSCI-203	Introduction to Sociology	**3**
SPEECH-206	Intercultural Communication	**3**
ECON-202	Principles of Macroeconomics	**3**
PSYCH-231	Introductory Psychology	**3**
Quin 3: Spring term, third session		
ENG-202	English 2 ‡	**3**
MATH-200	Intermediate Algebra ‡	**4**
FLANG-202	Spanish 1	**4**

This requirement may be waived if student has completed four high school semesters of the same foreign language with a grade of C or higher; the four waived credits must be made up by another 200-level course. 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.

HIST-212	America Since 1877	**3**
Quin 4: Spring term, fourth session		
SOCSCI-221	American National Government and Politics Today	**3**
ART-201	Understanding Art	**3**
NATSCI-232	Earth Science	**3**
NATSCI-234	Earth Science Laboratory	**1**
SOCSCI-217	Valuing Diversity	**3**
Quin 5: Summer term, fifth session		
Choose any 200-level Natural Sciences (NATSCI) course		**3**
Additional Electives – 9 credits required		**9**

Choose primarily from 200-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: 63

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Note: Consult the four-year college or university you plan to attend regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher.

Associate of Arts Community Engagement: Pre-Major

ASSOCIATE DEGREE | **Program Code: 20-800-1** | All campuses

Liberal Arts and Sciences Four-Year College Transfer Program

This Associate of Arts program prepares you to create positive change through advocacy and community engagement. The curriculum explores contemporary urban issues with an emphasis on social action and diverse perspectives. Through this program, students earn the first two years of bachelor's degree credit courses that will transfer to a four-year college/university. Courses may be taken online, or face to face. Students who plan to transfer should consult with the four-year college/university regarding specific requirements for a major and credit transfer details. Contact an MATC advisor for more information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

*‡ Prerequisite required. *This requirement for World/Foreign Language may be waived if student has completed four high school semesters of the same foreign language with a grade of C or higher; the four waived credits must be made up by another 200-level course. 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. Note: It is important to consult the four-year college/university regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC. Students in their final semester should choose a course incorporating service learning. Curriculum requirements are subject to change.*

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**
ENG-201 English 1 ‡
ENG-202 English 2 ‡

Speech – 3 credits required **3**
SPEECH-203 Interpersonal Communication

Humanities – 15 credits required **15**
ART-201 Understanding Art

Any 200-level ENG diversity-focused literature course; choose one of the following:
- ENG-218 African-American Literature 1 ‡
- ENG-219 African-American Literature 2 ‡
- ENG-220 Native American Literature ‡
- ENG-221 Native American Women in Literature ‡
- ENG-222 Images of Women in Literature ‡
- ENG-223 African-American Literature By and About Black Women ‡

Any additional 200-level FLANG, MUSIC, ENG, SPEECH or ART (9 or more credits); additional foreign language is not required but is recommended.

Social Sciences – 15 credits required **15**
SOCSCI-203 Introduction to Sociology
SOCSCI-217 Valuing Diversity
SOCSCI-221 American National Government and Politics Today
HIST-216 History of American Minorities
(or) HIST-217 Contemporary Civil Rights
ECONOMICS: ECON-195 (or) any 200-level ECON course

World/Foreign Language* – 4 credits required **4**
Any 200-level FLANG

Mathematics – 4 credits required at the level of intermediate algebra or above **4**
MATH-200 Intermediate Algebra ‡

Natural Sciences – 7 credits required (4 credits must be lab) **7**
NATSCI-232 Earth Science, take concurrently with NATSCI-234 Earth Sciences Laboratory
Any 200-level NATSCI technology or environmental sciences-related course; choose one of the following:
- NATSCI-233 Environmental Science
- NATSCI-246 Climate Change Fundamentals
- NATSCI-260 Plagues, People and Power
- NATSCI-262 Energy in Nature, Technology & Society

Physical Education – 1 to 3 credits required **1–3**
Select any 200-level PHYED course(s).

Additional Electives – 7 to 9 credits required **7–9**
Choose primarily from 200-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

Associate of Arts Global Studies: Pre-Major

ASSOCIATE DEGREE | **Program Code: 20-800-1** | All campuses

Liberal Arts and Sciences Four-Year College Transfer Program

This Associate of Arts program prepares you for effective intercultural interaction in a globalized society. The curriculum explores contemporary global issues with an emphasis on foreign language study, multicultural perspectives and service learning. Students will develop effective communication skills and learn strategies to support cultural exploration in a global context. Students earn the first two years of bachelor's degree credit courses that will transfer (consult with the destination institution regarding specific requirements for a major and credit transfer details). Courses may be taken online or face to face.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

‡ Prerequisite required.

Note: It is important to consult the four-year college/university regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC. Students in their final semester should choose a course incorporating service learning. See an MATC advisor for information.

Program curriculum requirements are subject to change.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**
ENG-201 English 1 ‡
ENG-202 English 2 ‡

Speech – 3 credits required **3**
SPEECH-206 Intercultural Communication

World Language – 4 credits required for MATC Associate of Arts degree **4**
However, five levels of languages are required at four-year colleges

Humanities – 15 credits required **15**
Recommended – Any additional 200-level FLANG courses (15 credits)

Social Sciences – 15 credits required **15**
SOCSCI-208 Global Cultures and Politics
(or) GLOBAL-115 International Field Studies
SOCSCI-217 Valuing Diversity
SOCSCI-224 Peoples and Cultures of the World
HIST-205 Contemporary World Affairs
(or) HIST-223 Latin American History
ECON-223 Ecological Economics
(or) ECON-202 Principles of Macroeconomics

Mathematics – 4 credits required at the level of intermediate algebra or above **4**
MATH-200 Intermediate Algebra ‡
(or) Any 200-level MATH course

Natural Sciences – 7 credits required (4 credits must be lab) **7**
NATSCI-232 Earth Science (3 credits), take concurrently with NATSCI-234 Earth Sciences Laboratory (1 credit)
Any 200-level NATSCI technology or environmental sciences-related course; choose one of the following:
NATSCI-233 Environmental Science
NATSCI-246 Climate Change Fundamentals
NATSCI-260 Plagues, People and Power
NATSCI-262 Energy in Nature, Technology & Society

Physical Education – 1 to 3 credits required **1–3**
Select any 200-level PHYED course(s).

Additional Electives – 9 credits required **9**
Choose any 200-level courses.

TOTAL CREDITS: 64

Associate of Arts Teacher Education: Pre-Major

ASSOCIATE DEGREE | **Program Code: 20-800-1** | All campuses

Liberal Arts and Sciences Four-Year College Transfer Program

To prepare for a teaching career, this program is designed for students interested in entering K-12 teacher licensing programs at four-year colleges and universities. The program enables you to fulfill the first two years of requirements for a bachelor's degree at MATC. The curriculum includes courses focused on the foundations of urban education.

Some of the colleges and universities that MATC students can transfer to include Alverno College, Cardinal Stritch University, Carroll University, Lakeland University, Marquette University, Mount Mary University, UW-Milwaukee and UW-Whitewater.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

‡ Prerequisite required.
Note: It is important to consult the four-year institution regarding transferability of your selected courses. Contact an MATC advisor for information.
Program curriculum requirements are subject to change.

Start Dates: August/January/June

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

Steps to Success

- Complete the MATC admissions process
- Enroll in EDF-249 Orientation to Urban Teaching
- Full admission to this program requires completion of the following courses with a grade of C or higher: EDF-249, ENG-201 and MATGEN-110 (or sufficient math placement score)
- After you've been admitted to the program, meet with your advisor at least once every semester to select courses
- Earn your associate degree through the Teacher Education: Pre-Major at MATC, including four teacher preparation courses
- Complete your associate degree with a GPA of 2.5 or higher
- Apply to the School of Education at one of the partnering four-year colleges/universities, where you will continue your studies to receive your bachelor's degree in education
- After you receive your bachelor's degree, you will be eligible to apply for a Wisconsin teaching license

Learning Goals and Curriculum Requirements

The curriculum includes four courses in Educational Foundations focused on the historical, cultural, sociological and philosophical foundations of urban education. Students complete observational and participatory experiences with Milwaukee Public Schools.

Educational Foundations – 10 credits required **10**
EDF-249 Orientation to Urban Teaching
EDF-253 Issues in Urban Teaching ‡
EDF-254 Field Experience in Urban K-12 Classrooms ‡
EDF-255 Introduction to Teaching ‡

English – 9 credits required **9**
ENG-201 English 1 ‡
ENG-202 English 2 ‡
SPEECH-201 Elements of Speech

Social Science – 12 credits required **12**
HIST-211 (or) HIST-212
SOCSCI-221 (or) SOCSCI-222
PSYCH-270
+ one more course

Mathematics – 4 or 6 credits required ..... **4 or 6**
Seeking K-3 or 1-8 licensure
MATH-275 ‡ and MATH-276 ‡
Seeking 6-12 licensure
MATH-200 ‡

Natural Science – 7 credits required **7**
NATSCI-233 + a lab course

Humanities – 15 credits required **15**
ART-201, MUSIC-205 (or) SPEECH-212
ENG-220 ‡
+ three more courses

World Languages – 4 credits required **4**

Physical Education – 3 credits required **3**

TOTAL CREDITS: 64
(66 credits: Seeking K-3 or 1-8 licensure)

Associate of Science Liberal Arts and Sciences Four-Year College Transfer Program

ASSOCIATE DEGREE | **Program Code: 20-800-2** | All campuses

The Associate of Science degree provides you 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. Courses may be taken online or face to face. Students who plan to transfer should consult with the four-year college/university regarding specific requirements for a major and the credit transfer details. Contact an MATC advisor for information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

*‡ Prerequisite required. * This requirement for World/Foreign Language may be waived if student has completed four high school semesters of the same foreign language with a grade of C or higher; the four waived credits must be made up by another 200-level course. 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. Note: It is important to consult the four-year institution regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC. Program curriculum requirements are subject to change.*

Start Dates: August and January

General Education

Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**
ENG-201 English 1 ‡
ENG-202 English 2 ‡

Speech – 3 credits required **3**
SPEECH-201 Elements of Speech
(or) SPEECH-203 Interpersonal Communication
(or) SPEECH-206 Intercultural Communication

Humanities – 9 credits required **9**
Select credits from 200-level 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.

Social Sciences – 9 credits required **9**
The nine credits must be taken from at least three of these five areas:

1.	ECONOMICS	ECON-195 (or) any 200-level ECON course
2.	SOCSCI-203	Introduction to Sociology
3.	PSYCH-231	Introductory Psychology
4.	SOCSCI-221	American National Government and Politics Today
	(or) SOCSCI-222	American State and Local Government
5.	HISTORY	Any 200-level HIST course

World/Foreign Language* – 4 credits required **4**

Mathematics – 5 credits required **5**
MATH-231 Analytic Geometry and Calculus 1 ‡

Natural Sciences – 8 credits required **8**
Select at least one 200-level course with laboratory from each of two areas of NATSCI: chemistry, biology, earth sciences and physics.

Mathematics or Natural Sciences emphasis – 12 credits required **12**
Select additional (optional) mathematics credits from the following courses only:
1. MATH-232 Analytic Geometry and Calculus 2 ‡; MATH-233 Analytic Geometry and Calculus 3 ‡; MATH-234 Differential Equations/Linear Algebra ‡ (and/or)
2. Any 200-level NATSCI courses

Physical Education – 3 credits required **3**
Select any 200-level PHYED course.

Additional Electives – 5 credits required **5**
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

Associate of Science Chemical Technology: Pre-Major

ASSOCIATE DEGREE | **Program Code: 20-800-2** | Downtown Milwaukee Campus

Liberal Arts and Sciences Four-Year College Transfer Program

The Associate of Science Chemical Technology: Pre-Major 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 you for both transfer to a four-year 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 college/university regarding specific requirements for a major and the credit transfer details. Contact an MATC advisor for information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Note: It is important to consult the four-year institution regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**

ENG-201	English 1 ‡
ENG-202	English 2 ‡

Speech – 3 credits required **3**

SPEECH-201	Elements of Speech
(or) SPEECH-203	Interpersonal Communication
(or) SPEECH-206	Intercultural Communication

Humanities – 9 credits required **9**

Select credits from 200-level 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.

Social Sciences – 9 credits required **9**

The nine credits must be taken from at least three of these five areas:

1.	ECONOMICS	ECON-195 (or) any 200-level ECON course
2.	SOCSCI-203	Introduction to Sociology
3.	PSYCH-231	Introductory Psychology
4.	SOCSCI-221	American National Government and Politics Today
	(or) SOCSCI-222	American State and Local Government
5.	HISTORY	Any 200-level HIST course

World/Foreign Language – 4 credits required **4**

This requirement may be waived if student has completed four high school semesters of the same foreign language with a grade of C or higher; the four waived credits must be made up by another 200-level course. 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.

Natural Sciences – 20 credits required **20**

NATSCI-211	Chemistry 1 ‡
NATSCI-212	Chemistry 2 ‡
NATSCI-215	Quantitative Chemical Analysis ‡
NATSCI-217	Organic Chemistry 1 ‡
NATSCI-219	Organic Chemistry Lab 1 ‡

Mathematics – 5 credits required **5**

MATH-231	Analytic Geometry and Calculus 1 ‡

Physical Education – 3 credits required **3**

Select any 200-level PHYED course.

Additional Electives – 7 credits required **7**

CHEMT-103	Introduction to Chemical Technology
CHEMT-107	Industrial Methods of Analysis ‡
CHEMT-109	Chemical Processes ‡

TOTAL CREDITS: 66

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

Associate of Science Economics: Pre-Major

ASSOCIATE DEGREE | **Program Code: 20-800-2** | All campuses

Liberal Arts and Sciences Four-Year College Transfer Program

Economic issues affect you as a consumer, producer, worker, citizen and investor. Gain knowledge of economics and develop the analytical, critical thinking and communication skills needed for transfer to a four-year college, and to begin a career related to economics, business or finance. You also will become competent in making personal decisions that rely on understanding economics.

This program provides the first two years of bachelor's degree credit courses that can transfer to four-year colleges and universities. Students who plan to transfer should consult with the four-year college/university regarding specific requirements for a major. Contact an MATC advisor for information.

Program Learning Outcomes

- Effective Communication
- Information Literacy
- Global Awareness
- Analytical/Critical Thinking
- Professionalism
- Scientific Method

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Note: It is important to consult the four-year institution regarding transferability of your selected courses. Successful completion of this degree requires a grade-point average of 2.0 (C) or higher, with 25% of the credits taken at MATC.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

English – 6 credits required **6**
ENG-201 English 1 ‡
ENG-202 English 2 ‡

Speech – 3 credits required **3**
SPEECH-201 Elements of Speech
(or) SPEECH-203 Interpersonal Communication
(or) SPEECH-206 Intercultural Communication

Humanities – 6 credits required **6**
Select credits from 200-level courses in the humanities (such as ART, ENG, FLANG, HIST, MUSIC, SOCSCI, SPEECH – see matc.edu for full list). Three credits must be in 200-level diversity/ethnic studies courses.

World/Foreign Language – 4 credits required **4**
Select one 200-level Foreign Language (FLANG) course (or) one year of World Language in high school with a grade of C or higher.

Social Sciences – 3 credits required **3**
Choose from: HIST-205, HIST-206, HIST-212, HIST-213, HIST-220, HIST-232; PSYCH-231, PSYCH-233‡; SOCSCI-200; SOCSCI-205, SOCSCI-221, SOCSCI-222, SOCSCI-229.

Economics – 18 credits required **18**
ECON-201 and ECON-202; and select 12 additional credits from any 200-level Economics (ECON) courses.

Mathematics – 12 credits required **12**
MATH-201 College Algebra ‡
MATH-231 Analytic Geometry and Calculus 1 ‡
MATH-260 Basic Statistics ‡

Natural Sciences – 8 credits required **8**
Select eight credits of 200-level courses with lab from at least 2 areas of NATSCI:

Physics: NATSCI-221‡, or NATSCI-222‡, or NATSCI-274‡, or NATSCI-275‡;

Earth Sciences: NATSCI-245, or pair of NATSCI-243 and NATSCI-244, or pair of NATSCI-225 and NATSCI-226;

Biology: NATSCI-201‡, or NATSCI-202‡, or NATSCI-236‡, or NATSCI-257‡;

Chemistry: NATSCI-211‡, or NATSCI-212‡, or NATSCI-215‡, or pair of NATSCI-217‡ and NATSCI-219‡

Physical Education – 1 credit required **1**
Select any 200-level PHYED course.

TOTAL CREDITS: 61

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

Audio Production

ASSOCIATE DEGREE | **Program Code: 10-701-4** | Downtown Milwaukee Campus

AUDIO PRODUCTION
matc.edu/academics/pathways

Technical Diploma
• Audio Engineer, p. 113

Associate Degree
• Audio Production, p. 45

Combining creative and practical aspects of sound and music, this program prepares you to enter the audio engineering field. Coursework covers working with live and recorded sound to provide more employment options.

Career Outlook

The explosion of social media and web use for independent artists, plus the increase in affordable digital audio workstations, present opportunities for audio engineers.

Program Learning Outcomes

- Produce and edit audio recordings using professional software and equipment
- Apply studio management practices and standards
- Apply critical listening and post-production mastering skills to final audio mixes
- Demonstrate the process of live mixing by blending multiple sources of digital audio using a mixing console

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in the Mac OS
- Ability to hear without impairment
- Must have the ability to lift, bend, and move equipment

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	AUDIO-100	Introduction to Audio Software ^ 1
(1)	AUDIO-102	Techniques of Sound Recording ‡ ^ ... 3
(1)	AUDIO-103	Recording Live Concerts ‡ ^ 3
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	MUSIC-148	Music Fundamentals 1 ^ 2
(1)	MUSIC-189	Voice Lab 1 ^ 1
(2)	AUDIO-111	Advanced Audio Software ‡ ^ 1
(2)	AUDIO-114	Critical Listening of Sound and Music 2
(2)	AUDIO-116	Advanced Techniques of Sound Recording ‡ ^ 3
(2)	AUDIO-117	Sound Reinforcement ^ 3
(2)	ELECTIVES	(Three credits needed) 3
(2)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course
(2)	MUSIC-177	Piano Lab 1 ^ 1
(2)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(3)	AUDIO-118	Studio Management and Design ‡ 2
(3)	AUDIO-120	Audio Production for Visual Media 3
(3)	AUDIO-125	Advanced Midi Recording ‡ 1
(3)	ENG-196	Oral/Interpersonal Communication .... 3 (or) Any 200-level ENG or SPEECH course
(3)	MUSIC-101	Music Business 2
(3)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI or HIST course
(4)	AUDIO-126	Electronics for Audio Engineers ‡ ^ ... 2
(4)	AUDIO-127	Mastering for Media ‡ 3
(4)	AUDIO-128	Final Project – Field Work ‡ 3
(4)	ELECTIVES	(Three credits needed) 3
(4)	MKTG-118	Social Media Marketing 3

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Audio Engineer technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Automotive Technology – Comprehensive

ASSOCIATE DEGREE | **Program Code: 10-602-6** | Mequon Campus

AUTOMOTIVE TECHNOLOGY – COMPREHENSIVE
matc.edu/academics/pathways

Technical Diploma
- Automotive Technology Maintenance Light Repair, p. 117

Associate Degree
- Automotive Technology – Comprehensive, p. 46

Bumper-to-bumper diagnostics, repairs and preventive maintenance will be taught on cars and light trucks. The Automotive Technology programs are: Ford ASSET (Automotive Student Service Educational Training), MOPAR CAP (Career Automotive Program) and CART (Comprehensive Automotive Repair Technology). Manufacturer credentials are earned in ASSET and CAP programs.

Career Outlook

The demand for trained automotive technicians is high.

Program Learning Outcomes

- Demonstrate professionalism appropriate for the auto service industry
- Perform diagnosis, service, and repair of automotive internal combustion engines
- Perform diagnosis, service, and repair of automotive automatic transmission/ transaxle systems

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- Dealership sponsor is required to provide applied automotive experience opportunities; program advisors will help locate a sponsor

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the ASE Education Foundation, 1503 Edwards Ferry Road NE, Suite 401, Leesburg, VA 20176; 703-669-6650; aseeducationfoundation.org.

COURSES		Credits
(1)	AUTO2-150 Automotive Fundamentals ^	2
(1)	AUTO2-151 Electrical Systems 1 ‡ ^	4
(1)	AUTO2-152 Automotive Climate Control ‡ ^	2
(1)	AUTO2-154 Fuel Management 1 ‡ ^	2
(1)	AUTO2-161 Express Service ‡ ^	3
(1)	AUTO2-164 Applied Automotive Experience 1 ‡	1
(1)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(2)	AUTO2-147 Electrical Systems 2 ‡ ^	2
(2)	AUTO2-153 Alignment, Suspension and Steering ‡ ^	3
(2)	AUTO2-159 Automotive Brakes ‡ ^	4
(2)	AUTO2-165 Applied Automotive Experience 2 ‡	1
(2)	ECON-195 Economics ^	3
	(or) ECON-219 Personal Finance and Consumer Economics	
(2)	PSYCH-199 Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
(3)	AUTO2-148 Manual Transmissions and Drivelines ‡	2
(3)	AUTO2-155 Fuel Management 2 ‡	4
(3)	AUTO2-160 Automotive Accessories ‡	3
(3)	AUTO2-166 Applied Automotive Experience 3 ‡	1
(3)	NATSCI-112 Principles of Sustainability	3
	(or) NATSCI-169 Energy in Nature, Technology and Society	
	(or) Any 200-level NATSCI course	
(4)	AUTO2-156 Fuel Management 3 ‡	4
(4)	AUTO2-157 Engine Concepts ‡	4
(4)	AUTO2-158 Automotive Transmissions ‡	4
(4)	AUTO2-167 Applied Automotive Experience 4 ‡	1
(4)	ENG-196 Oral/Interpersonal Communication	3
	(or) Any 200-level ENG or SPEECH course	

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Automotive Technology Maintenance Light Repair technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and October

Manufacturing, Construction & Transportation
Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Baking and Pastry Arts

ASSOCIATE DEGREE | **Program Code: 10-314-1** | Downtown Milwaukee Campus

BAKING AND PASTRY ARTS
matc.edu/academics/pathways

Technical Diploma
• Baking Production, p. 120

Associate Degree
• Baking and Pastry Arts, p. 47

Learn techniques of producing artisan breads, pastries, celebration cakes, confections and showpieces. You will have the opportunity to learn firsthand how to run a successful bakery/café operation from the front and back of the house.

Career Outlook

Employment in the food preparation sector is expected to increase throughout the United States, including a growing demand for specialty products.

Program Learning Outcomes

- Demonstrate baking and pastry skills
- Apply principles of safety and sanitation in food service operations
- Apply principles of nutrition
- Analyze food service financial information
- Apply supervision skills
- Relate food service operations to sustainability

Admission Requirements

- A high school diploma or GED
- Ability to lift up to 50 pounds, and the purchase of pastry tool kit and uniform also required for this program

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC), 180 Center Place Way, St. Augustine, FL 32095; 800-624-9458 or 904-824-4468; acfchefs.org/accreditation.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**BAKING-120** Basic Baking Techniques ‡ ^	3
(1)	**BAKING-122** Baking Principles and Ingredient Functions ^	3
(1)	**CULART-100** Introduction to Culinary Arts	1
(1)	**CULART-117** Nutrition for Culinary Arts ^	1
(1)	**CULART-118** Sustainable Food Communities	1
(1)	**CULMGT-112** Food Service Sanitation ^	2
(1)	**MATH-134** Mathematical Reasoning ^ (or) Any 200-level MATH course	3
(2)	**BAKING-101** Specialty Baking and Pastry Techniques 1 ‡ ^	3
(2)	**BAKING-125** Artisan Breads ‡ ^	3
(2)	**BAKING-129** Healthy and Natural Baking ‡ ^	2
(2)	**BAKING-130** Field Experience in Baking and Pastry Arts ‡ ^	1
(2)	**CULMGT-105** Culinary Math and Cost Control ^	3
(2)	**ENG-195** Written Communication ^ (or) ENG-201 English 1 ‡	3
(3)	**BAKING-108** Hotel and Restaurant Dessert Production ‡	2
(3)	**BAKING-113** Cake Decorating, Icing and Fondant ‡	3
(3)	**BAKING-131** Baking and Classical Cakes ‡	2
(3)	**CULART-109** Garde Manger 1 ‡	1
(3)	**CULART-121** Mise en Place/Culinary Fundamentals ‡	2
(3)	**CULART-122** Stock, Soups and Sauces ‡	1
(3)	**ENG-196** Oral/Interpersonal Communication ^ (or) Any 200-level ENG or SPEECH course	3
(3)	**SOCSCI-103** Think Critically and Creatively (or) Any 200-level SOCSCI or HIST course	3
(4)	**BAKING-107** Café Operations ‡	5
(4)	**BAKING-127** Chocolate, Confections and Sugar Work ‡	3
(4)	**HOTEL-133** Supervision in Hospitality Industry	3
(4)	**PSYCH-199** Psychology of Human Relations (or) Any 200-level PSYCH course	3
	TOTAL CREDITS:	**60**

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Baking Production technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Banking and Financial Services

ASSOCIATE DEGREE | **Program Code: 10-114-3** | Downtown Milwaukee, West Allis campuses (Also offered online)

BANKING AND FINANCIAL SERVICES
matc.edu/academics/pathways

Certificate
• Financial Services Trainee, p. 194

Technical Diploma
• Financial Services, p. 144

Associate Degree
• Banking and Financial Services, p. 48

Learn accounting and financial principles used in banks, credit unions, insurance and consumer finance companies, and corporate finance departments.

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.

Program Learning Outcomes

- Create reports
- Analyze financial data
- Analyze investments
- Sell financial products and services

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ACCTG-111	Accounting 1 ^ 4
(1)	BADM-106	MS Office for Business Applications ^ 3
(1)	ENG-195	Written Communication ^ 3 (or) ENG-201 English 1 ‡
(1)	FIN-110	Principles of Banking ^ 3
(1)	MKTG-104	Selling Principles ^ 3
(2)	BADM-134	Business Organization and Management 3
(2)	FIN-120	Introduction to Money, Banking and Financial Markets ^ 3
(2)	MATH-107	College Mathematics ‡ 3 (or) Any 200-level MATH course
(2)	RBUS-102	Mathematics of Business ^ 3
(2)	SOCSCI-197	Contemporary American Society 3 (or) Any 200-level SOCSCI or HIST course
(3)	ACCTG-113	Accounting 2 ‡ 4
(3)	BADM-104	Business Statistics ‡ 3
(3)	ECON-195	Economics 3 (or) Any 200-level ECON course
(3)	ENG-197	Technical Reporting 3 (or) Any 200-level ENG or SPEECH course
(3)	FIN-170	Credit Management ^ 3
(3)	HRMGT-198	Business Ethics 3
(4)	BADM-126	Business Finance ‡ 3
(4)	FIN-122	Investment Principles ‡ ^ 3
(4)	FIN-180	Financial Statement Analysis 3
(4)	PSYCH-199	Psychology of Human Relations 3 (or) Any 200-level PSYCH course

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Financial Services technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Biomedical Electronics Technology

ASSOCIATE DEGREE | **Program Code: 10-605-6** | Downtown Milwaukee Campus

BIOMEDICAL ELECTRONICS TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
- Electronics Technician Fundamentals, p. 139

Associate Degree
- Biomedical Electronics Technology, p. 49

Through coursework and lab work focused on electrical safety, medical gas safety and the clinical application of electronics and electromechanical devices, you will prepare for a technical career in the healthcare field.

Career Outlook

Jobs are competitive in the Milwaukee area. Employment opportunities include hospitals, equipment manufacturers and independent service organizations.

Program Learning Outcomes

- Manage medical equipment and systems
- Identify the function and operation of various types of imaging equipment
- Problem-solve electronic circuits and systems
- Demonstrate competency with computers and networks used in medical equipment
- Apply principles of anatomy, physiology, and medical terminology
- Demonstrate safety precautions and practices with medical equipment

Admission Requirements

- A high school diploma or GED; and one year of high school-level algebra
- Criminal background check, 10-panel drug test, health exam, immunizations

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ELCTEC-110 DC/AC Electronics 1 ‡ ^	4
(1)	ELCTEC-130 Digital Electronics ‡ ^	3
(1)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	MATH-115 College Technical Mathematics 1 ‡ ^	5
(2)	ELCTEC-111 DC/AC Electronics 2 ‡ ^	3
(2)	ELCTEC-120 Electronic Devices ‡ ^	4
(2)	ELCTEC-186 Fabrication Techniques ‡	1
(2)	ENG-197 Technical Reporting	3
	(or) Any 200-level ENG or SPEECH course	
(2)	MATH-116 College Technical Mathematics 2 ‡	4
(2)	NATSCI-189 Basic Anatomy	3
(3)	ELCTEC-134 Biomedical Instrumentation ‡	4
(3)	ELCTEC-137 Biomedical Electronics Technician Practicum 1 ‡	2
(3)	ELCTEC-140 Microprocessors ‡ ^	3
(3)	ELCTEC-150 Data Communications and Networking ‡	3
(3)	SOCSCI-197 Contemporary American Society	3
	(or) Any 200-level HIST or SOCSCI course	
(4)	ELCTEC-133 Medical Imaging Equipment ‡	4
(4)	ELCTEC-138 Biomedical Electronics Technician Practicum 2 ‡	2
(4)	ELCTEC-139 Advanced Biomedical Electronics ‡	3
(4)	ELCTEC-176 Computer Networks ‡	3
(4)	PSYCH-199 Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Electronics Technician Fundamentals technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Bio-Medical Electronics.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Business Analyst

ASSOCIATE DEGREE | **Program Code: 10-102-1** | Downtown Milwaukee Campus

Learn techniques to gather and analyze information and business requirements, integrating best practices and relevant technologies. As a graduate, you will be prepared to function as a liaison with an organization's stakeholders, such as IT and subject matter experts, in order to understand policies, structure and operation.

Career Outlook

Opportunities exist within a variety of industries, including healthcare, manufacturing, insurance and finance.

Program Learning Outcomes

- Perform elicitation, validation, and analysis of requirements to meet a business need
- Build relationships with stakeholders
- Demonstrate leadership throughout business analysis efforts
- Demonstrate professional communication in a business environment

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications 3
(1)	BADM-134	Business Organization and Management....3
(1)	BNLST-121	Business Analyst Planning and Monitoring....3
(1)	BNLST-122	Business Analyst Essentials....3
(1)	MATH-123	Math With Business Applications ‡....3 (or) Any 200-level MATH course
(2)	BADM-104	Business Statistics ‡....3
(2)	BNLST-123	Requirements of Life Cycle Management....3
(2)	BNLST-124	Elicitation Techniques....3
(2)	ENG-195	Written Communication....3 (or) ENG-201 English 1 ‡
(2)	MGTDEV-189	Team Building and Problem-Solving ..3
(3)	BNLST-127	Requirements Analysis and Design....3
(3)	ENG-197	Technical Reporting....3 (or) Any 200-level ENG or SPEECH course
(3)	ITDEV-149	Data Reporting 3
(3)	MGTDEV-190	Leadership Development....3
(3)	PSYCH-199	Psychology of Human Relations ....3 (or) Any 200-level PSYCH course
(4)	BNLST-135	Business Analyst Strategy Analysis....3
(4)	BNLST-136	Business Analyst Solution Evaluation...3
(4)	BNLST-137	Business Analyst Internship ‡....1
(4)	BNLST-138	Business Analyst Capstone 3
(4)	MGTDEV-188	Project Management....3
(4)	SOCSCI-103	Think Critically and Creatively ....3 (or) Any 200-level SOCSCI course

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management

Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Business Management

ASSOCIATE DEGREE | **Program Code: 10-102-3** | All campuses (Also offered online)

BUSINESS MANAGEMENT
matc.edu/academics/pathways

Certificate
• Business Management Trainee, p. 190

Technical Diploma
• Business Management, p. 124

Associate Degree
• Business Management, p. 51

Attain a strong foundation in a range of areas including supervision, business law, office technologies, human resources and marketing. Students have the opportunity to select courses with a career-ready emphasis or with a four-year college/university transfer emphasis; the career-ready courses may be taken in class or entirely online.

Career Outlook

Opportunities exist within different types of firms, as well as operating your own business.

Program Learning Outcomes

- 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 Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications ^ .. 3
(1)	BADM-110	Business Communications With Technology ..... 3 (or) ENG-208 Technical Communications ‡ (or) ENG-202 English 2 ‡*
(1)	BADM-134	Business Organization and Management ^ 3
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡*
(2)	ACCTG-110	Financial Accounting ^ ..... 3 (or) ACCTG-111 Accounting 1
(2)	BADM-192	Risk Management and Insurance ^ 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course*
(2)	MKTG-102	Marketing Principles 3
(3)	BADM-104	Business Statistics ‡ 3
(3)	BADM-145	Small Business Management ‡ ^ ..... 3 (or) LOGMGT-146 Operations Management
(3)	BADM-165	Legal Environment of Business ^ 3
(3)	ECON-195	Economics ..... 3 (or) ECON-202 Principles of Microeconomics (or) any 200-level ECON course*
(3)	MATH-107	College Mathematics ‡ ^ ..... 3 (or) Any 200-level MATH course*
(3)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI course*
(4)	BADM-120	Business Analysis ‡ ^ 3
(4)	BADM-155	Management Principles ‡ 3
(4)	ELECTIVES	(Six 100-level credits needed) 6
(4)	MATH-123	Math With Business Applications ‡ ..... 3 (or) Any 200-level MATH course*
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course*

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Business Management technical diploma.

** Students seeking transfer to a four-year college/university should take 200-level courses.*

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Cardiovascular Technology – Echocardiography

ASSOCIATE DEGREE | **Program Code: 10-521-2** | Downtown Milwaukee Campus

CARDIOVASCULAR TECHNOLOGIST
matc.edu/academics/pathways

Certificate
- EKG Technician, p. 192

Associate Degree
- Cardiovascular Technology – Echocardiography, p. 52
- Cardiovascular Technology – Invasive, p. 53

Learn to perform echocardiograms, a widely used diagnostic test for heart disease. Echocardiography technologists perform the tests in hospitals and outpatient facilities, utilizing ultrasound equipment to gather data about the cardiac chambers, valves and vessels leading to and from the heart. Completing this program fulfills prerequisites to take the Registered Cardiac Sonographer (CCI) or Registered Diagnostic Cardiac Sonographer (ARDMS) exam.

Program Learning Outcomes

- Explain diagnostic procedures and provide support to patients
- Work independently to perform echocardiographic scans
- Demonstrate professionalism and exhibit patient care skills
- Ability to perform diagnostic imaging including transthoracic echocardiogram, transesophageal echocardiogram and a stress echocardiogram

Admission Requirements

High school diploma or GED, and one year of high school-level biology, chemistry and algebra required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater FL 33763; 727-210-2350; caahep.org/Students/Program-Info/Cardiovascular-Technology.aspx.
Accreditation is based upon a recommendation by the Joint Review Committee (JRC-CVT).

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	NATSCI-197	Microbiology * ^ 4
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(1)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) Any 200-level SOSCI course
(2)	CVTECH-102	Introduction to CVT ‡ ^ 2
(2)	CVTECH-110	EKG Analysis ‡ ^ 2
(2)	CVTECH-115	Essentials of Cardiac Care 1 ‡ ^ 4
(2)	CVTECH-118	Echocardiography Basics ‡ 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	CVTECH-121	Echo Clinical Procedures ‡ 2
(3)	CVTECH-140	Echo Instrumentation ‡ 4
(3)	CVTECH-142	Echo Case Review ‡ 3
(3)	CVTECH-144	Advanced Echo Practicum ‡ 3
(3)	CVTECH-145	Echocardiography Fundamentals ‡ 4
(4)	CVTECH-143	Ultrasound Principles and Physics ‡ ... 3
(4)	CVTECH-149	Echocardiography Clinical Experience 1 ‡ 2
(4)	CVTECH-195	Echocardiography Clinical Seminar ‡ .. 2
(4)	CVTECH-196	Echocardiography Clinical Experience 2 ‡ 4
(4)	CVTECH-197	Echocardiography Clinical Experience 3 ‡ 4
(4)	ELECTIVES	(Two 100-level credits) 2

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the EKG Technician certificate.

** Cardiovascular Technology students are not required to take NATSCI-177/179 or 201/202 as prerequisites to NATSCI-197; go to Selfservice.matc.edu and submit a waiver indicating you are a CVT student.*

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Cardiovascular Technology – Invasive

ASSOCIATE DEGREE | **Program Code: 10-521-1** | Downtown Milwaukee Campus

CARDIOVASCULAR TECHNOLOGIST
matc.edu/academics/pathways

Certificate
- EKG Technician, p. 192

Associate Degree
- Cardiovascular Technology – Echocardiography, p. 52
- Cardiovascular Technology – Invasive, p. 53

Prepare for a rewarding career as a cardiac catheterization technologist, assisting cardiologists in cardiac catheterization labs with the care of heart patients and performing diagnostic and interventional procedures related to stent placements, pacemaker implants, and other heart or blood vessel conditions. Completing this program fulfills prerequisites to take the Registered Cardiovascular Invasive Specialist (RCIS) exam given by Cardiac Credentialing International (CCI).

Program Learning Outcomes

- Explain diagnostic procedures and provide support to patients
- Assist the invasive cardiologist in the diagnosis and corrective intervention of cardiac procedures; anticipate the sequence of events in cath lab procedures
- Apply sterile technique in preparing and handling of instruments
- Explain the heart disease process
- Prepare the cath lab by aseptic technique

Admission Requirements

High school diploma or GED, and one year of high school-level biology, chemistry and algebra required. This program admits students through a petition selection process. See the program's webpage at matc.edu.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater FL 33763; 727-210-2350; caahep.org/Students/Program-Info/Cardiovascular-Technology.aspx.
Accreditation is based upon a recommendation by the Joint Review Committee (JRC-CVT).

COURSES		Credits
(1)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	NATSCI-197 Microbiology * ^	4
(1)	PSYCH-199 Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
(1)	SOCSCI-172 Introduction to Diversity Studies	3
	(or) Any 200-level SOSCI course	
(2)	CVTECH-102 Introduction to CVT ‡ ^	2
(2)	CVTECH-110 EKG Analysis ‡ ^	2
(2)	CVTECH-115 Essentials of Cardiac Care 1 ‡ ^	4
(2)	CVTECH-117 Invasive CVT Fundamentals 1 ‡	4
(2)	ENG-197 Technical Reporting	3
	(or) Any 200-level ENG or SPEECH course	
(2)	CVTECH-120 CVT Clinical Procedures ‡	2
(3)	CVTECH-132 Physics of Medicine ‡	3
(3)	CVTECH-134 Hemodynamics ‡	3
(3)	CVTECH-135 Essentials of Cardiac Care 2 ‡	4
(3)	CVTECH-137 Invasive CVT Fundamentals 2 ‡	4
(4)	CVTECH-133 Cardiovascular Agents ‡	3
(4)	CVTECH-139 Invasive CVT Clinical 1 ‡	2
(4)	CVTECH-185 Invasive CVT Clinical Seminar ‡	2
(4)	CVTECH-186 Invasive CVT Clinical Experience 2 ‡	4
(4)	CVTECH-187 Invasive CVT Clinical Experience 3 ‡	4
(4)	ELECTIVES (Two 100-level credits needed)	2

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

** Cardiovascular Technology students are not required to take NATSCI-177/179 or 201/202 as prerequisites to NATSCI-197; go to Selfservice.matc.edu and submit a waiver indicating you are a CVT student.*

^ Counts toward earning the EKG Technician certificate.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Chemical Technician

ASSOCIATE DEGREE | **Program Code: 10-603-1** | Downtown Milwaukee Campus

CHEMICAL TECHNICIAN
matc.edu/academics/pathways

Technical Diploma
• Chemical Processing Technician, p. 127

Associate Degree
• Chemical Technician, p. 54

Chemical technicians assure the quality of the products made in the manufacturing, chemical and allied industries. This program trains you to perform as an analyst or chemist's assistant in various industries.

Career Outlook

Employment prospects for program graduates are strong, locally and nationally. Most graduates work in labs, in research and development, or in technical assistance.

Program Learning Outcomes

- Apply knowledge of chemical apparatus, equipment and procedures
- Work precisely in solution making
- Communicate and receive precise chemical data and procedures
- Practice laboratory safety procedures
- Use software for instrument operation and data handling

Admission Requirements

- A high school diploma or GED
- One year of high school-level chemistry, and advanced algebra or one semester of MATH-116 College Technical Mathematics 2

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	**CHEMT-101**	Chemical Laboratory/Process Safety ‡ ^	2
(1)	**CHEMT-103**	Introduction to Chemical Technology ^	2
(1)	**CHEMT-111**	General Chemistry 1 ‡ ^	5
(1)	**ENG-195**	Written Communication ^ (or) ENG-201 English 1 ‡	3
(2)	**CHEMT-105**	Introduction to Instrumental Methods ^	3
(2)	**CHEMT-112**	General Chemistry 2 ‡ ^	5
(2)	**ENG-197**	Technical Reporting ^ (or) Any 200-level ENG or SPEECH course	3
(2)	**NATSCI-139**	Survey of Physics ^	3
(3)	**CHEMT-107**	Industrial Methods of Analysis ‡	2
(3)	**CHEMT-116**	Instrumental Analysis ‡	5
(3)	**CHEMT-117**	Organic Chemistry 1 ‡	3
(3)	**CHEMT-119**	Organic Chemistry Laboratory 1 ‡	2
(3)	**ELECTIVES**	(Two credits needed)	2
(3)	**PSYCH-199**	Psychology of Human Relations	3
(4)	**CHEMT-109**	Chemical Processes ‡	3
(4)	**CHEMT-115**	Quantitative Analysis ‡	5
(4)	**CHEMT-118**	Organic Chemistry 2 ‡	3
(4)	**ELECTIVES**	(Three credits needed)	3
(4)	**SOCSCI-197**	Contemporary American Society	3

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Chemical Processing Technician technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

Civil Engineering Technology

ASSOCIATE DEGREE | **Program Code: 10-607-1** | Downtown Milwaukee Campus

CIVIL ENGINEERING
matc.edu/academics/pathways

Technical Diploma
• Surveying and Mapping, p. 177

Associate Degree
• Civil Engineering Technology, p. 55

Assist civil engineers in planning, designing, scheduling, estimating, surveying and inspecting construction projects. Also, specific elective surveying courses provide an option for a land surveying career.

Career Outlook

Civil engineering technicians and surveying technicians are needed in all phases of project development.

Program Learning Outcomes

- Utilize CAD and sketching techniques to produce engineering documents
- Perform design and routine testing procedures related to construction materials
- Utilize land surveying instruments to collect data necessary to produce topographic maps, establish horizontal and vertical control, and to layout civil engineering projects
- Operate computer software and hardware to solve technical problems
- Apply elements of design to roads, subdivision layout, storm and sanitary sewer systems

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved through the Land Surveyor Section of the Wisconsin Examining Board of Architects, Landscape Architects, Professional Engineers, Designers and Professional Land Surveyors, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112; dsps.wi.gov/pages/BoardsCouncils/AE/Default.aspx.

Start Date: August

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	CIVIL-101 Civil Engineering Drawing ^	2
(1)	CIVIL-102 Introduction to AutoCAD ^	2
(1)	CIVIL-105 Computer Applications ^	2
(1)	CIVIL-135 Public Works Engineering and Estimating	3
(1)	CIVIL-155 Surveying 1 ^	2
(1)	MATH-115 College Technical Mathematics 1 ‡ ^	5
(2)	CIVIL-106 Intermediate AutoCAD ‡ ^	2
(2)	CIVIL-147 Soils and Materials Testing ‡	3
(2)	CIVIL-156 Surveying 2 ‡ ^	2
(2)	ENG-195 Written Communication ^ (or) ENG-201 English 1 ‡	3
(2)	MATH-116 College Technical Mathematics 2 ‡	4
(3)	CIVIL-110 Introduction to Civil 3D ^	2
(3)	CIVIL-141 Statics and Strength of Materials ‡	4
(3)	CIVIL-157 Route and Highway Surveying ‡ ^	3
(3)	ELECTIVE (Three credits needed)	3
(3)	ENG-197 Technical Reporting	3
(3)	PSYCH-199 Psychology of Human Relations	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
(4)	ELECTIVE (Two credits needed)	2
(4)	SOCSCI-197 Contemporary American Society	3
		TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Surveying and Mapping technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Computer Electronics Technology

ASSOCIATE DEGREE | **Program Code: 10-605-3** | Downtown Milwaukee Campus

COMPUTER ELECTRONICS TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
• Electronics Technician Fundamentals, p. 139

Associate Degree
• Computer Electronics Technology, p. 56

Learn to install, use, maintain, troubleshoot and repair computer and network hardware and software. The coursework provides a blend of hands-on learning experiences using the most current equipment.

Career Outlook

Extensive opportunities are available for computer electronics technicians with skills to perform installation, configuration, upgrading and maintenance of computer and network systems, and who can develop technical software.

Program Learning Outcomes

- Apply electronic theory to practice
- Operate test equipment
- Build electronic circuits and systems
- Evaluate the operation of electronic circuits or systems
- Communicate technical information

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ELCTEC-110	DC/AC Electronics 1 ‡ ^ 4
(1)	ELCTEC-130	Digital Electronics ‡ ^ 3
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	MATH-115	College Technical Mathematics 1 ‡ ^ .. 5
(2)	ELCTEC-111	DC/AC Electronics 2 ‡ ^ 3
(2)	ELCTEC-120	Electronic Devices ‡ ^ 4
(2)	ELCTEC-140	Microprocessors ‡ ^ 3
(2)	ELCTEC-186	Fabrication Techniques ‡ 1
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	MATH-116	College Technical Mathematics 2 ‡ 4
(3)	ELCTEC-150	Data Communications and Networking ‡ 3
(3)	ELCTEC-173	Computing With C ‡ 3
(3)	ELCTEC-174	Hardware Systems ‡ 3
(3)	ELCTEC-178	Software Systems ‡ 3
(3)	NATSCI-139	Survey of Physics ..... 3 (or) NATSCI-221 College Physics 1 ‡
(4)	ELCTEC-172	Input/Output Programming ‡ 3
(4)	ELCTEC-176	Computer Networks ‡ 3
(4)	ELCTEC-179	Advanced Computer Systems ‡ 3
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) PSYCH-231 Introductory Psychology
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) SOCSCI-203 Introduction to Sociology

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Electronics Technician Fundamentals technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Electronics – Computer.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Computer Simulation and Gaming

ASSOCIATE DEGREE | **Program Code: 10-153-1** | Downtown Milwaukee Campus

COMPUTER SIMULATION AND GAMING
matc.edu/academics/pathways

Technical Diploma
• Unity Developer, p. 183

Associate Degree
• Computer Simulation and Gaming, p. 57

Prepare for a career in animation and gaming, plus attain skills transferable to other industries such as computer programming, multimedia development and film production. Students have opportunities to focus on game design or programming.

Career Outlook

Testers, designers and producers are in demand as the use of this technology increases rapidly. New games are continually in production, and computer simulations are used as educational and training tools in schools and businesses.

Program Learning Outcomes

- Create an animated asset for a product
- Build assets suitable for export and/or rendering to target platforms
- Apply fundamental artistic concepts to the 3D environment
- Implement project management skills

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in OS, word processing and the internet
- Completion of CSG-100 Pre-Entry Evaluation

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	CSG-110	Introduction to Computer Simulation and Gaming ^ 3
(1)	CSG-114	Introduction to Game Development/ Programming ^ 3 (or) CSG-131 Introduction to Game Design
(1)	CSG-115	CSG Production ^ 3
(1)	CSG-117	Game Logic and Problem-Solving ^ 3
(1)	ENG-195	Written Communication 3 (or) ENG-201 English 1 ‡
(2)	CSG-118	Game Engine Scripting ‡ ^ 3
(2)	CSG-120	Interactive Display Production 1 ^ 1
(2)	CSG-127	Agile Project Management 3
(2)	CSG-128	Intermediate Game Development Programming ‡ ^ 3 (or) CSG-133 Intermediate Game Design ‡
(2)	CSG-129	CSG Architecture ‡ 2
(2)	CSG-130	CSG Design ‡ 3
(2)	ENG-197	Technical Reporting 3 (or) Any 200-level ENG course
(3)	CSG-179	CSG API Programming ‡ ^ 4
(3)	CSG-181	CSG Collaborative Lab ‡ 4
(3)	CSG-185	Data Structures for Game Developers ‡ 3 (or) CSG-138 Advanced Game Design ‡
(3)	MATH-107	College Mathematics ‡ ^ 3 (or) Any 200-level MATH course
(3)	PSYCH-199	Psychology of Human Relations 3 (or) Any 200-level PSYCH course
(4)	ANIM-160	Animation Portfolio ‡ 2
(4)	CSG-119	Designing Interactive Displays ‡ ^ 3
(4)	CSG-132	Artificial Intelligence ‡ 3
(4)	CSG-180	Multimedia Collaborative Lab ‡ 3
(4)	SOCSCI-197	Contemporary American Society 3 (or) Any 200-level SOCSCI course

TOTAL CREDITS: 64

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the Unity Developer technical diploma.
Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Criminal Justice Studies

ASSOCIATE DEGREE | **Program Code: 10-504-5** | Downtown Milwaukee, Mequon and Oak Creek campuses

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

This program prepares you for employment in law enforcement at the local, state and federal levels, as well as in the field of private security. Successful completion of this program may qualify you to enroll in basic recruit training that leads to certification in Wisconsin.

Career Outlook

Currently trained security professionals are in demand.

Program Learning Outcomes

- Examine the components of and interrelationships in the criminal justice system
- Analyze situational responses
- Apply communication skills as a criminal justice professional
- Conduct investigations
- Adhere to the professional code of ethics for a criminal justice practitioner
- Maintain personal wellness

Admission Requirements

- Age 17 or older
- Official high school or GED/HSED transcript

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved by the State of Wisconsin – Department of Justice Training & Standards Bureau,17 West Main Street, P.O. Box 7857, Madison, WI 53707-7857; 608-266-8800; www.doj.state.wi.us/dles/training-and-standards-bureau.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195**	Written Communication **3**
		(or) ENG-201 English 1 ‡
(1)	**POLICE-161**	Ethics in Law Enforcement **3**
(1)	**POLICE-900**	Introduction to Criminal Justice **3**
(1)	**POLICE-901**	Constitutional Law **3**
(1)	**PSYCH-199**	Psychology of Human Relations **3**
		(or) Any 200-level PSYCH course
(2)	**ENG-196**	Oral/Personal Communication **3**
		(or) Any 200-level ENG or SPEECH course
(2)	**MATH-107**	College Mathematics ‡ **3**
		(or) Any 200-level MATH course
(2)	**POLICE-902**	Criminal Law ‡ **3**
(2)	**POLICE-907**	Community Policing Strategies **3**
(2)	**POLICE-908**	Traffic Theory **3**
(3)	**ECON-195**	Economics **3**
		(or) Any 200-level ECON course
(3)	**POLICE-160**	Contemporary Legal Issues **3**
(3)	**POLICE-162**	Sensitive Crimes **3**
(3)	**POLICE-906**	Criminal Investigation Theory ‡ **3**
(3)	**SOCSCI-197**	Contemporary American Society **3**
		(or) Any 200-level SOCSCI course
(4)	**ELECTIVES**	(Three credits needed) **3**
(4)	**POLICE-903**	Professional Communications ‡ **3**
(4)	**POLICE-904**	Juvenile Law ‡ **3**
(4)	**POLICE-905**	Report Writing ‡ **3**
(4)	**SOCSCI-172**	Introduction to Diversity Studies **3**
		(or) Any 200-level SOCSCI course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Culinary Arts

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

CULINARY ARTS
matc.edu/academics/pathways

Technical Diploma
• Food Service Assistant, p. 145

Associate Degree
• Culinary Arts, p. 59

This program fuses the art and science of cooking with an introduction to business management. You will learn how to run a food-service operation by participating in the on-campus Cuisine restaurant, International Foods lunch service, and business and industry kitchens.

Career Outlook

Graduates are highly employable as cooks and management trainees.

Program Learning Outcomes

- Apply principles of safety and sanitation in food service operations
- Apply principles of nutrition
- Demonstrate culinary skills

(See full description at matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the Food Service Assistant technical diploma.
Curriculum requirements for this Associate in Applied Science degree program are subject to change.

This program is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC), 180 Center Place Way, St. Augustine, FL 32095; 800-624-9458 or 904-824-4468; acfchefs.org/accreditation.

COURSES		Credits
(1)	**CULART-100** Introduction to Food Service/ Hospitality Industry ‡	1
(1)	**CULART-116** Mise en Place/Culinary Fundamentals ‡ ^	2
(1)	**CULART-117** Nutrition for Culinary Arts	1
(1)	**CULART-118** Sustainable Food Communities	1
(1)	**CULMGT-112** Food Service Sanitation ^	2
(1)	**MATH-134** Mathematical Reasoning (or) Any 200-level MATH course	3
(1)	**SOCSCI-103** Think Critically and Creatively (or) Any 200-level SOCSCI or HIST course	3
(2)	**CULART-107** Field Experience in Food Service/ Hospitality ‡	1
(2)	**CULART-115** Culinary Arts Practicum ‡	2
(2)	**CULART-122** Stocks, Soups and Sauces ‡	1
(2)	**CULART-124** Meat Identification and Fabrications ‡	1
(2)	**CULART-126** Seafood/Shellfish Cookery ‡	1
(2)	**CULART-128** Vegetables, Starches and Grains ‡ ^	1
(2)	**CULMGT-101** Menu Planning and Design	2
(2)	**CULMGT-105** Culinary Math and Cost Control	3
(2)	**ENG-195** Written Communication (or) ENG-201 English 1 ‡	3
(3)	**BAKING-120** Basic Baking Techniques ‡	3
(3)	**CULART-114** Business/Industry Food Service/ Catering 1‡	4
(3)	**CULART-134** American Regional Cuisine ‡	1
(3)	**CULART-135** European and Mediterranean Cuisine ‡	1
(3)	**CULART-136** Asian Cuisine ‡	1
(3)	**CULART-137** South and Central American Cuisine ‡	1
(3)	**CULMGT-102** Food and Beverage Procurement ‡	2
(3)	**ENG-196** Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(4)	**CULART-105** Dining Room Service ‡	2
(4)	**CULART-106** Contemporary Restaurant Cooking ‡	4
(4)	**CULART-109** Garde Manger 1 ‡	1
(4)	**CULART-111** Garde Manger 2 ‡	1
(4)	**CULART-138** Restaurant Operations ‡	2
(4)	**HOTEL-133** Supervision in the Hospitality Industry	3
(4)	**PSYCH-199** Psychology of Human Relations (or) Any 200-level PSYCH course	3

TOTAL CREDITS: 60

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Dental Hygiene

ASSOCIATE DEGREE | **Program Code: 10-508-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Help patients maintain their oral health as a dental hygienist. Working under a dentist's supervision, dental hygienists perform such duties as teeth cleaning, fluoride treatments, X-ray processing and dental health counseling. You will gain clinical experience in MATC's dental hygiene clinic and at external sites. Graduates are eligible to complete the National Board of Dental Hygiene examination, and state or regional practical examinations.

Career Outlook

Employment prospects for licensed dental hygienists are good. Positions may be found in private dental offices, nursing homes and school settings.

Program Learning Outcomes

- Model dental hygiene professional code of ethics
- Counsel clients/patients to reduce health risks
- Provide community oral health services in a variety of settings
- Manage infection and hazard control

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school-level biology and chemistry required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by The Commission on Dental Accreditation. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, IL 60611; 800-621-8099 or 312-440-2718; ada.org/coda.

Start Dates: August and January

Healthcare Services

Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**DENHYG-101** Dental Health Safety ‡	1
(1)	**DENHYG-102** Oral Anatomy, Embryology and Histology ‡	4
(1)	**DENHYG-103** Dental Radiography ‡	2
(1)	**DENHYG-105** Dental Hygiene Process 1 ‡	4
(1)	**ENG-195** Written Communication (or) ENG-201 English 1 ‡	3
(1)	**NATSCI-177** General Anatomy and Physiology ‡ (or) NATSCI-201 Anatomy & Physiology 1 ‡	4
(2)	**DENHYG-106** Dental Hygiene Process 2 ‡	4
(2)	**DENHYG-107** Dental Hygiene Ethics and Professionalism ‡	1
(2)	**DENHYG-108** Periodontology ‡	3
(2)	**DENHYG-109** Cariology ‡	1
(2)	**DENHYG-110** Nutrition and Dental Health ‡	2
(2)	**DENHYG-111** General and Oral Pathology ‡	3
(2)	**ENG-196** Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(2)	**NATSCI-186** Introductory Biochemistry ‡ (or) NATSCI-207 General Chemistry ‡ and NATSCI-208 Survey of Biochemistry ‡	4
(2)	**NATSCI-197** Microbiology ‡	4
(3)	**DENHYG-112** Dental Hygiene Process 3 ‡	5
(3)	**DENHYG-113** Dental Materials ‡	2
(3)	**DENHYG-114** Dental Pharmacology ‡	2
(3)	**DENHYG-115** Community Dental Health ‡	2
(3)	**DENHYG-118** Dental Anxiety and Pain Management ‡	2
(3)	**PSYCH-199** Psychology of Human Relations (or) Any 200-level PSYCH course	3
(4)	**DENHYG-117** Dental Hygiene Process 4 ‡	4
(4)	**ELECTIVES** (One credit needed)	1
(4)	**SOCSCI-172** Introduction to Diversity Studies (or) Any 200-level HIST or SOCSCI course	3

TOTAL CREDITS: 67

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Early Childhood Education

ASSOCIATE DEGREE | **Program Code: 10-307-1** | Downtown Milwaukee, West Allis campuses

EARLY CHILDHOOD EDUCATION
matc.edu/academics/pathways

Certificate
• Preschool, p. 198

Technical Diploma
• Child Care Services, p. 128

Associate Degree
• Early Childhood Education, p. 61

Pursue a career in child care or at exceptional education settings for young children and have a positive impact on a child's life. 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 child care centers, family child care, or working with exceptional-needs children.

Program Learning Outcomes

- Apply child development theory to practice
- Cultivate relationships with children, family, and the community
- Assess child growth and development
- Use best practices in teaching and learning
- Demonstrate professionalism
- Integrate health, safety, and nutrition practices

Admission Requirements

- A high school diploma or GED
- Documentation of compliance with Wisconsin's Caregiver Law; proper immunizations and good health as evidenced by a medical examination; practicum placement is contingent upon results of criminal background check

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the National Association for the Education of Young Children (NAEYC), 1313 L Street NW, Suite 500, Washington, DC 20005; 800-424-2460 or 202-232-8777; naeyc.org/accreditation.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**CHILDD-148** ECE: Foundations of Early Childhood Education ^	3
(1)	**CHILDD-151** ECE: Infant and Toddler Development ^	3
(1)	**CHILDD-167** ECE: Health, Safety and Nutrition ^	3
(1)	**CHILDD-174** ECE: Introductory Practicum ^	3
(1)	**ENG-195** Written Communication ^ (or) ENG-201 English 1 ‡	3
(2)	**CHILDD-108** ECE: Early Language and Literacy ^	3
(2)	**CHILDD-177** ECE: Intermediate Practicum ‡	3
(2)	**CHILDD-179** ECE: Child Development ^	3
(2)	**CHILDD-195** ECE: Family and Community Relationships ^	3
(2)	**NATSCI-112** Principles of Sustainability (or) NATSCI-233 Environmental Science	3
(3)	**CHILDD-110** ECE: Social Studies, Art and Music	3
(3)	**CHILDD-175** ECE: Preschool Practicum ‡	3
(3)	**CHILDD-188** ECE: Guiding Child Behavior ^	3
(3)	**ENG-196** Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(3)	**PSYCH-188** Developmental Psychology (or) PSYCH-238 Lifespan Psychology	3
(4)	**CHILDD-112** ECE: STEM	3
(4)	**CHILDD-187** ECE: Children With Differing Abilities	3
(4)	**CHILDD-199** ECE: Advanced Practicum ‡	3
(4)	**ELECTIVES** (Three credits needed)	3
(4)	**SOCSCI-172** Introduction to Diversity Studies (or) SOCSCI-217 Valuing Diversity	3

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Child Care Services technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Electronic Engineering Technology

ASSOCIATE DEGREE | **Program Code: 10-605-7** | West Allis Campus

ELECTRONIC ENGINEERING TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
• Electronics Technician Fundamentals, p. 139

Associate Degree
• Electronic Engineering Technology, p. 62

Gain the expertise for professional testing/repair positions in the electronics field. If you are interested in continuing your education to pursue a Bachelor of Science Electrical Engineering degree at Milwaukee School of Engineering (MSOE), select the MSOE-BSEE Transfer courses.

Career Outlook

Technicians assist engineers and producers of electronic equipment and systems, and are part of a fast-growing career area.

Program Learning Outcomes

- Apply electronic theory to practice
- Operate test equipment
- Build electronic circuits and systems
- Evaluate the operation of electronic circuits or systems
- Communicate technical information

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

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Electronics Technician Fundamentals technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Electronic Systems Technician.

Start Dates: August and January

STEM
Milwaukee Area **Technical College**

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

JOB-READY COURSES		Credits
(1) **ELCTEC-110**	DC/AC Electronics 1 ‡ ^	4
(1) **ELCTEC-130**	Digital Electronics ‡ ^	3
(1) **ENG-195**	Written Communication (or) ENG-201 ‡	3
(1) **MATH-115**	College Technical Mathematics 1 ‡ ^ (or) MATH-230 ‡ (or) MATH-231 ‡	5
(1) **PSYCH-199**	Psychology of Human Relations (or) PSYCH-231	3
(2) **ELCTEC-111**	DC/AC Electronics 2 ‡ ^	3
(2) **ELCTEC-120**	Electronic Devices ‡ ^	4
(2) **ELCTEC-131**	Advanced Digital Electronics ‡ (or) ELCTEC-198 ‡	3
(2) **ELCTEC-140**	Microprocessors ‡ ^	3
(2) **MATH-116**	College Technical Mathematics 2 ‡ (or) MATH-231 ‡ (or) MATH-232 ‡	4
(3) **ELCTEC-121**	Electronic Devices Advanced ‡	3
(3) **ELCTEC-150**	Data Communications and Networking ‡	3
(3) **ELCTEC-196**	PLC Systems Basic ‡	3
(3) **ENG-197**	Technical Reporting (or) ENG-208 ‡	3
(3) **NATSCI-139**	Survey of Physics (or) NATSCI-221 ‡	3
(4) **ELCTEC-141**	Microcontrollers ‡ (or) ELCTEC-197 ‡	3
(4) **ELCTEC-176**	Computer Networks ‡	3
(4) **ELCTEC-195**	Motors and Controls ‡	4
(4) **SOCSCI-197**	Contemporary American Society (or) SOCSCI-203	3
	TOTAL CREDITS:	**63**

MSOE-BSEE TRANSFER* COURSES		Credits
(1) **ECON-195**	Economics (or) ECON-201 (or) ECON-202	3
(1) **ELCTEC-110**	DC/AC Electronics 1 ‡ ^ (or) ELCTEC-115 ‡	4
(1) **ELCTEC-130**	Digital Electronics ‡ ^ (or) ELCTEC-117 ‡	3
(1) **ENG-201**	English 1 ‡	3
(1) **PSYCH-231**	Introductory Psychology (or) PSYCH-199	3
(2) **ELCTEC-111**	DC/AC Electronics 2 ‡ ^ (or) ELCTEC-116 ‡	3
(2) **ELCTEC-120**	Electronic Devices ‡ ^ (or) ELCTEC-118 ‡	4
(2) **ELCTEC-140**	Microprocessors ‡ ^ (or) ELCTEC-119 ‡	3
(2) **NATSCI-221**	College Physics 1 ‡ (or) NATSCI-274 ‡	4
(2) **SOCSCI-103**	Introduction to Sociology	3
(3) **ELCTEC-112**	DC/AC Electronics 3 ‡	3
(3) **ELCTEC-121**	Electronic Devices Advanced ‡	3
(3) **ELCTEC-195**	Motors and Controls ‡	4
(3) **ELCTEC-196**	PLC Systems Basic ‡	3
(3) **ENG-208**	Technical Communications ‡	3
(3) **MATH-231**	Analytic Geometry and Calculus 1 ‡	5
(4) **ELCTEC-124**	Electronic Circuit Analysis ‡	3
(4) **ELCTEC-141**	Microcontrollers ‡	3
(4) **ELCTEC-150**	Data Communications and Networking ‡	3
(4) **ELECTIVES**	(Five credits needed)	5
(4) **MATH-232**	Analytic Geometry and Calculus 2 ‡	5

***73 CREDITS for MSOE-BSEE TRANSFER PROGRAM**

Electronic Technology – Automation

ASSOCIATE DEGREE | **Program Code: 10-605-1** | Downtown Milwaukee Campus

ELECTRONIC TECHNOLOGY – AUTOMATION
matc.edu/academics/pathways

Technical Diploma
• Electronics Technician Fundamentals, p. 139

Associate Degree
• Electronic Technology – Automation, p. 63

This program features industry-relevant hands-on labs and is designed to prepare students for a variety of occupations in the field of electronics.

Career Outlook

Electronic technology is a rapidly changing field, which creates great opportunities. Skills acquired from this program provide a strong foundation to keep pace with the technology.

Program Learning Outcomes

- Apply electronic theory to practice
- Operate test equipment
- Build electronic circuits and systems
- Evaluate the operation of electronic circuits or systems
- Communicate technical information

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

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ELCTEC-110 DC/AC Electronics 1 ‡ ^	4
(1)	ELCTEC-130 Digital Electronics ‡ ^	3
(1)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	MATH-115 College Technical Mathematics 1 ‡ ^	5
(2)	ELCTEC-111 DC/AC Electronics 2 ‡ ^	3
(2)	ELCTEC-120 Electronic Devices ‡ ^	4
(2)	ELCTEC-140 Microprocessors ‡ ^	3
(2)	ELCTEC-186 Fabrication Techniques ‡	1
(2)	ENG-197 Technical Reporting	3
	(or) Any 200-level ENG or SPEECH course	
(2)	MATH-116 College Technical Mathematics 2 ‡	4
(3)	ELCTEC-150 Data Communications and Networking ‡	3
(3)	ELCTEC-173 Computing With C ‡	3
(3)	ELCTEC-195 Motor Controls ‡	4
(3)	ELCTEC-196 PLC Systems Basic ‡	3
(3)	NATSCI-139 Survey of Physics	3
	(or) NATSCI-221 College Physics 1 ‡	
(4)	ELCTEC-192 Fluid Power ‡	2
(4)	ELCTEC-198 PLC Systems Advanced ‡	3
(4)	ELCTEC-199 Automated Systems ‡	3
(4)	PSYCH-199 Psychology of Human Relations	3
	(or) PSYCH-231 Introductory Psychology	
(4)	SOCSCI-197 Contemporary American Society	3
	(or) SOCSCI-203 Introduction to Sociology	

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Electronics Technician Fundamentals technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Electronics.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Environmental Health and Water Quality Technology

ASSOCIATE DEGREE | **Program Code: 10-506-1** | Mequon Campus

ENVIRONMENTAL HEALTH AND WATER QUALITY TECHNOLOGY
matc.edu/academics/pathways

Certificate
- Water Technician, p. 202

Associate Degree
- Environmental Health and Water Quality Technology, p. 64

This program promotes environmental protection, improvement and sustainability, with a focus on protecting our water, food and air resources. Hands-on coursework includes techniques used to determine water, food, and air quality along with implementing needed corrective actions. Graduates will have a solid foundation for a range of career opportunities that include the application of regulations and procedures to identify, evaluate, and control hazards.

Career Outlook
There is a steady need for technicians and specialists in water and air quality; food safety; field monitoring that includes lakes, rivers and streams; as well as other environmental careers.

Program Learning Outcomes
- Evaluate environmental health hazards (air, food, water, soil, etc.)
- Conduct both field and lab environmental sampling/monitoring according to regulatory requirements and guidelines
- Perform corrective actions to remediate environmental health hazards

(For full description, see matc.edu.)

Admission Requirements
- A high school diploma or GED
- One semester of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195** Written Communication ^ (or) ENG-201 English 1 ‡	3
(1)	**ENVHEL-101** Introduction to Environmental Health/ Water Quality ^	3
(1)	**ENVHEL-102** Environmental Biology	4
(1)	**ENVHEL-109** Applied Environmental Chemistry ^	4
(1)	**MATH-107** College Mathematics ‡ ^ (or) Any 200-level MATH course	3
(2)	**ENG-197** Technical Reporting (or) Any 200-level ENG or SPEECH course	3
(2)	**ENVHEL-142** Principles of Water Resources ^	3
(2)	**ENVHEL-145** Water/Wastewater Operations – Municipal	3
(2)	**ENVHEL-173** Environmental Bacteriology	3
(2)	**PSYCH-199** Psychology of Human Relations (or) Any 200-level PSYCH course	3
(3)	**ECON-195** Economics (or) Any 200-level ECON course	3
(3)	**ENVHEL-104** Industrial Hygiene Technology ‡	4
(3)	**ENVHEL-111** Applied Water Chemistry and Analysis ‡	4
(3)	**ENVHEL-115** Air Quality ‡	4
(3)	**ENVHEL-146** Water/Wastewater Operations – Industrial ‡	2
(4)	**ENVHEL-105** Fundamentals of Hazardous Materials Control ‡	4
(4)	**ENVHEL-119** Food and Dairy Safety ‡	3
(4)	**ENVHEL-127** Environmental Field Projects ‡	3
(4)	**ENVHEL-128** Environmental Health Internship ‡	1
(4)	**ENVHEL-143** Interpersonal Communication Skills and Environmental Management ‡	3

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Water Technician certificate.

Contact program instructor if you would like more information about this program.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Community & Human Services
Milwaukee Area Technical College

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

eProduction

ASSOCIATE DEGREE | **Program Code: 10-701-3** | Downtown Milwaukee Campus

ePRODUCTION
matc.edu/academics/pathways

Technical Diploma
• TV/Video Field Production Assistant, p. 181

Associate Degree
• eProduction, p. 65

To begin a career in producing on-demand visual media content, this degree prepares you to distribute high-quality video content for the internet, smartphones and other interactive technologies. You will learn how to acquire, edit and recode media for multiple delivery platforms, and gain hands-on experience at Milwaukee PBS studios.

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

- Apply the principles of design and storytelling to develop media products and services
- Demonstrate proficiency in the use of media software, tools and technology
- Manage a production from concept to completion
- Communicate creative rationale in formal and informal settings
- Apply ethical business practices

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	EPROD-150	Introduction to eProduction ^ 3
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(1)	TV-101	TV/Video Studio Production Techniques ‡ ^ 4
(1)	TV-181	Video in Society ^ 1
(1)	WEBDEV-102	Introduction to Digital Media 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	EPROD-151	Data Content Management/ Implementation ^ 3
(2)	TV-105	TV/Video Field Production Techniques ‡ ^ 4
(2)	TV-107	Scriptwriting for Visual Media 3
(2)	TV-112	Storytelling Via Post-Production ‡ ^ ... 3
(3)	ANIM-156	Broadcast Animation ‡ 3
(3)	EPROD-152	eProduction Techniques/ Implementation 3
(3)	EPROD-153	eProduction Practicum 1 ‡ ^ 3
(3)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course
(3)	TV-111	Field Lighting, Gripping and Gaffing .. 2
(3)	TV-142	Non-Linear Video Editing and Authoring ‡ ^ 3
(4)	EPROD-154	eProduction Integration 3
(4)	EPROD-155	eProduction Advanced Techniques 3
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level HIST or SOCSCI course
(4)	TV-109	Techniques for Field Audio Acquisition ‡ 2
(4)	TV-143	Interactive Content ..... 3 (or) TV-149 MCA Co-Op 1 ‡

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the TV/Video Field Production Assistant technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Event Management

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

EVENT MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
• Special Event Management, p. 175

Associate Degree
• Event Management, p. 66

Build a dynamic career in event management, meeting planning, special event marketing, corporate and convention sales, or hotel marketing.

Career Outlook

Festivals and events are among the fastest-growing segments of the hospitality/tourism industry; in addition, many associations and corporations hire people to plan and conduct meetings.

Program Learning Outcomes

- Apply project management strategies to a meeting or event
- Manage financial resources
- Design a meeting or event
- Promote a meeting or event
- Manage risk-management plan

Admission Requirements

- A high school diploma or GED
- Typing proficiency of 30 words per minute or concurrent enrollment in OFTECH-103 Keyboard and Keypad

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications ^ 3
(1)	ENG-195	Written Communication ^ 3 (or) ENG-201 English 1 ‡
(1)	HOTEL-122	Basic Hospitality Accounting ^ 3
(1)	HOTEL-135	Hospitality Professional Service and Development 3
(1)	MEET-151	Introduction to Hospitality/Tourism ^ 3
(1)	NATSCI-112	Principles of Sustainability 3 (or) Any 200-level NATSCI course
(2)	HOTEL-105	Hospitality Marketing, Sales and Revenue Strategy ^ 3
(2)	HOTEL-124	Managerial Accounting for the Hospitality Industry 3
(2)	HOTEL-127	Fundamentals of Meetings and Special Events ^ 3
(2)	MEET-116	Fundamentals of Green Meetings ^ 2
(2)	MEET-180	Registration and Housing Logistics ‡ ^ 3
(2)	MEET-181	Exposition and Special Event Management ‡ ^ 3
(3)	CULMGT-140	Food and Beverage Operations 3
(3)	ECON-195	Economics 3 (or) ECON-219 Personal Finance and Consumer Economics
(3)	ENG-196	Oral/Interpersonal Communication 3 (or) Any 200-level ENG or SPEECH course
(3)	HOTEL-133	Supervision in the Hospitality Industry 3
(3)	MEET-184	Risk Management and Crisis Planning ‡ 3
(4)	HOTEL-130	Internship in Hotel/Meeting Management ‡ 1
(4)	MATH-134	Mathematical Reasoning ^ 3 (or) Any 200-level MATH course
(4)	MEET-178	Meeting and Convention Planning ‡ 3
(4)	PSYCH-199	Psychology of Human Relations 3 (or) Any 200-level PSYCH course
(4)	SOCSCI-197	Contemporary American Society 3 (or) SOCSCI-200 Introduction to Ethical Issues

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Special Event Management technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Fire Protection Technician

ASSOCIATE DEGREE | **Program Code: 10-503-2** | Oak Creek Campus

FIRE PROTECTION TECHNICIAN
matc.edu/academics/pathways

Technical Diploma
• Emergency Medical Technician, p. 140

Associate Degree
• Fire Protection Technician, p. 67

This program prepares you for employment in the fire service and for fire-related duties within private industry. The program also instructs current firefighters and officers on changes within the fire service. Students will have the opportunity to obtain three Wisconsin fire certifications.

Career Outlook

As fire technology becomes more complex, the responsibilities and challenges a firefighter assumes are increasingly demanding. Therefore, well-trained and educated firefighters are sought by public and private entities.

Program Learning Outcomes

- Demonstrate professional conduct by displaying personal code of ethics, positive work ethics, flexibility, teamwork skills, physical fitness, safe procedures, and sensitivity to diverse cultures and individuals
- Perform fire prevention activities including preplanning, public education, inspection, and investigation
- Apply incident management skills to emergency incidents

(For full description, see matc.edu.)

Admission Requirements

- Age 17 or older
- Background check
- Medical exam/immunizations
- Students entering the program must have an official high school or GED/HSED transcript

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	FIRE-143	Building Construction for Fire Protection 3
(1)	FIRE-191	Principles of Emergency Services..... 2
(1)	FIRE-192	Principles of Emergency Services Safety and Survival..... 3
(1)	FIRE-193	Fire Protection Systems 3
(2)	ENG-196	Oral/Interpersonal Communication ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	FIRE-142	Firefighting Principles 4
(2)	FIRE-153	Hazardous Materials Awareness and Operations 1
(2)	FIRE-156	Strategies, Tactics and Incident Management ‡ 3
(2)	NATSCI-177	General Anatomy and Physiology ‡ 4
(3)	EMS-192	EMT ^ 5
(3)	FIRE-114	Employability Skills ‡..... 3
(3)	FIRE-144	Advanced Firefighting Principles ‡ 2
(3)	FIRE-194	Fire Protection Hydraulics ‡..... 3
(3)	SOCSCI-172	Introduction to Diversity Studies..... 3 (or) SOCSCI-217 Valuing Diversity
(4)	FIRE-151	Fire Prevention ‡ 4
(4)	FIRE-154	Hazardous Materials Chemistry ‡ 2
(4)	FIRE-157	Fire Investigation ‡..... 3
(4)	FIRE-195	Fire Behavior and Combustion..... 3
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Emergency Medical Technician technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Community & Human Services
Milwaukee Area Technical College

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Funeral Service

ASSOCIATE DEGREE | **Program Code: 10-528-1** | West Allis Campus

This program prepares you for a career as a licensed funeral director and embalmer in a profession that demands compassion, dedication and creativity. Our rigorous curriculum trains students to become among the best funeral directors in the expanding death-care profession. Once accepted into the program, students are immersed in all facets of the funeral profession. Coursework will include embalming, arranger training, grief studies, business management, religious funeral practices, regulatory compliance and more. Throughout the program, students are provided a variety of unique learning opportunities through lectures, hands-on labs, field trips, seminars, guest speakers and internships. Facilities include classrooms, state-of-the-art embalming and restorative art labs, arrangement conference room, merchandise selection room and funeral chapel. Students who complete the program will earn an associate degree and be eligible to take the National Board Exam for funeral directors (required for licensure).

American Board of Funeral Service Education Program Outcomes

- Explain the importance of funeral service professionals in developing relationships with the families and communities they serve.
- Identify standards of ethical conduct in funeral service practice.
- Interpret how federal, state, and local laws apply to funeral service in order to ensure compliance.
- Apply principles of public health and safety in the handling and preparation of human remains.
- Demonstrate technical skills in embalming and restorative art that are necessary for the preparation and handling of human remains.
- Demonstrate skills required for conducting arrangement conferences, visitations, services, and ceremonies.
- Describe the requirements and procedures for burial, cremation, and other accepted forms of final disposition of human remains.
- Describe methods to address the grief-related needs of the bereaved.
- Explain management skills associated with operating a funeral establishment.
- Demonstrate verbal and written communication skills and research skills needed for funeral service practice.

(For full description, see matc.edu.)

Admission Requirements

This program admits students through a petition selection process; see this program's webpage at matc.edu to view petition process and all requirements.
A minimum of 24 college credits in areas specified by the State Board of Examiners are required for admission into the Funeral Service program. See an MATC Community & Human Services Pathway advisor for information.

Start Date: August

Community & Human Services
MILWAUKEE AREA **Technical College**

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	**FUNERL-106** Thanatochemistry	3
(1)	**NATSCI-177** General Anatomy and Physiology ‡	4
(1)	**PSYCH-199** Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
(1)	**SOCSCI-197** Contemporary American Society	3
	(or) SOCSCI-210 Death and Dying	
(2)	**ACCTG-110** Financial Accounting	3
(2)	**BADM-165** Legal Environment of Business	3
(2)	**ENG-196** Oral/Interpersonal Communication	3
	(or) Any 200-level ENG or SPEECH course	
(2)	**NATSCI-197** Microbiology ‡	4
(3)	**FUNERL-104** Funeral Service Field Experience I ‡	2
(3)	**FUNERL-110** Introduction to Funeral Service ‡	2
(3)	**FUNERL-112** Laws, Rules and Regulations of Funeral Service ‡	3
(3)	**FUNERL-114** Pathology of Funeral Service ‡	2
(3)	**FUNERL-116** Funeral Service Practices ‡	4
(3)	**FUNERL-121** National Funeral Board Preparation I ‡	1
(3)	**FUNERL-131** Embalming Theory ‡	4
(4)	**FUNERL-105** Funeral Service Field Experience II ‡	2
(4)	**FUNERL-117** Funeral Service Management ‡	4
(4)	**FUNERL-120** Restorative Art ‡	4
(4)	**FUNERL-122** National Funeral Board Preparation II ‡	1
(4)	**FUNERL-132** Funeral Service Science ‡	3
(4)	**FUNERL-153** Psychology of Funeral Service ‡	3

TOTAL CREDITS: 64

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

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Accreditation

The Funeral Service degree program at Milwaukee Area Technical College – West Allis Campus is accredited by the American Board of Funeral Service Education (ABFSE), 992 Mantua Pike, Suite 108, Woodbury Heights, NJ 08097; 816-233-3747; abfse.org/html/committee.html.

The American Board of Funeral Service Education (ABFSE) – Committee on Accreditation (COA) has reaccredited this program for a period of seven years (through October 2021).

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, abfse.org. Passage rates for MATC are also on the Funeral Service webpage at matc.edu.

For more information about the program, contact: Gabriel Schauf, Funeral Service Program Coordinator, schaufg@matc.edu, 414-456-5320.

Graphic Design

ASSOCIATE DEGREE | **Program Code: 10-201-1** | Downtown Milwaukee Campus

GRAPHIC DESIGN
matc.edu/academics/pathways

Technical Diploma
• Production Artist, p. 170

Associate Degree
• Graphic Design, p. 69

You will be introduced to the range of opportunities in this field: design of print-generated and computer-generated graphics for books, newspapers, magazines, web applications and marketing materials; and additional design applications for point-of-purchase, packaging and outdoor advertising.

Career Outlook

Today's digital world reduces the geographic limits for finding clients. Employers include advertising agencies, corporations and nonprofit groups.

Program Learning Outcomes

- Apply the principles of design to develop strategic marketing and communication products and services
- Demonstrate proficiency in the use of design software, tools and technology
- Implement creative solutions from concept through completion using a formal process
- Apply effective legal and ethical business practices and project management skills
- Communicate artwork rationale in formal and informal settings

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	GRDS-103	Design Elements and Principles ^ 3
(1)	GRDS-107	Digital Imaging: Adobe Photoshop ^ .. 3
(1)	GRDS-115	Typographic Fundamentals ^ 3
(1)	GRDS-122	Vector Graphics: Adobe Illustrator ^ .. 3
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	GRDS-104	Researching and Concepting ‡ ^ 3
(2)	GRDS-110	Layout and Publishing: InDesign ‡ ^ .. 3
(2)	GRDS-111	Advertising Design ‡ ^ 3
(2)	GRDS-117	Packaging Design ‡ ^ 3
(2)	GRDS-128	Portfolio Pathway ^ 1
(3)	CAS-126	History of Advertising Media/Design .. 3
(3)	CAS-142	Brand and Media Strategies 3
(3)	GRDS-121	Exhibition Design 3
(3)	GRDS-129	Motion Graphic Design ‡ 3
(3)	MATH-134	Mathematical Reasoning ..... 3 (or) Any 200-level MATH course
(4)	GRDS-112	Graphic Design Workshop 3
(4)	GRDS-113	Digital Media Preparation 3
(4)	GRDS-116	Integrated Design Thinking ‡ 3
(4)	GRDS-153	Portfolio Assessment 3
(4)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Production Artist technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Health Information Technology

ASSOCIATE DEGREE | **Program Code: 10-530-1** | Downtown Milwaukee Campus

HEALTH INFORMATION TECHNICIAN
matc.edu/academics/pathways

Certificate
• Healthcare Customer Service, p. 195

Technical Diploma
• Medical Coding Specialist, p. 160

Associate Degree
• Health Information Technology, p. 70

Using the latest technology, health information technicians collect, analyze and report healthcare data. This requires knowledge of diseases, treatments, regulatory issues, computer systems and organizational skills.

Career Outlook

The U.S. Bureau of Labor and Statistics cites health information technology as a growing occupational area.

Program Learning Outcomes

- Apply data governance principles to ensure the quality of health data
- Apply coding and reimbursement systems
- Model professional behaviors and ethics
- Apply informatics and analytics in data use
- Apply organizational management techniques

Admission Requirements

High school diploma or GED, and one year of high school-level chemistry required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	HEALTH-101	Medical Terminology ^ 3
(1)	HEALTH-107	Digital Literacy for Healthcare ^ 2
(1)	HIT-182	Human Disease for Health Professions ‡ ^ 3
(1)	HIT-197	ICD Diagnosis Coding ‡ ^ 3
(1)	HIT-199	ICD Procedure Coding ‡ ^ 2
(1)	NATSCI-189	Basic Anatomy ^ ..... 3 (or) NATSCI-177 General Anatomy and Physiology ‡
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	HEALTH-104	Culture of Healthcare ^ 2
(2)	HIT-159	Healthcare Revenue Management ^ ... 3
(2)	HIT-162	Foundations of HIM ‡ ^ 3
(2)	HIT-165	Intermediate Coding ‡ ^ 3
(2)	HIT-184	CPT Coding ‡ ^ 3
(3)	HIT-163	Healthcare Stats and Analytics ‡ 3
(3)	HIT-164	Introduction to Health Informatics ‡ .. 3
(3)	HIT-178	Healthcare Law and Ethics ‡ 2
(3)	MATH-189	Introductory Statistics 3
(3)	PSYCH-188	Developmental Psychology ..... 3 (or) Any 200-level PSYCH course
(3)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) Any 200-level HIST or SOCSCI course
(4)	HIT-161	Health Quality Management ‡ 3
(4)	HIT-166	HIT Capstone ‡ 1
(4)	HIT-167	Management of HIM Resources ‡ 3
(4)	HIT-196	Professional Practice ‡ 3

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Medical Coding Specialist technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Healthcare Services Management

ASSOCIATE DEGREE | **Program Code: 10-530-3** | Downtown Milwaukee Campus (Also offered online)

HEALTHCARE SERVICES MANAGEMENT
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Health Unit Coordinator, p. 148
- Phlebotomy, p. 166

Associate Degree
- Healthcare Services Management, p. 71

Demonstrate leadership skills, manage support staff, and ensure efficient healthcare organizational workflows according to prescribed quality standards with the abilities attained through this program. Most courses are offered via flexible online and hybrid (in-class/online) formats.

Career Outlook

Employers in healthcare systems seek individuals who can function in multiple capacities. The Wisconsin Technical College System in October 2019 identified this profession as the No. 1 in-demand area of the Top 50 jobs.

Program Learning Outcomes

- Employ healthcare quality management techniques to encourage safe and efficient patient care
- Describe knowledge of healthcare systems management
- Utilize oral, written, and non-verbal communication skills in an organized and coherent manner
- Apply quantitative and qualitative reasoning skills

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school-level biology and chemistry required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ECON-195	Economics (or) Any 200-level ECON course	3
(1) ENG-195	Written Communication ^ * (or) ENG-201 English 1 ‡	3
(1) HEALTH-101	Medical Terminology ^ *	3
(1) HEALTH-104	Culture of Healthcare ^ *	2
(1) HEALTH-107	Digital Literacy for Healthcare ^ *	2
(1) NATSCI-189	Basic Anatomy (or) NATSCI-177 General Anatomy and Physiology ‡ (or) NATSCI-201 Anatomy and Physiology 1 ‡	3
(2) HSM-140	Health Unit Coordinator Procedures 1 ‡ ^ (or) CLABT-110 Basic Lab Skills ‡ * and CLABT-111 Phlebotomy ‡ *	3
(2) HSM-141	Health Unit Coordinator Procedures 2 ‡ ^ (or) MLABT-161 Computer Applications for the Medical Laboratory ‡ * and Two Credits of Electives	3
(2) HSM-142	Health Unit Coordinator Clinical ‡ ^ (or) MLABT-166 Phlebotomy Clinical Experience ‡ *	3
(2) HSM-145	Healthcare Law, Ethics and Professional Standards ‡	3
(2) MATH-189	Introductory Statistics ‡ (or) MATH-260 Basic Statistics ‡	3
(3) ACCTG-110	Financial Accounting	3
(3) ENG-197	Technical Reporting (or) Any 200-level ENG or SPEECH course	3
(3) HRMGT-193	Human Resources Management	3
(3) HSM-139	Bioethics, Human Research Practices and Compliance ‡	4
(3) HSM-144	Introduction to the Business of Healthcare ‡	3
(4) BADM-126	Business Finance ‡	3
(4) HSM-143	Healthcare Quality Management ‡	3
(4) HSM-146	Leadership in Healthcare Organizations ‡	4
(4) PSYCH-199	Psychology of Human Relations (or) Any 200-level PSYCH course	3
(4) SOCSCI-197	Contemporary American Society (or) Any 200-level HIST or SOCSCI course	3

TOTAL CREDITS: 63

( ) Semester order for full-time students.

^ Counts toward earning the Health Unit Coordinator technical diploma.

** Counts toward earning the Phlebotomy technical diploma.*

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Hotel/Hospitality Management

ASSOCIATE DEGREE | **Program Code: 10-109-1** | Downtown Milwaukee Campus

HOTEL/HOSPITALITY MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
- Foundations of Lodging and Hospitality Management, p. 146

Associate Degree
- Hotel/Hospitality Management, p. 72

To enter the hotel/motel industry at mid-management or supervisory levels, you will attain the required skills and experience employers seek. Although this is a day program, selected courses are scheduled for evenings and weekends on a rotating basis.

Career Outlook

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

Program Learning Outcomes

- Plan the operations within a hospitality organization
- Organize hospitality resources to achieve the goals of the organization
- Direct individuals and/or processes to meet organizational goals
- Control hospitality processes/procedures

Admission Requirements

- A high school diploma or GED
- Students are to be actively involved in the hospitality industry on a part-time basis while attending MATC

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	HOTEL-110	Front Office Procedures and Management ^ 3
(1)	HOTEL-122	Basic Hospitality Accounting ^ 3
(1)	HOTEL-135	Hospitality Professional Service and Development ^ 3
(1)	MEET-151	Introduction to Hospitality/Tourism ^ ... 3
(2)	HOTEL-105	Hospitality Marketing, Sales and Revenue Strategy ^ 3
(2)	HOTEL-112	Front Office Computerized Procedures ‡ ^ 3
(2)	HOTEL-120	Building Operations and Security ^ ... 3
(2)	HOTEL-124	Managerial Accounting for the Hospitality Industry ‡ 3
(2)	HOTEL-127	Fundamentals of Meetings and Special Events ^ 3
(2)	HOTEL-150	Housekeeping Operations ^ 2
(3)	CULMGT-117	Hospitality Law and Liability ^ 3
(3)	HOTEL-133	Supervision in the Hospitality Industry 3
(3)	MATH-134	Mathematical Reasoning ..... 3 (or) Any 200-level MATH course
(3)	NATSCI-112	Principles of Sustainability ..... 3 (or) NATSCI-220 Introduction to Nutritional Science
(3)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	CULMGT-140	Food and Beverage Operations 3
(4)	ECON-195	Economics ..... 3 (or) Any 200-level ECON course
(4)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(4)	HOTEL-130	Internship in Hotel/Meeting Management ‡ 1
(4)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) SOCSCI-200 Introduction to Ethical Issues

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Foundations of Lodging and Hospitality Management technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Human Resources

ASSOCIATE DEGREE | **Program Code: 10-116-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Gain entry-level skills in a variety of areas related to the human resources profession, including recruitment, selection, training and development, employee and labor relations, compensation and benefits.

Career Outlook

New legislation and court rulings are expected to increase demand for human resources personnel and labor relations experts.

Program Learning Outcomes

- Create an organizational workforce plan
- Develop training programs
- Examine organizational total rewards programs
- Incorporate employment law into business practices
- Facilitate effective employee relations

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**BADM-106**	MS Office for Business Applications....**3**
(1)	**BADM-133**	Introduction to Business....**3**
(1)	**ENG-195**	Written Communication....**3** (or) ENG-201 English 1 ‡
(1)	**HRMGT-193**	Human Resource Management....**3**
(1)	**HRMGT-198**	Business Ethics....**3**
(2)	**BADM-110**	Business Communications With Technology....**3**
(2)	**HRMGT-133**	Legal Issues and Employment Law....**3**
(2)	**HRMGT-196**	Recruiting and Selection....**3**
(2)	**MATH-123**	Math With Business Applications ‡....**3**
(2)	**MATH-134**	Mathematical Reasoning....**3** (or) Any 200-level MATH course
(3)	**ACCTG-142**	Payroll Accounting....**2**
(3)	**ENG-197**	Technical Reporting....**3** (or) Any 200-level ENG or SPEECH course
(3)	**HRMGT-136**	Safety in the Workplace....**3**
(3)	**HRMGT-169**	Diversity and Change Management....**3**
(3)	**HRMGT-197**	Employee Training and Development ‡....**3**
(3)	**SOCSCI-197**	Contemporary American Society....**3** (or) Any 200-level SOCSCI course
(4)	**HRMGT-170**	Employee Relations and Labor Relations....**3**
(4)	**HRMGT-194**	Fundamentals of Compensation....**3**
(4)	**LOGMGT-105**	Enterprise Resource Planning....**3**
(4)	**MGTDEV-190**	Leadership Development....**3**
(4)	**PSYCH-199**	Psychology of Human Relations....**3** (or) Any 200-level PSYCH course

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management

Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Human Service Associate

ASSOCIATE DEGREE | **Program Code: 10-520-3** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

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 addictions.

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

- Model a commitment to cultural competence
- Uphold the Ethical Standards and Values for Human Service Professionals
- Demonstrate professionalism
- Utilize community resources
- Apply human services interventions and best practices
- Cultivate professional relationships

Admission Requirements

- A high school diploma or GED
- Documentation of compliance with Wisconsin's Caregiver Law

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) AODA-109	Drug Use and Abuse	3
(1) ENG-195	Written Communication (or) ENG-201 English 1 ‡	3
(1) HUMSVC-101	Introduction to Human Services ‡	3
(1) HUMSVC-144	Ethics in the Human Service Professions ‡	3
(2) ENG-196	Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(2) HUMSVC-102	Interviewing Skills ‡	3
(2) HUMSVC-103	Group Work Skills ‡	3
(2) HUMSVC-113	Documentation and Record Keeping ‡	3
(2) HUMSVC-118	Introduction to Gerontology	3
(2) NATSCI-172	Basic Nutritional Science (or) Any 200-level NATSCI course	3
(2) SOCSCI-197	Contemporary American Society (or) SOCSCI-203 Introduction to Sociology	3
(3) ECON-195	Economics (or) Any 200-level ECON course	3
(3) HUMSVC-104	Field Preparation ‡	1
(3) HUMSVC-115	Methods of Social Casework ‡	3
(3) HUMSVC-127	Disabilities and the Helping Profession	3
(3) HUMSVC-142	Multicultural Competence in the Human Service Profession	3
(4) ELECTIVES	(Three credits needed)	3
(4) HUMSVC-106	Advanced Field Experience ‡	4
(4) HUMSVC-107	Field Experience Seminar ‡	2
(4) HUMSVC-121	Family Issues and Interventions ‡	3
(4) PSYCH-188	Developmental Psychology (or) PSYCH-238 Lifespan Psychology	3
(4) PSYCH-199	Psychology of Human Relations (or) PSYCH-231 Introductory Psychology	3

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Individualized Technical Studies

ASSOCIATE DEGREE | **Program Code: 10-825-1** | All campuses

This associate degree program is designed to meet specific educational needs of students, business and industry not currently served by other degree programs. It is a customized program for students who need to combine skills and knowledge from different disciplines to be productive in tomorrow's workforce.

A Specialized Degree

The curriculum for an Individualized Technical Studies degree will be drawn from existing offerings at MATC.

Admission Requirements

- A high school diploma or GED
- Interview with the program coordinator to evaluate career goals and determine if the program is appropriate
- Develop a formal portfolio to document the process
- Establish degree requirements and a timeline for degree completion

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
INDVTS-102	Career Assessment and Portfolio Development	**3**
ECON-195	Economics	**3**
	(or) Any 200-level ECON course	
ENG-196	Oral/Interpersonal Communication	**3**
	(or) ENG-201 English 1 ‡	
ENG-197	Technical Reporting	**3**
	(or) Any 200-level ENG or SPEECH course	
MATH-107	College Mathematics ‡	**3**
	(or) MATH-113 College Technical Mathematics 1A ‡	
	(or) Any 200-level MATH course	
NATSCI-112	Principles of Sustainability	**3**
	(or) Any 200-level NATSCI course	
PSYCH-199	Psychology of Human Relations	**3**
	(or) Any 200-level PSYCH course	
SOCSCI-197	Contemporary American Society	**3**
	(or) Any 200-level HIST or SOCSCI course	
OTHER COURSES		**36**

TOTAL CREDITS: 60

‡ Prerequisite required.

Curriculum requirements are subject to change.

A minimum of 25% of total program requirements must be earned at MATC.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

Interior Design

ASSOCIATE DEGREE | **Program Code: 10-304-1** | West Allis Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Interior designers use creativity, technical knowledge, and aesthetics to create solutions that improve the function and quality of interior environments. Coursework includes manual and computer-aided design (CAD) drawing, and commercial and residential planning.

Career Outlook

Demand is strongest in kitchen and bath design and remodeling, and in corporate and industrial facilities design.

Program Learning Outcomes

- Integrate the codes and standards that impact the interior environment
- Model professional practices of the Interior Design industry
- Validate the design process
- Evaluate design decisions within the parameters of the built environment

Admission Requirements

- A high school diploma or GED
- Demonstration of proficiency in basic computer skills or completion of COMPSW-106

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ECON-195**	Economics ..... **3** (or) Any 200-level ECON course
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**INDSGN-100**	Introduction to Interior Design **3**
(1)	**INDSGN-102**	Basic Architectural Drawing **3**
(1)	**INDSGN-104**	Interior Elements of Building Construction **3**
(1)	**INDSGN-106**	Materials and Furniture Design **3**
(2)	**ENG-197**	Technical Reporting ..... **3** (or) any 200-level ENG or SPEECH course
(2)	**INDSGN-108**	Residential Studio ‡ **3**
(2)	**INDSGN-110**	Advanced Architectural Drawing ‡ **3**
(2)	**INDSGN-112**	Textiles: Science, Application and Design **3**
(2)	**INDSGN-114**	Color and Light ‡ **3**
(2)	**MATH-107**	College Mathematics ‡ ..... **3** (or) Any 200-level MATH course
(3)	**INDSGN-116**	Kitchen and Bath Design ‡ **3**
(3)	**INDSGN-118**	Commercial Studio ‡ **3**
(3)	**INDSGN-120**	Interior Design Internship ‡ **1**
(3)	**INDSGN-122**	Styles of Furniture and Architecture ‡ **3**
(3)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(4)	**ELECTIVES**	(Three credits needed) **3**
(4)	**INDSGN-124**	Advanced Commercial Studio ‡ **3**
(4)	**INDSGN-128**	Designer/Client Relationships **3**
(4)	**INDSGN-130**	Portfolio Development and Application ‡ **3**
(4)	**SOCSCI-197**	Contemporary American Society ..... **3** (or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Computer Support Specialist

ASSOCIATE DEGREE | **Program Code: 10-154-3** | All campuses (Also offered online)

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Computer support specialists are in high demand locally and throughout the United States. This program prepares you for industry-sought certifications, including CompTIA's A+, Network +, Security+ and Mobility+ Device Administrators (iOS, Android and Windows), Microsoft Certified Professional in Windows Desktop, Microsoft Enterprise Desktop Support Technician (MCITP), Apple OSX Certified Support Professional (ACSP), HDI-SCA, HDI-DST and ITIL Foundation.

Career Outlook

Computer support specialists are in high demand locally and throughout the United States. Typical job titles include junior help desk technician, junior support specialist, Apple support specialist, mobile device support specialist, desktop support specialist and IT field technician.

Program Learning Outcomes

- Manage information technology hardware
- Manage software
- Support computer networks
- Provide end-user support
- Solve information technology problems
- Demonstrate customer service skills as an IT professional

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the IT Computer Support Technician technical diploma.
† Counts toward earning the IT Help Desk Support Specialist technical diploma.
** Counts toward earning the IT User Support Technician technical diploma.*

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ENG-195	Written Communication ^ † 3
		(or) ENG-201 English 1 ‡
(1)	ITSUP-101	Computer Information Systems Fundamentals ^ † 3
(1)	ITSUP-109	Microsoft Office for IT Professionals ^ † .. 3
(1)	ITSUP-111	CompTIA A+ Software Support ^ † ... 3
(1)	ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL) ^ * † 3
(2)	ENG-197	Technical Reporting 3
		(or) Any 200-level ENG or SPEECH course
(2)	ITNET-101	Network Communications (Network+) ^ † 3
(2)	ITSUP-102	CompTIA A+ Essentials ^ † 3
(2)	ITSUP-177	IT Projects, Teamwork and Self-Management † 3
(2)	ITSUP-197	Business Data Analytics 3
(3)	ITSUP-150	Mobile Device Repair and Support * † .. 3
(3)	ITSUP-152	Apple OSX Certified Support Professional (ACSP) * † 3
(3)	ITSUP-155	IT Career Skills ^ † 3
(3)	MATH-123	Math With Business Applications ‡ 3
		(or) Any 200-level MATH course
(3)	SOCSCI-197	Contemporary American Society 3
		(or) Any 200-level SOCSCI or HIST course
(4)	ELECTIVES	(Three credits needed) 3
(4)	ITSEC-124	Network Security (Security+) ^ † 3
(4)	ITSUP-106	Linux Support 1
(4)	ITSUP-153	Mobile Device Administration * † 3
(4)	ITSUP-198	Computer Support Specialist Internship ‡ † 1
(4)	ITSUP-199	Integrated Project – Computer Support Specialist † 1
(4)	PSYCH-199	Psychology of Human Relations 3
		(or) Any 200-level PSYCH course

TOTAL CREDITS: 60

Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

IT Information Systems Security Specialist

ASSOCIATE DEGREE | **Program Code: 10-151-3** | All campuses

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Prepare for a career in computer network and internet security by learning to develop information security strategies, perform risk analyses, install security software, monitor network traffic and develop an emergency response plan. You will have hands-on coursework in securing MS Windows, Unix/Linux, Cisco, networks, servers and clients, and the enterprise network.

Career Outlook

Employment opportunities are growing due to the increased need for secure computer systems.

Program Learning Outcomes

- Identify security strategies
- Implement secure infrastructures
- Conduct security testing
- Analyze security data
- Mitigate risk
- Develop security documentation

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

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	ITNET-110	Managing Windows Desktop (Client) Operating System 3
(1)	ITNET-131	Introduction to Networks (Cisco 1) 3
(1)	ITSEC-124	Network Security (Security+) 3
(1)	MATH-123	Math With Business Applications ‡ ..... 3 (or) Any 200-level MATH course
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	ITNET-112	MS Server Administration 1 3
(2)	ITNET-132	Routing/Switching Essentials (Cisco 2) ... 3
(2)	ITNET-161	Linux Overview 2
(2)	ITSEC-152	Information Security Risk Management 3
(3)	ELECTIVES	(Three credits needed) 3
(3)	ITNET-111	MS Server Administration 2 3
(3)	ITSEC-136	Unix/Linux Administration and Security 3
(3)	ITSEC-145	Perimeter Security 3
(3)	ITSEC-148	Securing Wireless Devices and Networks 3
(3)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	ITSEC-122	Web/Application Security 3
(4)	ITSEC-126	Computer Forensics 3
(4)	ITSEC-146	Security Measures and Intrusion Detection 3
(4)	ITSEC-191	Information Systems Security Internship 2 ‡ ..... 1 (or) ITSEC-194 Security Project Implementation
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

STEM

Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Mobile Applications Developer

ASSOCIATE DEGREE | **Program Code: 10-152-8** | All campuses

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Develop your skills in software development with an emphasis on creating mobile applications. You will learn essential programming skills while developing mobile applications for both iOS and Android platforms.

Career Outlook

There is a growing need for qualified mobile application developers. Graduates of this program also may find employment in programming, or operations and systems analysis.

Program Learning Outcomes

- Design software systems
- Integrate database technologies
- Develop software applications
- Develop technical documentation

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	ITDEV-110	Introduction to Object-Oriented Programming 3
(1)	ITDEV-117	Logic and Problem-Solving 3
(1)	WEBDEV-114	Web Development With HTML/CSS 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	ITDEV-115	Intermediate Object-Oriented Programming ‡ 3
(2)	ITDEV-140	Programming With Java 3
(2)	ITDEV-150	Database Management With SQL ‡ 3
(2)	ITDEV-160	Web Programming With Scripts (JavaScript) 3
(3)	ITDEV-161	Web Programming 1 ‡ 3
(3)	ITDEV-177	Systems Analysis and Design ..... 3 (or) CSG-127 Agile Project Management
(3)	ITDEV-181	Mobile Application Development ‡ 3
(3)	MATH-123	Math With Business Applications ‡ ..... 3 (or) Any 200-level MATH course
(3)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	ELECTIVES	(Three credits needed) 3
(4)	IT-107	Social Networking and Business 3
(4)	ITDEV-154	Data Structures and Programming ‡ .. 3
(4)	ITDEV-182	Hybrid Mobile App Development ‡ 3
(4)	ITDEV-184	iPhone and iOS Mobile App Development 3
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

STEM

Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Network Specialist – Online Accelerated

ASSOCIATE DEGREE | **Program Code: 10-150-2** | Offered entirely online

IT NETWORK SPECIALIST
matc.edu/academics/pathways

Technical Diploma
- IT Networking and Infrastructure Administration, p. 152

Associate Degree
- IT Network Specialist – Online Accelerated, p. 80
- IT Network Specialist, p. 81

This program is offered entirely online. The accelerated format enables students to complete the program's technical studies courses in less than 18 months. Certification preparations in this degree include: VMware Certified Professional (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Solutions Associate (MCSA) Windows Client, Microsoft Certified Professional (MCP) Windows Server and CompTIA (A+, Network+ and Security+).

Program Learning Outcomes

- Implement computer networks
- Implement client systems
- Implement server operating systems
- Implement network security components
- Develop technical documentation
- Troubleshoot network systems

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra
- This online accelerated program also requires an interview, proof of broadband connection, and purchase of supplies to build a PC

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	IT-107	Social Networking and Business 3
(1)	ITNET-101	Network Communications (Network+) ^ 3
(1)	ITNET-110	Managing Windows Desktop (Client) Operating System ^ 3
(1)	ITNET-131	Introduction to Networks (Cisco 1) ^ 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	ITNET-112	MS Server Administration 1 ^ 3
(2)	ITNET-132	Routing/Switching Essentials (Cisco 2) ‡ ^ 3
(2)	ITSEC-124	Network Security (Security+) 3
(2)	ITSUP-102	CompTIA A+ Essentials 3
(3)	ITNET-111	MS Server Administration 2 ^ 3
(3)	ITNET-133	Scaling Networks (Cisco 3) ‡ ^ 3
(3)	ITNET-134	Connecting Networks (Cisco 4) ‡ ^ 3
(3)	ITNET-159	Cloud Infrastructure Services 3
(3)	MATH-123	Math With Business Applications ‡ ^ .. 3 (or) Any 200-level MATH course
(4)	ELECTIVES	(Three 100-level credits needed) 3
(4)	ITNET-157	Emerging IT Technologies ‡ ^ 3
(4)	ITNET-198	Network Specialist Internship ‡ 1
(4)	ITNET-199	Integrated Project – Network Specialist 2
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the IT Networking and Infrastructure Administration technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Network Specialist

ASSOCIATE DEGREE | **Program Code: 10-150-2** | All campuses

IT NETWORK SPECIALIST
matc.edu/academics/pathways

Technical Diploma
- IT Networking and Infrastructure Administration, p. 152

Associate Degree
- IT Network Specialist – Onlline Accelerated, p. 80
- IT Network Specialist, p. 81

Through hands-on coursework, you will set up network operating systems and work with emerging technologies. Certification preparations in this degree include: VMware Certified Professional (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Solutions Associate (MCSA) Windows Client, Microsoft Certified Professional (MCP) Windows Server and CompTIA (A+, Network+ and Security+).

Career Outlook

Employment opportunities are strong. This program will prepare you to obtain an entry-level information technology position with possibilities for advancement. You also will be ready to take industry certification exams.

Program Learning Outcomes

- Implement computer networks
- Implement client systems
- Implement server operating systems
- Implement network security components
- Develop technical documentation
- Troubleshoot network systems

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	IT-107	Social Networking and Business 3
(1)	ITNET-101	Network Communications (Network+) ^ 3
(1)	ITNET-110	Managing Windows Desktop (Client) Operating System ^ 3
(1)	ITNET-131	Introduction to Networks (Cisco 1) ^ 3
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	ITNET-112	MS Server Administration 1 ^ 3
(2)	ITNET-132	Routing/Switching Essentials (Cisco 2) ‡ ^ 3
(2)	ITSEC-124	Network Security (Security+) 3
(2)	ITSUP-102	CompTIA A+ Essentials 3
(3)	ITNET-111	MS Server Administration 2 ^ 3
(3)	ITNET-133	Scaling Networks (Cisco 3) ‡ ^ 3
(3)	ITNET-134	Connecting Networks (Cisco 4) ‡ ^ 3
(3)	ITNET-159	Cloud Infrastructure Services 3
(3)	MATH-123	Math With Business Applications ‡ ^ .. 3 (or) Any 200-level MATH course
(4)	ELECTIVES	(Three 100-level credits needed) 3
(4)	ITNET-157	Emerging IT Technologies ‡ ^ 3
(4)	ITNET-198	Network Specialist Internship ‡ 1
(4)	ITNET-199	Integrated Project – Network Specialist 2
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the IT Networking and Infrastructure Administration technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

STEM
Milwaukee Area ***Technical College***

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Web and Software Developer

ASSOCIATE DEGREE | **Program Code: 10-152-7** | All campuses

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Develop software applications that can be deployed using a variety of platforms. You will learn essential programming skills while developing software that utilizes client and server processing, connects to databases and will run simultaneously on multiple devices.

Career Outlook

There is a growing need for qualified web and software developers. Program graduates also may pursue opportunities related to programming and database management.

Program Learning Outcomes

- Design software systems
- Integrate database technologies
- Develop software applications
- Develop technical documentation

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**ITDEV-110**	Introduction to Object-Oriented Programming **3**
(1)	**ITDEV-117**	Logic and Problem-Solving **3**
(1)	**WEBDEV-114**	Web Development With HTML/CSS **3**
(2)	**ENG-197**	Technical Reporting ..... **3** (or) Any 200-level ENG or SPEECH course
(2)	**ITDEV-115**	Intermediate Object-Oriented Programming ‡ **3**
(2)	**ITDEV-140**	Programming With Java ‡ **3**
(2)	**ITDEV-150**	Database Management With SQL **3**
(2)	**ITDEV-160**	Web Programming With Scripts (JavaScript) **3**
(2)	**MATH-123**	Math With Business Applications ‡ ..... **3** (or) Any 200-level MATH course
(3)	**ITDEV-161**	Web Programming 1 ‡ **3**
(3)	**ITDEV-162**	Client/Server and eCommerce Implementation **3**
(3)	**ITDEV-177**	Systems Analysis and Design ‡ ..... **3** (or) CSG-127 Agile Project Management
(3)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(4)	**ELECTIVES**	(Three credits needed) **3**
(4)	**IT-107**	Social Networking and Business **3**
(4)	**ITDEV-154**	Data Structures and Programming ‡ .. **3**
(4)	**ITDEV-164**	Web Programming 2 ‡ **3**
(4)	**ITDEV-185**	Advanced Object-Oriented Programming ‡ **3**
(4)	**SOCSCI-197**	Contemporary American Society ..... **3** (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

STEM
MILWAUKEE AREA ***Technical College***

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Landscape Horticulture

ASSOCIATE DEGREE | **Program Code: 10-001-4** | Mequon Campus

LANDSCAPE HORTICULTURE
matc.edu/academics/pathways

Technical Diploma
• Landscape Horticulture Technician, p. 154

Associate Degree
• Landscape Horticulture, p. 83

For opportunities that require outdoor work, creativity and plant knowledge, check out horticulture/landscape careers. This program includes coursework in landscape maintenance and arboriculture, and emphasizes hands-on learning.

Career Outlook

There is a steady demand for arborists, horticulturists, landscape designers and landscapers.

Program Learning Outcomes

- Analyze growing media
- Diagnose plant health
- Communicate as a horticulture professional
- Apply design principles
- Provide horticulture maintenance
- Apply the principles of plant science

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the Landscape Horticulture Technician technical diploma.
Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	HORT-111	Introduction to Horticulture ^ 3
(1)	HORT-112	Horticulture Soils ^ 3
(1)	HORT-114	Survey of Woody Ornamental Plants ^ 3
(1)	HORT-116	Landscape Equipment ^ 3
(2)	HORT-113	Ornamental Plant Health Care ^ 3
(2)	HORT-118	Landscape Business Principles ^ 3
(2)	HORT-122	Landscape Design I ^ 3
(2)	HORT-126	Landscape Estimating and Bidding ^ 3
(2)	HORT-159	Survey of Herbaceous Plants ^ 2
(2)	NATSCI-112	Principles of Sustainability ..... 3 (or) Any 200-level NATSCI course
(3)	ELECTIVES	(Three 100-level credits needed) 3
(3)	ENG-196	Oral/Interpersonal Communication .... 3 (or) Any 200-level ENG or SPEECH course
(3)	HORT-119	Landscape Construction 1 3
(3)	HORT-121	Irrigation, Lighting and Ponds ..... 3 (or) HORT-127 Arboriculture 1: Tree Care Fundamentals
(3)	HORT-123	Landscape Design II ‡ ..... 3 (or) HORT-120 Landscape Construction II
(3)	HORT-125	Landscape Maintenance Applications 3
(4)	ELECTIVES	(Two 100-level credits needed) 2
(4)	HORT-124	Landscape Design 3 ‡ ..... 2 (or) HORT-171 Exterior Plant Pests
(4)	HORT-132	Communications and Marketing 2
(4)	HORT-161	Landscape Plants – Shrubs ‡ ..... 2 (or) HORT-160 Landscape Plants – Trees ‡
(4)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(4)	SOCSCI-197	Contemporary American Society ^ .... 3 (or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 64

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Marketing – Online Accelerated

ASSOCIATE DEGREE | **Program Code: 10-104-3** | Offered entirely online

MARKETING
matc.edu/academics/pathways

Technical Diploma
- Digital Marketing and Integrated Communications, p. 136
- Sales and Customer Experience, p. 174

Associate Degree
- Marketing – Online Accelerated, p. 84
- Marketing, p. 85

Designed for the adult learner, you can complete this degree entirely online in 16 months of full-time study (fall, spring, summer, fall) by combining accelerated online Marketing courses with online support and general studies courses.

Career Outlook

Marketing is a U.S. Department of Labor "Bright Outlook" career with expected growth of 5% to 9% through 2026.

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

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications....3
(1)	ENG-195	Written Communication ^ ....3 (or) ENG-201 English 1 ‡
(1)	MKTG-102	Marketing Principles *....3
(1)	MKTG-104	Selling Principles *....3
(2)	ACCTG-110	Financial Accounting....3
(2)	MATH-107	College Mathematics ‡....3 (or) Any 200-level MATH course
(2)	MKTG-125	Advertising: Brands and Campaigns ^....3
(2)	MKTG-173	Marketing Research/Analytics ^....3
(2)	MKTG-198	Visual Media Marketing ^....3
(3)	BADM-110	Business Communications With Technology....3
(3)	ECON-195	Economics....3 (or) Any 200-level ECON course
(3)	ENG-197	Technical Reporting....3 (or) Any 200-level ENG course
(3)	MKTG-118	Social Media Marketing ^....3
(3)	MKTG-165	Digital Marketing ^....3
(3)	PSYCH-199	Psychology of Human Relations....3 (or) Any 200-level PSYCH course
(4)	BADM-134	Business Organization and Management....3
(4)	MKTG-106	Retail and Consumer Marketing ‡*....3
(4)	MKTG-107	Customer Experience *....3
(4)	MKTG-134	Integrated Marketing Communications ^....3
(4)	MKTG-144	Client Services ^ *....3
(4)	MKTG-175	Marketing Internship ‡....1

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Digital Marketing and Integrated Communications technical diploma.

** Counts toward earning the Sales and Customer Experience technical diploma.*

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Marketing

ASSOCIATE DEGREE | **Program Code: 10-104-3** | Downtown Milwaukee, Mequon, Oak Creek campuses (Also offered online)

MARKETING
matc.edu/academics/pathways

Technical Diploma
- Digital Marketing and Integrated Communications, p. 136
- Sales and Customer Experience, p. 174

Associate Degree
- Marketing – Online Accelerated, p. 84
- Marketing, p. 85

Develop a broad base of industry-required knowledge and abilities in advertising, sales, promotion, marketing research, digital marketing, social media, client services and customer experience planning.

Career Outlook

Marketing is a U.S. Department of Labor "Bright Outlook" career with expected growth of 5% to 9% through 2026.

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

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications....3
(1)	ENG-195	Written Communication ^ ....3 (or) ENG-201 English 1 ‡
(1)	MKTG-102	Marketing Principles *....3
(1)	MKTG-104	Selling Principles * 3
(2)	ACCTG-110	Financial Accounting 3
(2)	MATH-107	College Mathematics ‡ ....3 (or) Any 200-level MATH course
(2)	MKTG-125	Advertising: Brands and Campaigns ^....3
(2)	MKTG-173	Marketing Research/Analytics ^ 3
(2)	MKTG-198	Visual Media Marketing ^ 3
(3)	BADM-110	Business Communications With Technology 3
(3)	ECON-195	Economics....3 (or) Any 200-level ECON course
(3)	ENG-197	Technical Reporting....3 (or) Any 200-level ENG course
(3)	MKTG-118	Social Media Marketing ^ 3
(3)	MKTG-165	Digital Marketing ^....3
(3)	PSYCH-199	Psychology of Human Relations ....3 (or) Any 200-level PSYCH course
(4)	BADM-134	Business Organization and Management....3
(4)	MKTG-106	Retail and Consumer Marketing ‡ *....3
(4)	MKTG-107	Customer Experience * 3
(4)	MKTG-134	Integrated Marketing Communications ^....3
(4)	MKTG-144	Client Services ^ *....3
(4)	MKTG-175	Marketing Internship ‡....1

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Digital Marketing and Integrated Communications technical diploma.

** Counts toward earning the Sales and Customer Experience technical diploma.*

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Mechanical Design Technology

ASSOCIATE DEGREE | **Program Code: 10-606-1** | Downtown Milwaukee Campus

MECHANICAL DESIGN TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
• Mechanical and Computer Drafting, p. 157

Associate Degree
• Mechanical Design Technology, p. 86

Get involved in the engineering design process – design and analyze mechanical components and assemblies; and create 3D solid models and 2D detailed drawings for parts or assemblies of mechanical and electromechanical systems using the latest computer-aided design/drafting (CADD) systems.

Career Outlook

The employment outlook is favorable for mechanical drafters/designers having current training involving CADD systems.

Program Learning Outcomes

- Prepare detail and assembly drawings for documentation of mechanical components and products
- Create CAD Geometry, parts, and assemblies
- Design mechanical components and products
- Analyze mechanical engineering problems
- Select purchased parts

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or equivalent

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**CIVIL-102** Introduction to AutoCAD ^	2
(1)	**CIVIL-105** Computer Applications ^	2
(1)	**MATH-115** College Technical Mathematics 1 ‡ ^	5
(1)	**MCDESG-102** Technical Drafting 1 ‡ ^	3
(1)	**MCDESG-162** Engineering Materials ^	2
(2)	**MATH-116** College Technical Mathematics 2 ‡	4
(2)	**MCDESG-104** Technical Drafting 2 With CAD ‡ ^	3
(2)	**MCDESG-114** SolidWorks 1 ‡ ^	2
(2)	**MCDESG-160** Statics ‡	3
(2)	**SOCSCI-197** Contemporary American Society	3
(3)	**ENG-195** Written Communication (or) ENG-201 English 1 ‡	3
(3)	**MCDESG-106** Advanced Engineering Graphics ‡ ^	3
(3)	**MCDESG-118** Kinematics ‡	3
(3)	**MCDESG-124** SolidWorks 2 ‡ ^	2
(3)	**MCDESG-130** Strength of Materials ‡	3
(3)	**MCDESG-163** Machining Processes ‡ ^	2
(4)	**ELECTIVES** (Two credits needed)	2
(4)	**ENG-196** Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	3
(4)	**MCDESG-112** Tool Design ‡	3
(4)	**MCDESG-116** Design Elements ‡	3
(4)	**MCDESG-125** Design Problems ‡	3
(4)	**MCDESG-135** PTC Creo (Pro/E) 1 ‡	2
(4)	**PSYCH-199** Psychology of Human Relations	3

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Mechanical and Computer Drafting technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Medical Administrative Specialist

ASSOCIATE DEGREE | **Program Code: 10-160-4** | West Allis Campus

MEDICAL ADMINISTRATIVE PROFESSIONAL
matc.edu/academics/pathways

Technical Diploma
• Medical Billing, p. 159

Associate Degree
• Medical Administrative Specialist, p. 87

If you have an interest in the business or academic aspects of the health field, this program is a good fit for your career plans. Courses are offered in a blended format, which may include traditional classroom instruction and an online component.

Career Outlook

Work may include assisting with academic research, preparing electronic medical records or processing insurance claims. Employment opportunities are expected to increase.

Program Learning Outcomes

- Perform routine healthcare administrative procedures
- Process insurance claims
- Demonstrate effective workplace communications
- Apply technology skills to business and administrative tasks
- Maintain internal and external relationships
- Model professionalism in the workplace

Admission Requirements

- A high school diploma or GED
- Employers may require background checks, drug testing, immunizations, signed statements of confidentiality

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**BRHLTH-124** Medical Office Terminology 1 ^	3
(1)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	**OFTECH-101** Office Technologies 1 ^	3
(1)	**OFTECH-103** Keyboard and Keypad ^	1
(1)	**OFTECH-122** Business English Essentials ^	3
(1)	**SOCSCI-103** Think Critically and Creatively	3
	(or) Any 200-level SOCSCI or HIST course	
(2)	**ACCTG-102** Basic Office Accounting	3
(2)	**BRHLTH-125** Medical Office Terminology 2 ‡ ^	3
(2)	**ENG-196** Oral/interpersonal Communication	3
	(or) Any 200-level ENG or SPEECH course	
(2)	**OFTECH-119** Information Management	3
(2)	**OFTECH-133** Business Document Production 1 ‡	3
(3)	**BRHLTH-135** Medical Document Production ‡	3
(3)	**BRHLTH-140** Electronic Health Records: Administrative Application ‡	3
(3)	**BRHLTH-142** Administrative Procedures for the Medical Office ‡	3
(3)	**BRHLTH-170** Medical Insurance Principles and Coding ‡ ^	3
(3)	**NATSCI-189** Basic Anatomy ^	3
	(or) Any 200-level NATSCI course	
(4)	**BADM-110** Business Communications With Technology	3
(4)	**BRHLTH-112** Computerized Medical Billing ‡ ^	3
(4)	**BRHLTH-174** Medical Claims Reimbursement ‡ ^	2
(4)	**BRHLTH-197** Medical Office Career Investigation ‡ ^	3
(4)	**PSYCH-199** Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
(4)	**SOCSCI-172** Introduction to Diversity Studies	3

TOTAL CREDITS: 63

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Medical Billing technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Medical Laboratory Technician

ASSOCIATE DEGREE | **Program Code: 10-513-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Begin a rewarding healthcare career as a Medical Laboratory Technician (MLT). Students attend classes four to five days each week; clinical experiences near the program's end are arranged at clinical laboratories. Upon completion of the program, the student is eligible to write national certifying examinations.

Career Outlook

Currently, the job market looks favorable. Opportunities exist in hospitals, clinics, doctors' offices, commercial industries, scientific research and infection control.

Program Learning Outcomes

- Practice laboratory safety and regulatory compliance
- Collect and process biological specimens
- Monitor and evaluate quality control in the laboratory
- Apply modern clinical methodologies including problem solving and troubleshooting according to predetermined criteria
- Correlate laboratory results to diagnosis of clinical conditions and/or diseases

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED; one year of high school-level (or one college semester) algebra, biology and chemistry required. This program admits students through a petition selection process. See the program's webpage at matc.edu.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemont, IL 60018; 773-714-8880; naacls.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	NATSCI-177	General Anatomy and Physiology ‡ ..... 4 (or) NATSCI-201 Anatomy & Physiology 1‡ and NATSCI-202 Anatomy & Physiology 2 ‡
(1)	NATSCI-186	Introductory Biochemistry ‡ 4
(2)	CLABT-110	Basic Lab Skills 1
(2)	CLABT-111	Phlebotomy ‡ 2
(2)	NATSCI-197	Microbiology ‡ 4
(2)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(2)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level HIST or SOCSCI course
(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)	ENG-196	Oral/Interpersonal Communication ..... 3 (or) Any 200-level ENG or SPEECH course
(4)	CLABT-109	Blood Bank ‡ 4
(4)	CLABT-116	Clinical Chemistry ‡ 4
(4)	CLABT-170	Introduction to Molecular Diagnostics ‡ 2
(5)	CLABT-130	Advanced Hematology ‡ 2
(5)	CLABT-133	Clinical Microbiology ‡ 4
(5)	CLABT-140	Advanced Microbiology ‡ 2
(5)	CLABT-151	Clinical Experience 1 ‡ 3
(6)	CLABT-143	Seminar ‡ 1
(6)	CLABT-152	Clinical Experience 2 ‡ 4

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

The clinical experiences near the program's end are arranged at clinical laboratories. Service work cannot be substituted for the clinical experiences. Service work by students is non-compulsory outside of class hours. Students attending clinical cannot be used as staff replacement. Upon acceptance to the program and at the start of clinical, a formal faculty-led orientation will occur with all program students.

Music Occupations

ASSOCIATE DEGREE | **Program Code: 10-805-1** | Downtown Milwaukee Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Prepare for a career in music by developing your skills as a well-rounded musician. Areas of study include theory fundamentals such as reading, analysis, composition, ear training and more. Students have opportunities to focus on performance or composition courses.

Program Learning Outcomes

- Create an arrangement for an existing piece of music using genre-specific appropriate stylings
- Demonstrate collaborative musicianship skills in rehearsal and performance settings
- Demonstrate proficiency in the use of industry notation software for arranging and composition applications
- Perform music at a professional level
- Develop a marketing plan for musical career promotion that includes current social media trends
- Instruct music students in an individual lesson studio setting

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

( ) Semester order for full-time students.
‡ Prerequisite required.
Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

Creative Arts, Design & Media
Milwaukee Area ***Technical College***

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195**	Written Communication **3**
		(or) ENG-201 English 1 ‡
(1)	**MUSIC-103**	Major Instrument 1 ..... **1**
(1)	**MUSIC-143**	Music Notation 1 ..... **1**
(1)	**MUSIC-150**	Music Theory 1 ..... **4**
(1)	**MUSIC-162**	Music Ensemble 1 ..... **1**
		(or) AUDIO-100 Introduction to Audio Software
(1)	**MUSIC-173**	Music Reading **1**
(1)	**MUSIC-177**	Piano Lab 1 ..... **1**
(1)	**MUSIC-189**	Voice Lab 1 ..... **1**
(1)	**MUSIC-190**	Choir 1 ..... **1**
(1)	**PSYCH-199**	Psychology of Human Relations **3**
		(or) Any 200-level PSYCH course
(2)	**MATH-107**	College Mathematics ‡ **3**
		(or) Any 200-level MATH course
(2)	**MUSIC-101**	Music Business **2**
(2)	**MUSIC-104**	Major Instrument 2 ‡ **1**
(2)	**MUSIC-118**	Music Analysis ‡ **3**
(2)	**MUSIC-120**	Choir 2 ..... **1**
(2)	**MUSIC-144**	Music Notation 2 ..... **1**
(2)	**MUSIC-151**	Music Theory 2 ‡ **4**
(2)	**MUSIC-163**	Music Ensemble 2 ‡ **1**
		(or) AUDIO-125 Advanced Midi Recording ‡
(2)	**MUSIC-178**	Piano Lab 2 ‡ **1**
(3)	**ENG-196**	Oral/Interpersonal Communication **3**
		(or) Any 200-level ENG or SPEECH course
(3)	**MUSIC-105**	Major Instrument 3 ‡ **1**
		(or) MUSIC-108 Film Scoring 1
(3)	**MUSIC-141**	Music Ensemble 3 ‡ **1**
		(or) MUSIC-107 Songwriting 1
(3)	**MUSIC-152**	Composition 1 ‡ **3**
(3)	**MUSIC-167**	Improvisation 1 ‡ **1**
		(or) MUSIC-158 Orchestration 1 ‡
(3)	**MUSIC-174**	Ear Training 1 ‡ **2**
(3)	**MUSIC-181**	Conducting ‡ **1**
(3)	**MUSIC-191**	Performance Techniques 1 ‡ **3**
		(or) MUSIC-182 Composition for Advertising
(4)	**ELECTIVES**	(Three credits needed) **3**
(4)	**MUSIC-106**	Major Instrument 4 ‡ **1**
		(or) MUSIC-147 Songwriting 2 ‡
(4)	**MUSIC-119**	Music Ensemble 4 ‡ **1**
		(or) MUSIC-159 Orchestration 2 ‡
(4)	**MUSIC-125**	Music Studio Teaching Methods ‡ **1**
		(or) MUSIC-109 Film Scoring 2 ‡
(4)	**MUSIC-153**	Composition 2 ‡ **3**
(4)	**MUSIC-184**	Ear Training 2 ‡ **2**
(4)	**SOCSCI-197**	Contemporary American Society **3**
		(or) Any 200-level HIST or SOCSCI course

TOTAL CREDITS: 63

Nutrition and Dietetic Technician

ASSOCIATE DEGREE | **Program Code: 10-313-1** | West Allis Campus

NUTRITION AND DIETETIC TECHNICIAN
matc.edu/academics/pathways

Certificate
- Dietary Manager, p. 191

Associate Degree
- Nutrition and Dietetic Technician, p. 90

Formerly Dietetic Technician

Learn how the science of managing food and nutrition helps promote good health. Dietetic technicians typically work as a member of the food service or healthcare team. MATC's program includes supervised clinical and field experiences. Graduates are eligible for technician membership in the Academy of Nutrition and Dietetics and will receive the title Dietetic Technician Registered (DTR) after completing the national registration exam.

Program Learning Outcomes

- Integrate scientific information and translate research into practice
- Practice beliefs, values, attitudes and behaviors for the professional nutrition and dietetics technician level of practice
- Develop information, products and services for individuals, groups and populations
- Deliver information, products and services to individuals, groups and populations
- Apply principles of management and systems in the provision of services to individuals and organizations

Admission Requirements

High school diploma or GED required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation for Dietetic Education (CADE) of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995; 800-877-1600 or 312-899-0040; education@eatright.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**DIETNT-106** Food Service Sanitation ‡ ^	2
(1)	**DIETNT-109** Food Science ‡	3
(1)	**DIETNT-123** Dietetic Technician Orientation ‡	1
(1)	**DIETNT-151** Nutrition for Dietetics ‡ ^	4
(1)	**DIETNT-160** Medical Terminology for the Dietetic Technician ‡	1
(1)	**ENG-195** Written Communication (or) ENG-201 English 1 ‡	3
(2)	**DIETNT-108** Food Service Management 1 ‡ ^	3
(2)	**DIETNT-118** Food Service Management 1: Coordinated Practice ‡ ^	1
(2)	**DIETNT-124** Medical Nutrition Therapy 1 ‡	3
(2)	**DIETNT-134** Medical Nutrition Therapy 1: Coordinated Practice ‡	1
(2)	**DIETNT-152** Physiology for Dietetics ‡	3
(2)	**DIETNT-156** Nutrition in the Life Cycle ‡	2
(2)	**DIETNT-166** Nutrition in the Life Cycle: Coordinated Practice ‡	1
(2)	**MATH-107** College Mathematics ‡ (or) NATSCI-220 Introduction to Nutritional Science ‡	3
(3)	**DIETNT-125** Medical Nutrition Therapy 2 ‡	4
(3)	**DIETNT-135** Medical Nutrition Therapy 2: Coordinated Practice ‡	2
(3)	**DIETNT-155** Community Nutrition ‡	3
(3)	**DIETNT-157** Food Service Management 2 ‡	3
(3)	**DIETNT-167** Food Service Management 2: Coordinated Practice ‡	2
(3)	**ENG-196** Oral/Interpersonal Communication (or) SPEECH-201 Elements of Speech	3
(4)	**DIETNT-136** Medical Nutrition Therapy Field Experience ‡	3
(4)	**DIETNT-146** Food and Nutrition Management Field Experience ‡	3
(4)	**DIETNT-170** Nutritional Counseling Skills ‡	2
(4)	**PSYCH-199** Psychology of Human Relations (or) PSYCH-231 Introductory Psychology	3
(4)	**SOCSCI-172** Introduction to Diversity Studies (or) SOCSCI-203 Introduction to Sociology	3

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Students completing these four courses are eligible to take the Association of Nutrition and Foodservice Professionals Certified Dietary Manager examination.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Occupational Therapy Assistant

ASSOCIATE DEGREE | **Program Code: 10-514-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Use activities to help patients overcome difficulties with daily living, leisure and/or work skills, providing these services under the supervision of an occupational therapist. This program prepares you to become a Certified Occupational Therapy Assistant (COTA).

Career Outlook

Job placement is usually in hospitals, rehabilitation centers, geriatric centers, schools and homes. The job outlook is good for occupational therapy assistants.

Program Learning Outcomes

- Demonstrate professional behaviors, 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, services, and consumers
- Value life-long learning and the need to keep current with best practice

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school algebra, biology and chemistry are required. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), of the American Occupational Therapy Association (AOTA), 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929; 301-652-AOTA (2682); aota.org/Education-Careers/Accreditation.aspx or acoteonline.org.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	NATSCI-177	General Anatomy and Physiology ‡ .... 4 (or) NATSCI-201 Anatomy and Physiology 1 ‡ and NATSCI-202 Anatomy and Physiology 2 ‡
(1)	OTASST-171	Introduction to Occupational Therapy ‡ 3
(1)	OTASST-172	Medical and Psychosocial Conditions ‡ # 3
(1)	OTASST-173	Activity Analysis and Application ‡ 2
(1)	PSYCH-188	Developmental Psychology ..... 3 (or) PSYCH-238 Lifespan Psychology
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) PSYCH-231 Introductory Psychology
(1)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) Any 200-level HIST or SOCSCI course
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	OTASST-174	OT Performance Skills ‡ 4
(2)	OTASST-176	OT Theory and Practice ‡ 3
(2)	OTASST-178	Geriatric Practice ‡ 3
(2)	OTASST-179	Community Practice ‡ 2
(3)	OTASST-175	Psychosocial Practice ‡ 3
(3)	OTASST-184	OTA Fieldwork ‡ 2
(3)	OTASST-189	OT Physical Rehabilitation Practice ‡ .. 4
(3)	OTASST-190	OT Pediatric Practice ‡ 4
(4)	OTASST-185	OT Practice and Management ‡ # 2
(4)	OTASST-186	OTA Fieldwork 2A ‡ * 5
(4)	OTASST-187	OTA Fieldwork 2B ‡ * 5

TOTAL CREDITS: 64

 # 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.

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

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. Classes are offered face-to-face at the Downtown Milwaukee Campus. Selected courses are available online and in blended/accelerated format. At least 10-credits of legal specialty (PLEGAL) courses must be taken via face-to-face instruction.

Career Outlook

Although this is a growing profession, competition in the job market is keen. Paralegals are required to work under the supervision of an attorney to avoid the unauthorized practice of law. Paralegals may not provide legal services directly to the public, except as permitted by law.

Program Learning Outcomes

- 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
- Transfer of legal specialty coursework credit (PLEGAL designated courses) is accepted, subject to review by the Program Coordinator for course compatibility, only from ABA approved paralegal programs or from accredited law schools. Transfer is limited to a maximum of 15 credits.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved by the American Bar Association, 321 North Clark Street, Chicago, IL 60654; 312-988-5616; americanbar.org/groups/paralegals/.

Start Dates: August/January/June

Community & Human Services
MILWAUKEE AREA ***Technical College***

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**BADM-106**	MS Office for Business Applications **3**
(1)	**ECON-195**	Economics ..... **3** (or) Any 200-level ECON course
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 201 ‡
(1)	**OFTECH-103**	Keyboard and Keypad **1**
(1)	**PLEGAL-101**	Introduction to Paralegalism **3**
(2)	**ACCTG-102**	Basic Office Accounting **3**
(2)	**BADM-165**	Legal Environment of Business **3**
(2)	**ENG-196**	Oral/Interpersonal Communication ..... **3** (or) Any 200-level ENG or SPEECH course
(2)	**PLEGAL-103**	Legal Research ‡ **3**
(2)	**PLEGAL-123**	Corporate Practice Systems ‡ **3**
(2)	**PLEGAL-140**	Legal Interviewing/Investigation ‡ **3**
(3)	**MATH-123**	Math With Business Applications ‡ ..... **3** (or) Any 200-level MATH course
(3)	**PLEGAL-105**	Civil Procedure ‡ **3**
(3)	**PLEGAL-107**	Legal Writing ‡ **3**
(3)	**PLEGAL-114**	Trusts and Estates – Probate Systems ‡ **3**
(3)	**PLEGAL-121**	Domestic Relations and Divorce Practice Systems ‡ **3**
(3)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(4)	**NATSCI-112**	Principles of Sustainability ..... **3** (or) Any 200-level NATSCI course
(4)	**PLEGAL-111**	Litigation Practice Systems ‡ **3**
(4)	**PLEGAL-116**	Real Estate Law and Practice ‡ **3**
(4)	**PLEGAL-118**	Criminal Practice ‡ **3**
(4)	**SOCSCI-197**	Contemporary American Society ..... **3** (or) Any 200-level SOCSCI course

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

It is recommended that PLEGAL-103 be taken before PLEGAL-107, and that PLEGAL-105 be taken before PLEGAL-111.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Photography

ASSOCIATE DEGREE | **Program Code: 10-203-1** | Downtown Milwaukee Campus

PHOTOGRAPHY
matc.edu/academics/pathways

Technical Diploma
• Digital Imaging, p. 135

Associate Degree
• Photography, p. 93

Use professional equipment and methods to master the skills necessary for this highly visual, creative and exacting profession. MATC's laboratory/studio areas have state-of-the-art traditional and digital cameras, lighting, processing and finishing equipment. Program requirements include an internship for real-world experience.

Career Outlook

Photographers work in advertising, photojournalism, and industrial and portrait photography. Employment opportunities also include equipment sales.

Program Learning Outcomes

- Apply the principles of design and storytelling to develop media products and services
- Demonstrate proficiency in the use of media software, tools and technology
- Implement creative solutions from concept through completion
- Communicate creative rationale in formal and informal settings

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in the Mac OS
- Sight ability without impairment
- Must have the ability to lift, bend, and move equipment
- Must own a DSLR camera

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	PHOTO-100	Introduction to Digital Photography ^ 1
(1)	PHOTO-101	Digital Fundamental Photography ^ ... 3
(1)	PHOTO-107	Photographic Trends ^ 1
(1)	PHOTO-141	Photoshop for Photographers 1 ^ 3
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(2)	MATH-123	Math With Business Applications ‡ ^ .. 3 (or) Any 200-level MATH course
(2)	PHOTO-108	Photographic Lighting ‡ ^ 3
(2)	PHOTO-130	Photographic Composition ^ 3
(2)	PHOTO-139	Measurement Techniques ‡ ^ 3
(2)	PHOTO-142	Photoshop for Photographers 2 ‡ ^ ... 3
(3)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(3)	PHOTO-103	Digital Photography ‡ 3
(3)	PHOTO-106	View Camera Techniques ‡ 3
(3)	PHOTO-121	Commercial Photography ‡ 3
(3)	PHOTO-124	Portraiture ‡ 3
(3)	SOCSCI-103	Think Critically and Creatively ..... 3 (or) Any 200-level SOCSCI or HIST course
(4)	ECON-195	Economics ..... 3 (or) Any 200-level ECON course
(4)	PHOTO-114	Photographic Portfolio ‡ 3
(4)	PHOTO-166	Photographic Management ‡ 1
(4)	PHOTO-173	Photojournalism ‡ 3
(4)	PHOTO-180	DSLR Video ‡ 3
(4)	PHOTO-190	Photography Internship ‡ 1

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Digital Imaging technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Physical Therapist Assistant

ASSOCIATE DEGREE | **Program Code: 10-524-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Work with physical therapy patients in a hospital, rehabilitation center, school, clinic or other healthcare setting. Under the supervision of a physical therapist, duties include implementing treatment programs, teaching patients to perform exercises and daily living activities, and reporting the patient's progress.

Career Outlook

Employment is projected to grow due to increases in the geriatric population and the increased need for support personnel in this field.

Program Learning Outcomes

- Demonstrate clear and collaborative communication with patients, families, and healthcare team
- Exhibit behaviors and conduct that reflect respect and sensitivity according to physical therapy practice standards
- Function under the supervision of a physical therapist in a safe, legal, ethical manner to ensure the safety of patients, self, and others throughout the clinical interaction

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school-level algebra, biology and chemistry or physics are required. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, VA 22314; 800-999-2782 or 703-684-2782; capteonline.org.

Start Date: January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**NATSCI-177**	General Anatomy and Physiology ‡ .... **4** (or) NATSCI-201 Anatomy & Physiology 1 ‡
(1)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(1)	**PTASST-139**	PTA Patient Interventions ‡ **4**
(1)	**PTASST-140**	PTA Professional Issues 1 ‡ **2**
(1)	**PTASST-156**	PTA Applied Kinesiology 1 ‡ **4**
(2)	**ENG-196**	Oral/Interpersonal Communication ..... **3** (or) Any 200-level ENG or SPEECH course
(2)	**PTASST-142**	PTA Therapeutic Exercise ‡ **3**
(2)	**PTASST-143**	PTA Therapeutic Modalities ‡ **4**
(2)	**PTASST-145**	PTA Principles of Musculoskeletal Rehabilitation ‡ **4**
(2)	**PTASST-157**	PTA Applied Kinesiology 2 ‡ **3**
(3)	**PTASST-144**	PTA Principles of Neuromuscular Rehabilitation ‡ **4**
(3)	**PTASST-146**	PTA Management of Cardiopulmonary and Integumentary Conditions ‡ **3**
(3)	**PTASST-147**	PTA Clinical Practice 1 ‡ **2**
(3)	**PTASST-148**	PTA Clinical Practice 2 ‡ **3**
(3)	**SOCSCI-172**	Introduction to Diversity Studies ..... **3** (or) Any 200-level HIST or SOCSCI course
(4)	**MATH-107**	College Mathematics ‡ ..... **3** (or) Any 200-level MATH course
(4)	**PTASST-149**	PTA Rehabilitation Across the Lifespan ‡ **2**
(4)	**PTASST-150**	PTA Professional Issues 2 ‡ **2**
(4)	**PTASST-151**	PTA Clinical Practice 3 ‡ **5**

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Practical Nursing – LPN-RN Educational Progression

ASSOCIATE DEGREE | **Program Code: 10-543-10** | Downtown Milwaukee, Mequon campuses

Through this program, an LPN can prepare for a registered nursing career, followed by options for RN-BSN programs. Contact an MATC advisor for information.

If you are a Licensed Practical Nurse interested in a career as a Registered Nurse, this program is for you. Your work experience may earn you advanced-standing credits. Graduates are eligible to take the RN Licensure Exam (NCLEX-RN).

Employers will expect graduates to have a plan for completing a Bachelor of Science in Nursing (BSN). Some BSN courses may be taken concurrently with associate degree courses.

Program Learning Outcomes

- Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving professional identity as a nurse committed to evidence-based practice, caring, advocacy and quality care
- Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts

(For full description, see matc.edu.)

Admission Requirements

Must have 2,000 hours work experience within the last five years as an LPN in a healthcare setting with direct patient care responsibilities. Must hold a current Wisconsin Practical Nurse License. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; 404-975-5000; acenursing.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ENG-195	Written Communication 3
		(or) ENG-201 English 1 ‡
(1)	PSYCH-199	Psychology of Human Relations 3
		(or) PSYCH-238 Lifespan Psychology
(1)	SOCSCI-172	Introduction to Diversity Studies 3
		(or) Any 200-level SOCSCI or HIST course
(2)	ENG-196	Oral/Interpersonal Communication 3
		(or) Any 200-level ENG or SPEECH course
(2)	NATSCI-177	General Anatomy and Physiology ‡ 4
		(or) NATSCI-201 Anatomy and Physiology 1 ‡
(2)	NATSCI-197	Microbiology ‡ 4
(3)	NATSCI-179	Advanced Anatomy and Physiology ‡ ... 4
		(or) NATSCI-202 Anatomy and Physiology 2 ‡
(3)	NATSCI-186	Introductory Biochemistry ‡ 4
(4)	NRSAD-109	Nursing Complex Health Alterations 1 ‡ 3
(4)	NRSAD-110	Nursing Mental Health Community Concepts ‡ 2
(4)	NRSAD-191	Nursing Clinical Skill Development ‡ .. 2
(5)	NRSAD-111	Nursing Intermediate Clinical Practice ‡ 3
(5)	NRSAD-112	Nursing Advanced Skills ‡ 1
(6)	NRSAD-113	Nursing Complex Health Alterations 2 ‡ 3
(6)	NRSAD-114	Nursing Management Concepts ‡ 2
(6)	NRSAD-115	Nursing Advanced Clinical Practice ‡ 3
(6)	NRSAD-116	Nursing Clinical Transition ‡ 2
		TOTAL CREDITS: 49

Note: Licensure as LPN required for this program.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Quality Engineering Technology

ASSOCIATE DEGREE | **Program Code: 10-623-9** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Students prepare to become technicians who ensure that products, components, materials and processes meet quality and safety standards in a wide range of industries. This program emphasizes quality methods that reduce waste and improve business/manufacturing processes.

Career Outlook

With the growing focus on quality standards across all facets of business, the need for well-trained quality assurance personnel has increased.

Program Learning Outcomes

- Apply total quality control concepts: inspection methods, data collection and application of sampling plans, quality cost, and quality audits
- Apply appropriate problem-solving methodologies – Lean, Six Sigma, 8D
- Assure quality systems are working and take corrective action through continuous improvement
- Characterize quality systems currently used in industry
- Apply analytical mathematics including basic and advanced statistical techniques
- Analyze cost components to conduct opportunity assessment, cost/benefit analysis, and project selection

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**MATH-115**	College Technical Mathematics 1 ‡ ..... **5** (or) MATH-201 College Algebra ‡
(1)	**MCDESG-114**	SolidWorks 1 ..... **2** (or) MCDESG-133 Inventor 1 (or) MCDESG-135 PTC Creo (Pro/E) 1
(1)	**QETECH-116**	Engineering Economic Analysis ‡ **3**
(1)	**SOCSCI-197**	Contemporary American Society ..... **3** (or) Any 200-level HIST or SOCSCI course
(2)	**BADM-104**	Business Statistics ‡ **3**
(2)	**ENG-196**	Oral/Interpersonal Communication .... **3** (or) Any 200-level ENG or SPEECH course
(2)	**MATH-116**	College Technical Mathematics 2 ‡ ..... **4** (or) MATH-202 Trigonometry ‡
(2)	**MTRLS-105**	Statistical Process Analysis **2**
(2)	**QETECH-138**	Introduction to Quality Engineering ‡ **3**
(3)	**ECON-195**	Economics ..... **3** (or) Any 200-level ECON course
(3)	**ELECTIVES**	(Three credits needed) **3**
(3)	**MGTDEV-188**	Project Management **3**
(3)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(3)	**QETECH-118**	Lean Principles **3**
(3)	**QETECH-132**	Six Sigma Green Belt 1 ‡ **3**
(4)	**LOGMGT-146**	Operations Management **3**
(4)	**MGTDEV-192**	Managing for Quality **3**
(4)	**QETECH-134**	Six Sigma Green Belt 2 ‡ **3**
(4)	**QETECH-142**	Six Sigma Green Belt Project ‡ **3**
(4)	**QETECH-144**	Supplier Quality Assurance ‡ **3**

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Curriculum requirements for this Associate in Applied Science program are subject to change.

Start Dates: August and January

STEM
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Radiography

ASSOCIATE DEGREE | **Program Code: 10-526-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Become part of the healthcare team as a radiographer working in medical imaging departments in medical clinics, hospitals and private offices. This is a full-time program with course sequencing that encompasses four semesters, a six-week summer session and six-week externship. Graduates are eligible for certification through American Registry of Radiologic Technologists (ARRT).

Career Outlook

Career areas include diagnostic radiology, bedside and trauma procedures, pediatric radiography and special procedures.

Program Learning Outcomes

- Carry out the production and evaluation of radiographic images
- Practice radiation safety principles
- Provide quality patient care
- Model professional and ethical behavior consistent with the ARRT Code of Ethics
- Apply critical thinking and problem solving skills in the practice of diagnostic radiography

Admission Requirements

High school diploma or GED, and one year of high school-level biology, chemistry (or physics) and algebra required. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 North Wacker Drive, Suite 2850, Chicago, IL 60606; 312-704-5300; jrcert.org.

Start Date: August

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**NATSCI-177**	General Anatomy and Physiology ‡ .... **4** (or) NATSCI-201 Anatomy & Physiology 1‡ and NATSCI-202 Anatomy & Physiology 2 ‡
(1)	**RADT-149**	Radiographic Procedures 1 ‡ **5**
(1)	**RADT-158**	Introduction to Radiography ‡ **3**
(1)	**RADT-159**	Radiographic Imaging ‡ **3**
(1)	**RADT-168**	Radiography Clinical 1 ‡ **2**
(2)	**ENG-197**	Technical Reporting ..... **3** (or) Any 200-level ENG or SPEECH course
(2)	**RADT-191**	Radiographic Procedures 2 ‡ **5**
(2)	**RADT-192**	Radiography Clinical 2 ‡ **3**
(2)	**RADT-230**	Advanced Radiographic Imaging **2**
(3)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) Any 200-level PSYCH course
(3)	**RADT-189**	Radiographic Pathology ‡ **1**
(3)	**RADT-193**	Radiography Clinical 3 ‡ **3**
(3)	**RADT-194**	Imaging Equipment Operation **3**
(3)	**RADT-199**	Radiography Clinical 4 ‡ **3**
(3)	**RADT-231**	Imaging Modalities ‡ **2**
(4)	**RADT-174**	ARRT Certification Seminar ‡ **2**
(4)	**RADT-190**	Radiography Clinical 5 ‡ **2**
(4)	**RADT-195**	Radiographic Quality Analysis **2**
(4)	**RADT-197**	Radiation Protection and Biology ‡ **3**
(4)	**RADT-198**	Radiography Clinical 6 ‡ **2**
(4)	**SOCSCI-103**	Think Critically and Creatively ..... **3** (or) Any 200-level SOCSCI course

TOTAL CREDITS: 62

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Real Estate

ASSOCIATE DEGREE | **Program Code: 10-194-1** | West Allis Campus

REAL ESTATE
matc.edu/academics/pathways

Certificate
- Property Management, p. 199
- Real Estate Salesperson, p. 200

Technical Diploma
- Real Estate Broker Associate, p. 171

Associate Degree
- Real Estate, p. 98

This comprehensive, state-approved program prepares you for a range of careers in the real estate field, including sales and brokerage, building inspection and property management. Courses that meet educational requirements to qualify for state licensing exams are part of the curriculum.

Career Outlook

Options include working for real estate companies or as a self-employed real estate specialist. A willingness to work evenings and weekends is important.

Program Learning Outcomes

- Prepare real estate contracts and documents in accordance with applicable laws
- Apply mathematical, financing and investment principles to real estate transactions
- Apply concepts of property valuation to real estate transactions
- Identify building construction and environmental issues in real estate transactions
- Manage real property consistent with applicable laws
- Apply real estate sales and marketing strategies

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved by the State of Wisconsin Department of Safety and Professional Services, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications 3
(1)	ENG-195	Written Communication .... 3 (or) ENG-201 English 1 ‡
(1)	RLEST-180	Principles of Real Estate ^ * + ... 3
(1)	RLEST-182	Real Estate Law ^ + ... 3
(1)	RLEST-189	Introduction to Home Inspection 3
(2)	MATH-123	Math With Business Applications ‡ .... 3 (or) Any 200-level MATH course
(2)	RLEST-181	Principles of Commercial Real Estate ‡ 3
(2)	RLEST-188	Listing, Selling and Sales Tools 3
(2)	RLEST-190	Introduction to Property Management * 3
(3)	BADM-110	Business Communications With Technology 3
(3)	ECON-195	Economics .... 3 (or) Any 200-level ECON course
(3)	ENG-196	Oral/Interpersonal Communication .... 3 (or) Any 200-level ENG or SPEECH course
(3)	PSYCH-199	Psychology of Human Relations .... 3 (or) Any 200-level PSYCH course
(3)	RLEST-184	Real Estate Mortgage Processing 3
(3)	RLEST-185	Real Estate Investment Principles 3
(4)	ACCTG-110	Financial Accounting 3
(4)	BADM-134	Business Organization and Management 3
(4)	MKTG-102	Marketing Principles 3
(4)	RLEST-183	Real Estate Broker Preparation ^ 3
(4)	RLEST-187	Broker Management ‡ ^ 3

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Real Estate Broker Associate technical diploma.

** Counts toward earning the Property Management certificate.*

+ Counts toward earning the Real Estate Salesperson certificate.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Registered Nursing

ASSOCIATE DEGREE | **Program Code: 10-543-1** | Downtown Milwaukee, Mequon campuses

The Practical Nursing technical diploma ladders into this associate degree, followed by many choices for RN-BSN programs. Contact an MATC advisor for information.

Prepare for a registered nursing career at MATC. Theory and lab courses on campus set the foundation for your clinical practice. Simulation and guided practice in clinical settings further prepare you for practice as an RN. Graduates are eligible to take the RN licensure exam (NCLEX-RN). Employers will expect graduates to have plans to earn a Bachelor of Science in Nursing (BSN). Some BSN courses may be taken concurrently with associate degree courses.

Program Learning Outcomes

- Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving professional identity as a nurse committed to evidence-based practice, caring, advocacy and quality care
- Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts
- Integrate social, mathematical, and physical sciences, pharmacology, and pathophysiology in clinical decision-making

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school biology and chemistry are required. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; 404-975-5000; acenursing.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area **Technical College**

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	NATSCI-177	General Anatomy and Physiology ‡ .... 4 (or) NATSCI-201 Anatomy and Physiology 1 ‡
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) PSYCH-238 Lifespan Psychology
(1)	SOCSCI-172	Introduction to Diversity Studies ..... 3 (or) SOCSCI-203 Introduction to Sociology (or) Any 200-level SOCSCI or HIST course
(2)	ENG-196	Oral/Interpersonal Communication .... 3 (or) Any 200-level ENG or SPEECH course
(2)	NATSCI-179	Advanced Anatomy and Physiology ‡ .. 4 (or) NATSCI-202 Anatomy and Physiology 2 ‡
(2)	NATSCI-186	Introductory Biochemistry ‡..... 4
(2)	NATSCI-197	Microbiology ‡..... 4
(3)	NRSAD-101	Nursing Fundamentals ‡..... 2
(3)	NRSAD-102	Nursing Skills ‡ 3
(3)	NRSAD-103	Nursing Pharmacology ‡ 2
(3)	NRSAD-104	Nursing: Introduction to Nursing Practice ‡..... 2
(4)	NRSAD-105	Nursing Health Alterations ‡ 3
(4)	NRSAD-106	Nursing Health Promotion ‡..... 3
(4)	NRSAD-107	Nursing: Clinical Care Across the Lifespan ‡ 2
(4)	NRSAD-108	Nursing: Introduction to Clinical Management ‡ 2
(5)	NRSAD-109	Nursing Complex Health Alterations 1 ‡ 3
(5)	NRSAD-110	Nursing Mental Health Community Concepts ‡ 2
(5)	NRSAD-111	Nursing Intermediate Clinical Practice ‡..... 3
(5)	NRSAD-112	Nursing Advanced Skills ‡..... 1
(6)	NRSAD-113	Nursing Complex Health Alterations 2 ‡ 3
(6)	NRSAD-114	Nursing Management Concepts ‡..... 2
(6)	NRSAD-115	Nursing Advanced Clinical Practice ‡.... 3
(6)	NRSAD-116	Nursing Clinical Transition ‡ 2

TOTAL CREDITS: 66

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Nursing Associate Degree.

Respiratory Therapist

ASSOCIATE DEGREE | **Program Code: 10-515-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Enhance patient care by evaluating and treating people with lung and heart disease. Respiratory therapists' duties include administering treatments, recommending therapeutic interventions and operating life support systems. Graduates are qualified to sit for the National Board for Respiratory Care (NBRC) examinations.

Career Outlook

Respiratory therapists work in acute and subacute hospitals, diagnostic laboratories, rehabilitation facilities, clinics and home care.

Program Learning Outcomes

- 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

High school diploma or GED, and one year of high school-level biology and chemistry are required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is fully accredited by the Commission on Accreditation for Respiratory Care (CoARC), 264 Precision Boulevard, Telford, TN 37690; 812-283-2835; coarc.com.
Accreditation is based on recommendation of the Commission on Accreditation for Respiratory Care.

Start Date: August

Healthcare Services
Milwaukee Area ***Technical College***

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ELECTIVES** (Two credits needed)	**2**
(1)	**ENG-195** Written Communication (or) ENG-201 English 1 ‡	**3**
(1)	**NATSCI-177** General Anatomy and Physiology ‡ (or) NATSCI-201 Anatomy & Physiology 1‡ and NATSCI-202 Anatomy & Physiology 2 ‡	**4**
(1)	**PSYCH-199** Psychology of Human Relations (or) Any 200-level PSYCH course	**3**
(1)	**RESPC-111** Respiratory Survey ‡	**3**
(1)	**RESPC-171** Respiratory Therapeutics 1 ‡	**3**
(1)	**RESPC-175** Respiratory Clinical 1 ‡	**2**
(2)	**ENG-196** Oral/Interpersonal Communication (or) Any 200-level ENG or SPEECH course	**3**
(2)	**NATSCI-197** Microbiology ‡	**4**
(2)	**RESPC-112** Respiratory Airway Management ‡	**2**
(2)	**RESPC-172** Respiratory Therapeutics 2 ‡	**3**
(2)	**RESPC-173** Respiratory Pharmacology ‡	**3**
(2)	**RESPC-174** Respiratory Cardiac Physiology ‡	**3**
(2)	**SOCSCI-172** Introduction to Diversity Studies (or) Any 200-level SOCSCI course	**3**
(3)	**RESPC-113** Respiratory Life Support ‡	**3**
(3)	**RESPC-176** Respiratory Disease ‡	**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/Cardio Diagnostics ‡	**3**
(4)	**RESPC-182** Respiratory Clinical 4 ‡	**3**
(4)	**RESPC-183** Respiratory Clinical 5 ‡	**3**

TOTAL CREDITS: 64

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Supply Chain Management

ASSOCIATE DEGREE | **Program Code: 10-182-1** | Oak Creek Campus

SUPPLY CHAIN MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
- Supply Management, p. 176
- Transportation – Logistics, p. 179

Associate Degree
- Supply Chain Management, p. 101

If you want to pursue a career in logistics, transportation, distribution, purchasing, production or inventory control, this program will interest you. Areas of study include supply chains and quality management. The program's blended format is 50% online and 50% classroom.

Career Outlook

The projected employment outlook is steady for the field of supply chain management. Positions may require travel and overtime.

Program Learning Outcomes

- Define (plan) operations, transportation, procurement and distribution
- Measure operations, transportation, procurement and distribution
- Analyze operations, transportation, procurement and distribution
- Improve operations, transportation, procurement and distribution
- Control operations, transportation, procurement and distribution

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) BADM-106	MS Office for Business Applications ^ *	3
(1) ENG-195	Written Communication	3
	(or) ENG-201 English 1 ‡	
(1) INDVTS-102	Career Assessment/Portfolio Development ^ *	3
(1) LOGMGT-146	Operations Management ^ *	3
(1) LOGMGT-164	Supply Chain Management ^ *	3
(2) ECON-195	Economics	3
	(or) Any 200-level ECON course	
(2) ENG-197	Technical Reporting	3
	(or) Any 200-level ENG or SPEECH course	
(2) LOGMGT-170	Procurement ^	3
(2) LOGMGT-190	Logistics *	3
(2) MKTG-107	Customer Experience	3
(3) LOGMGT-105	Enterprise Resource Planning	3
(3) LOGMGT-144	Production Planning and Inventory Control ^	3
(3) LOGMGT-184	International Logistics – Transportation/Documentation *	3
(3) MATH-123	Math With Business Applications ‡	3
	(or) Any 200-level MATH course	
(3) MKTG-144	Client Services	3
(4) ELECTIVES	(Three credits needed)	3
(4) LOGMGT-106	eCommerce Logistics	3
(4) LOGMGT-191	Integrated Supply Chain Management ‡	3
(4) MKTG-102	Principles of Marketing	3
	(or) ACCTG-125 Cost Accounting ‡	
	(or) BADM-104 Business Statistics ‡	
(4) PSYCH-199	Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	

TOTAL CREDITS: 60

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

^ Counts toward earning the Supply Management technical diploma.

** Counts toward earning the Transportation – Logistics technical diploma.*

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Surgical Technology

ASSOCIATE DEGREE | **Program Code: 10-512-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Surgical technologists work under direct supervision to facilitate safe, effective invasive surgical procedures. You will learn the application of sterile and aseptic technique to help ensure that the operating room environment is safe and equipment functions properly. Graduates 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.

Program Learning Outcomes

- Apply healthcare and technological science principles to the perioperative environment
- Maintain principles of sterile technique in the surgical environment
- Provide a safe, efficient, and supportive environment for the patient
- Prepare the patient, operating room and surgical team for the preoperative phase

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school-level algebra, biology and chemistry (or college equivalent) are required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater, FL 33763; 727-210-2350; caahep.org/Accreditation/CAAHEP-Accreditation-Process.aspx.
Accreditation is based on recommendation of the Accreditation Review Committee on Education in Surgical Technology.

Start Dates: August and January

Healthcare Services
MILWAUKEE AREA ***Technical College***

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
NATSCI-177	General Anatomy and Physiology ‡ *	4
(1) ENG-195	Written Communication (or) ENG-201 English 1 ‡	3
(1) NATSCI-179	Advanced Anatomy and Physiology ‡ (or) NATSCI-201 Anatomy and Physiology 1 ‡ and NATSCI-202 Anatomy and Physiology 2 ‡	4
(1) NATSCI-197	Microbiology ‡	4
(1) PSYCH-199	Psychology of Human Relations (or) Any 200-level PSYCH course	3
(1) SOCSCI-172	Introduction to Diversity Studies (or) Any 200-level SOCSCI course	3
(2) HEALTH-101	Medical Terminology	3
(2) SURGT-125	Introduction to Surgical Technology ‡	4
(2) SURGT-126	Surgical Tech Fundamentals 1 ‡	4
(2) SURGT-127	Exploring Surgical Issues ‡	2
(2) SURGT-129	Surgical Pharmacology ‡	2
(3) ENG-197	Technical Reporting (or) Any 200-level ENG or SPEECH course	3
(3) SURGT-128	Surgical Tech Fundamentals 2 ‡	4
(3) SURGT-130	Surgical Skills Application ‡	2
(3) SURGT-137	Surgical Tech Clinical Practice 1 ‡	4
(3) SURGT-140	Surgical Interventions 1A ‡	2
(4) SURGT-138	Surgical Tech Clinical Practice 2 ‡	4
(4) SURGT-139	Surgical Tech Clinical Practice 3 ‡	4
(4) SURGT-141	Surgical Interventions 1B ‡	2
(4) SURGT-142	Surgical Interventions II ‡	4

TOTAL CREDITS: 65

** Taken prior to first-semester courses.*

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Technical Studies: Apprentice

ASSOCIATE DEGREE | **Program Code: 10-499-5** | All campuses

MATC's Technical Studies: Apprentice associate degree program is 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 also may be considered if you possess documentation of having served an apprenticeship recognized by the U.S. Department of Labor. With proper documentation, 36 selected credits will be awarded toward the associate degree.

Admission Requirements

- A high school diploma or GED
- Minimum of 400 hours of related apprenticeship instruction in a Wisconsin Technical College System college or other accredited institution
- Interview with program coordinator

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
INDVTS-102	Career Assessment and Portfolio Development	**3**
APPRENTICESHIP		**36**

A Wisconsin journey-level certificate from an apprenticeship program that included a minimum of 400 hours of paid, related instruction in a Wisconsin technical college or other accredited institution.

ECON-195	Economics	**3**
ENG-196	Oral/Interpersonal Communication	**3**
ENG-197	Technical Reporting	**3**
MATH-107	College Mathematics ‡	**3**
NATSCI-112	Principles of Sustainability	**3**
PSYCH-199	Psychology of Human Relations	**3**
SOCSCI-103	Think Critically and Creatively	**3**

TOTAL CREDITS: 60

‡ Prerequisite required.

Curriculum requirements are subject to change.

A minimum of 25% of total program requirements must be earned at MATC.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Television & Video Production

ASSOCIATE DEGREE | **Program Code: 10-701-1** | Downtown Milwaukee Campus

TELEVISION & VIDEO PRODUCTION
matc.edu/academics/pathways

Technical Diploma
• TV/Video Studio Production Assistant, p. 182

Associate Degree
• Television & Video Production, p. 104

Prepare for a career in the production, operation and programming areas of broadcast television, cable, or corporate and commercial video. You will gain hands-on experience in the high-definition studios of Milwaukee PBS, a leader in HDTV production.

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.

Program Learning Outcomes

- Apply the principles of design and storytelling to develop media products and services
- Demonstrate proficiency in the use of media software, tools and technology
- Implement creative solutions from concept through completion
- Communicate creative rationale in formal and informal settings
- Implement project management skills to meet customer and market demands
- Apply effective and ethical business practices

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra
- Ability to work outside normal school hours

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ^ ..... 3 (or) ENG-201 English 1 ‡
(1)	EPROD-150	Introduction to eProduction ^ 3
(1)	PSYCH-199	Psychology of Human Relations ..... 3 (or) Any 200-level PSYCH course
(1)	TV-101	TV/Video Studio Production Techniques ‡ ^ 4
(1)	TV-104	TV Studio/Field Set Design ‡ ^ ..... 2 (or) TV-108 TV Studio Lighting Techniques
(1)	TV-181	Video in Society ^ 1
(2)	ENG-197	Technical Reporting ..... 3 (or) Any 200-level ENG or SPEECH course
(2)	TV-105	TV/Video Field Production Techniques ‡ ... 4
(2)	TV-107	Script Writing for Visual Media ^ 3
(2)	TV-112	Storytelling Via Post-Production ‡ 3
(2)	TV-121	TV and Video Production Workshop 1 ‡ ^ ... 3
(3)	MATH-107	College Mathematics ‡ ^ ..... 3 (or) Any 200-level MATH course
(3)	TV-109	Techniques for Field Audio Acquisition ‡ ... 2
(3)	TV-110	Advanced Production Techniques ‡ 4
(3)	TV-119	Operational Broadcast Engineering ‡ ^ 3
(3)	TV-142	Non-Linear Video Editing and Authoring ‡ 3
(4)	EPROD-151	Data Content Management/ Implementation ^ 3
(4)	TV-111	Field Lighting, Gripping and Gaffing ‡ ... 2
(4)	TV-115	Advanced Broadcast Program Production ‡ 4
(4)	TV-123	TV and Video Production Co-Op 1 ‡ ^ ... 3
(4)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 62

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the TV/Video Studio Production Assistant technical diploma.
Program curriculum requirements are subject to change.
This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Date: August

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Web & Digital Media Design

ASSOCIATE DEGREE | **Program Code: 10-201-3** | Downtown Milwaukee Campus

WEB & DIGITAL MEDIA DESIGN
matc.edu/academics/pathways

Technical Diploma
• Front-End Web Developer, p. 147

Associate Degree
• Web & Digital Media Design, p. 105

MATC's coursework in interface design, responsive web design, user experience, and website development through coding with HTML, CSS, JavaScript, PHP/MySQL, etc., offer a comprehensive background in web design and front-end web development.

Career Outlook

Skills in web design, front-end web development and user experience are in demand and are projected to continue to grow rapidly in the next decade.

Program Learning Outcomes

- Apply the principles of design to develop strategic marketing and communication products and services
- Demonstrate proficiency in the use of design software, tools and technology
- Implement creative solutions from concept through completion using a formal process
- Apply effective legal and ethical business practices and project management skills
- Communicate artwork rationale in formal and informal settings

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in operating systems, word processing and the internet

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195** Written Communication ^	3
(1)	**ITDEV-117** Logic and Problem-Solving ^	3
(1)	**WEBDEV-102** Introduction to Digital Media ^	3
(1)	**WEBDEV-114** Web Development With HTML/CSS ^	3
(1)	**WEBDEV-119** Web Design Overview ^	3
(2)	**CAS-143** User Experience UE 2.0	3
(2)	**MATH-123** Math With Business Applications ‡	3
(2)	**WEBDEV-120** Audio and Video Production for the Web	3
(2)	**WEBDEV-123** Interactive Design ‡ ^	3
(2)	**WEBDEV-124** Database Web Design With PHP and MySQL ‡ ^	3
(3)	**ENG-197** Technical Reporting	3
(3)	**WEBDEV-132** Rich Media for the Web ‡	3
(3)	**WEBDEV-133** Content Management Systems ‡ ^	3
(3)	**WEBDEV-134** Responsive Web Design ‡ ^	3
(3)	**WEBDEV-135** User Experience for the Web ‡	3
(4)	**MKTG-165** Digital Marketing ^	3
(4)	**PSYCH-199** Psychology of Human Relations	3
(4)	**SOCSCI-197** Contemporary American Society	3
(4)	**WEBDEV-140** Web Development With JavaScript and jQuery ‡ ^	3
(4)	**WEBDEV-198** Internship ‡	1
(4)	**WEBDEV-199** Portfolio ‡	3

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Front-End Web Developer technical diploma.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Welding Technology

ASSOCIATE DEGREE | **Program Code: 10-621-1** | West Allis Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This program combines practical, theoretical and technical training in welding fabrication. Advanced courses deal with application of welding codes to develop the expertise needed to become a Certified Associate Welding Inspector or Certified Welding Inspector.

Career Outlook

Demand is high for welders with current skills. Graduates typically find employment as welding technicians, robotic welding technicians, quality assurance inspectors, technical sales reps and weld test conductors.

Program Learning Outcomes

- Demonstrate industry-recognized safety practices
- Interpret welding drawings
- Produce gas metal arc welds (GMAW)
- Produce flux core arc welds (FCAW)
- Produce gas tungsten arc welds (GTAW)
- Produce shielded metal arc welds (SMAW)
- Produce welds using robotic arc welding equipment
- Maintain robotic arc welding cells and equipment
- Form materials to detailed drawings

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	**MATH-115** College Technical Mathematics 1 ‡	5
	(or) MATH-113 College Technical Mathematics 1A‡ and MATH-114 College Technical Mathematics 1B ‡	
(1)	**WELDTC-101** Welding Theory 1	2
(1)	**WELDTC-107** Fabrication Graphics	3
(1)	**WELDTC-111** Welding Practice 1	4
(1)	**WELDTC-181** Welding Technology Orientation	1
(2)	**ENG-197** Technical Reporting	3
	(or) Any 200-level ENG or SPEECH course	
(2)	**MATH-116** College Technical Mathematics 2 ‡	4
(2)	**WELDTC-102** Welding Theory 2	3
(2)	**WELDTC-105** Weldability of Materials ‡	3
(2)	**WELDTC-112** Welding Practice 2 ‡	4
(3)	**MATRLS-102** Material Testing	3
(3)	**SOCSCI-103** Think Critically and Creatively	3
	(or) Any 200-level HIST or SOCSCI course	
(3)	**WELDTC-113** Welding Techniques 1 ‡	3
(3)	**WELDTC-140** Manufacturing Applications for Robots	4
(4)	**MATRLS-151** Metallurgy and Materials Science	3
(4)	**PSYCH-199** Psychology of Human Relations	3
	(or) Any 200-level PSYCH course	
(4)	**WELDTC-114** Welding Techniques 2 ‡	3
(4)	**WELDTC-135** Automated Welding Processes ‡	4

TOTAL CREDITS: 61

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

This Associate in Applied Science program will transfer to one or more four-year institutions.

Official Wisconsin Technical College System program title: Industrial Welding Technician.

TECHNICAL DIPLOMAS

If you are interested in preparing for a specific occupation or upgrading your job skills, MATC offers the following programs that lead to a technical diploma. Most technical diploma programs can be completed within one year of full-time study; some programs require one semester and some are two-year full-time programs.

Accounting Assistant, p. 108
Advanced Metal Fabrication, p. 109
Aesthetician, p. 110
Appliance Technician, p. 111
Architectural Woodworking/ Cabinetmaking, p. 112
Audio Engineer, p. 113
Auto Collision Repair and Finish Technician, p. 114
Automated Building Systems, p. 115
Automotive Maintenance Technician, p. 116
Automotive Technology Maintenance Light Repair, p. 117
Aviation Technician – Airframe, p. 118
Aviation Technician – Powerplant, p. 119
Baking Production, p. 120
Barber, p. 121
Bilingual Office Assistant, p. 122
Bricklaying, p. 123
Business Management, p. 124
Carpentry, p. 125
Central Service Technician, p. 126
Chemical Processing Technician, p. 127
Child Care Services, p. 128
Computer Numerical Control (CNC) Technician, p. 129
Cosmetology, p. 130
Culinary Assistant, p. 131
Dental Assistant, p. 132
Dental Technician, p. 133
Diesel and Powertrain Servicing, p. 134
Digital Imaging, p. 135
Digital Marketing and Integrated Communications, p. 136
Electrical Power Distribution/ Line Mechanic, p. 137
Electricity, p. 138
Electronics Technician Fundamentals, p. 139
Emergency Medical Technician, p. 140
Emergency Medical Technician – Advanced, p. 141
Emergency Medical Technician – Paramedic, p. 142
Entrepreneurship, p. 143
Financial Services, p. 144
Food Service Assistant, p. 145
Foundations of Lodging and Hospitality Management, p. 146
Front-End Web Developer, p. 147
Health Unit Coordinator, p. 148
IT Computer Support Technician, p. 149
IT Digital Forensics Analyst, p. 150
IT Help Desk Support Specialist, p. 151
IT Networking and Infrastructure Administration, p. 152
IT User Support Technician, p. 153
Landscape Horticulture Technician, p. 154
Machine Tool Operations, p. 155
Manufacturing Maintenance, p. 156
Mechanical and Computer Drafting, p. 157
Medical Assistant, p. 158
Medical Billing, p. 159
Medical Coding Specialist, p. 160
Medical Interpreter, p. 161
Nursing Assistant, p. 162
Office Technology Assistant, p. 163
Paralegal Studies, p. 164
Pharmacy Technician, p. 165
Phlebotomy, p. 166
Power Engineering and Boiler Operator, p. 167
Practical Nursing, p. 168
Preparatory Plumbing, p. 169
Production Artist, p. 170
Real Estate Broker Associate, p. 171
Refrigeration, Air Conditioning and Heating Service Technician, p. 172
Renal Dialysis Technician, p. 173
Sales and Customer Experience, p. 174
Special Event Management, p. 175
Supply Management, p. 176
Surveying and Mapping, p. 177
Tool and Die Making, p. 178
Transportation – Logistics, p. 179
Truck Driving, p. 180
TV/Video Field Production Assistant, p. 181
TV/Video Studio Production Assistant, p. 182
Unity Developer, p. 183
Welding, p. 184

Accounting Assistant

TECHNICAL DIPLOMA | **Program Code: 31-101-1** | Downtown Milwaukee, Oak Creek, West Allis campuses (Also offered online)

ACCOUNTING
matc.edu/academics/pathways

Certificate
• Accounting Bookkeeper Trainee, p. 186

Technical Diploma
• Accounting Assistant, p. 108

Associate Degree
• Accounting, p. 30

Prepare for entry-level positions in the accounting field. You will develop competence in financial, managerial, tax and payroll accounting.

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

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

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ACCTG-111	Accounting 1 ^ ... 4
(1)	ACCTG-122	Accounting Software Applications ^ ... 3
(1)	BADM-165	Legal Environment of Business ... 3
(1)	MATH-107	College Mathematics ‡ ... 3
		(or) Any 200-level MATH course
(2)	ACCTG-113	Accounting 2 ‡ ... 4
(2)	ACCTG-121	Income Taxation ... 4
(2)	ACCTG-130	Computerized Accounting ‡ ^ ... 3
(2)	ACCTG-142	Payroll Accounting ... 2
(2)	ENG-195	Written Communication ... 3
		(or) ENG-201 English 1 ‡

TOTAL CREDITS: 29

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Accounting Bookkeeper Trainee certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Advanced Metal Fabrication

TECHNICAL DIPLOMA | **Program Code: 32-457-1** | Mequon Campus

WELDING
matc.edu/academics/pathways

Certificate
- Welding Fundamentals, p. 203

Technical Diploma
- Advanced Metal Fabrication, p. 109
- Welding, p. 184

Develop higher-level skills involving the intricate preparation of a part for cutting, fabrication and welding, and producing parts using new techniques and a variety of materials. You will gain advanced skills in operating computer-controlled press brakes and shears, punch, and plasma/laser arc cutting machines.

Career Outlook

Metal fabricators generally work in manufacturing industries. They may be classified in different roles, including sheet metal workers and ironworkers, and may be trained as apprentices.

Program Learning Outcomes

- Demonstrate industry recognized safety practices
- Form materials to detailed drawings
- Cut materials to detailed drawings
- Join materials to detailed drawings
- Layout components/assemblies
- Inspect product

Admission Requirement

- A high school diploma or GED

Interest in working with metal is recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**WELD-313** Shielded Metal Arc Welding ^	5
(1)	**WELD-314** Gas Tungsten Arc Welding ^	5
(1)	**WELD-350** GTAW Processes ^	1
(1)	**WELD-351** Shielded Metal Arc Welding Processes ^	1
(1)	**WELD-360** Blueprint Reading for Welders ^	2
(1)	**WELD-380** Welding Trades Mathematics ^	1
(2)	**ENG-340** Workplace Communication ^	2
(2)	**WELD-315** Gas Metal Arc Welding Practices ^	5
(2)	**WELD-316** Layout and Setup Practices ^	5
(2)	**WELD-352** Gas-Shielded Arc Welding Processes ^	1
(2)	**WELD-354** Layout and Print Reading Practices ‡ ^	2
(3)	**CONSTR-302** OSHA Safety/CPR for the Trades ‡	1
(3)	**MATH-308** Math for Industrial Applications 1	2
(3)	**MTLFAB-300** Metal Fabrication 1 ‡	5
(3)	**MTLFAB-304** Fixturing ‡	4
(3)	**WELDTC-107** Fabrication Graphics	3
(4)	**MTLFAB-301** Metal Forming and Press Brake ‡	3
(4)	**MTLFAB-302** Advanced Cutting Process and Techniques ‡	4
(4)	**MTLFAB-303** Metal Fabrication 2 ‡	5
(4)	**WELDTC-105** Weldability of Materials ‡	3

TOTAL CREDITS: 60

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

Start Date: August

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Aesthetician

TECHNICAL DIPLOMA | **Program Code: 30-502-3** | Mequon Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Learn advanced skin care techniques and work with clients at Skyn – the Spa at MATC Mequon, the state-of-the-art facility on campus. This program is in compliance with the Wisconsin Department of Safety and Professional Services. You will become eligible to take the state board aesthetician licensing examination, and work in upscale spas or alongside medical professionals.

Career Outlook

Employment opportunities include day spas, salons, resorts and fitness centers.

Program Learning Outcomes

- Perform consultations and skin analysis
- Perform facial and body treatments
- Perform hair removal services
- Perform microdermabrasion and chemical exfoliation
- Recommend products to clients

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- Must attend the Aesthetician Program Orientation to register for courses

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is in compliance with the State of Wisconsin Department of Safety and Professional Services, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112; dsps.wi.gov/Pages/Professions/Aesthetician/Default.aspx.

COURSES		Credits
(1) BARCOS-101	Introduction to Guest Services: Professional Practices ‡	2
(1) BARCOS-108	Facial Treatments ‡	3
(1) BARCOS-109	Hair Removal Treatments ‡	1
(1) BARCOS-317	Barber/Cosmetology Theory	1
(1) BARCOS-330	Business Management Skills for Barbers/Cosmetologists	2
(1) BARCOS-355	Spa Sciences ‡	3
(2) BARCOS-102	Guest Services 2: Spa Operations ‡	3
(2) BARCOS-104	Spa Treatments ‡	3
(2) BARCOS-106	Advanced Makeup Techniques ‡	1
(2) BARCOS-107	Advanced Spa Treatments ‡	1
(2) BARCOS-110	Aesthetician Board Prep ‡	2
(2) ENG-340	Workplace Communication	2
	TOTAL CREDITS:	**24**

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

For information about the program, contact:
Amy Poshepny, Aesthetician Program Coordinator, poshepna@matc.edu, 414-297-7282.

Start Dates: August and January

Community & Human Services
Milwaukee Area Technical College

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Appliance Technician

TECHNICAL DIPLOMA | **Program Code: 31-445-1** | MATC Education Center at Walker's Square

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

As household electrical appliances become more complex, a greater degree of knowledge is required to service them. This program combines coursework with hands-on lab experience. Classes are held at the MATC Education Center at Walker's Square, 816 West National Avenue, Milwaukee.

Career Outlook

Trained appliance service technicians are in demand.

Program Learning Outcomes

- Diagnose mechanical and electrical appliance issues
- Repair mechanical and electrical malfunctions in appliances
- Interact with customers

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**APPSVC-308** Electricity for Appliance Servicing ‡	**4**
(1)	**APPSVC-310** Laundry Equipment ‡	**5**
(1)	**APPSVC-316** Kitchen Equipment 1 ‡	**4**
(1)	**APPSVC-329** Related Business for Appliance Servicing ‡	**1**
(1)	**CONSTR-302** OSHA Safety/CPR for the Trades ‡	**1**
(1)	**CONSTR-380** Mathematics for Construction Trades	**1**
(2)	**APPSVC-324** Refrigeration 1 (Theory and Techniques) ‡	**4**
(2)	**APPSVC-340** Kitchen Equipment 2 ‡	**4**
(2)	**APPSVC-342** Refrigeration 2 (Servicing) ‡	**5**
(2)	**ENG-340** Workplace Communication	**2**

TOTAL CREDITS: 31

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Architectural Woodworking/Cabinetmaking

TECHNICAL DIPLOMA | **Program Code: 31-409-1** | Oak Creek Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Attain the skills needed to work in cabinet shops, millwork shops, furniture factories, display shops and maintenance shops. The curriculum includes how to read blueprints, make detailed drawings and use machinery.

Career Outlook

The employment outlook is favorable for workers with current training.

Program Learning Outcomes

- Read blueprints
- Set up machinery
- Operate saws, joiners, planers, shapers, sanders and other woodworking machinery
- Assemble parts

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	CABMIL-300	Machine Maintenance/ Jigs and Fixtures	2
(1)	CABMIL-303	Woodworking 1	5
(1)	CABMIL-304	Woodworking Fundamentals	3
(1)	CABMIL-355	Materials and Construction	1
(1)	CABMIL-385	Cabinet Detailing ‡	2
(1)	CIVIL-108	Construction Computer Applications	1
(1)	CONSTR-380	Mathematics for Construction Trades	1
(1)	ENG-340	Workplace Communication	2
(2)	CABMIL-305	Woodworking 2	5
(2)	CABMIL-306	Advanced Woodworking	3
(2)	CABMIL-383	Quantity Survey 1	2
(2)	CABMIL-386	Cabinet Layout	2
(2)	MCDESG-120	Basic AutoCAD	1
(2)	PAINT-353	Wood Finishing	1

TOTAL CREDITS: 31

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Date: August

Manufacturing, Construction & Transportation

Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Audio Engineer

TECHNICAL DIPLOMA | **Program Code: 30-701-1** | Downtown Milwaukee Campus

AUDIO PRODUCTION
matc.edu/academics/pathways

Technical Diploma
• Audio Engineer, p. 113

Associate Degree
• Audio Production, p. 45

Plan now for a sound future. You will learn to work with live sound at concerts, stage and church settings; studio recordings and studio engineering; field recordings; production of beats; and audio for gaming. This two-semester program prepares you for entry-level positions in the audio engineering field.

Career Outlook

Positions for audio engineers exist in live applications, commercial recording studios and home-recording production suites.

Program Learning Outcomes

- Apply technical and artistic skills for entry-level employment in the audio production industry
- Apply critical listening and post-production mastering skills to final audio mixes
- Demonstrate the process of digitally blending multiple sources of audio using a mixing console
- Set up and prepare audio equipment for proper sound reinforcement during performances
- Utilize post-production mixing skills to mix studio recordings

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in the Mac OS
- Ability to hear without impairment
- Must have the ability to lift, bend, and move equipment

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) AUDIO-100	Introduction to Audio Software	1
(1) AUDIO-102	Techniques of Sound Recording ‡	3
(1) AUDIO-117	Sound Reinforcement	3
(1) ENG-195	Written Communication (or) ENG-201 English 1 ‡	3
(1) MUSIC-148	Music Fundamentals 1	2
(1) MUSIC-189	Voice Lab 1	1
(2) AUDIO-103	Recording Live Concerts ‡	3
(2) AUDIO-111	Advanced Audio Software ‡	1
(2) AUDIO-116	Advanced Techniques of Sound Recording ‡	3
(2) AUDIO-126	Electronics for Audio Engineers ‡	2
(2) MUSIC-177	Piano Lab 1	1
	TOTAL CREDITS:	**23**

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Auto Collision Repair and Finish Technician

TECHNICAL DIPLOMA | **Program Code: 31-405-1** | Oak Creek Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Get started in an auto repair career. This program prepares you for employment with automobile dealerships, body shops, and manufacturing jobs requiring spray painting ability. With instructor's consent, portions of this program may be taken off campus for co-op credit.

Career Outlook

Employment prospects are good for trained technicians.

Program Learning Outcomes

- Straighten collision-damaged sheet metal
- Refinish automobile body parts
- Replace non-structural panels and parts
- Perform collision repair welding procedures

Admission Requirement

- High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	AUTOBY-300	Introduction to Auto Body Fundamentals	3
(1)	AUTOBY-301	Plastic and Composites Repair	1
(1)	AUTOBY-302	Estimating and Removal/Installation Bolt-On Panels	2
(1)	AUTOBY-303	Masking, Prep and Detailing	1
(1)	AUTOBY-304	Basic Auto Mechanical Systems	1
(1)	AUTOBY-305	Auto Body 1 ‡	5
(1)	ENG-340	Workplace Communication	2
(1)	WELD-340	Welding for Auto Body Technicians	2
(2)	AUTOBY-310	Automobile Body Fundamentals ‡	4
(2)	AUTOBY-311	Automobile Frame Straightening ‡	3
(2)	AUTOBY-312	Electrical Servicing for Auto Body Repairing	1
(2)	AUTOBY-313	Surface Preparation/Color Matching ‡	1
(2)	AUTOBY-314	Front-End Alignment	1
(2)	AUTOBY-315	Auto Body 2 ‡	5

TOTAL CREDITS: 32

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Automated Building Systems

TECHNICAL DIPLOMA | **Program Code: 30-481-1** | Center for Energy Conservation and Advanced Manufacturing (ECAM) at Oak Creek Campus

Learn about emerging technologies and gain the entry-level skills required for careers as technicians and specialists in building automation and controls. This industry encompasses a broad range of technologies used to efficiently control electrical and mechanical systems in commercial, industrial and institutional buildings. Courses are taught in the new Automated Building Systems (ABS) Lab.

Career Outlook

In this field, there is potential for advancement, progressing from entry-level installation work to troubleshooting and programming duties to facility management.

Program Learning Outcomes

- Perform building and energy use assessments
- Install equipment and materials
- Service building automation systems

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ABS-140	Building Systems 1	3
(1) ABS-141	Building Systems 2	2
(1) ABS-142	Measurement and Verification for ABS	1
(1) ABS-143	Electrical Concepts/Control Theory 1 for ABS	2
(1) ABS-144	Control Theory 2 for ABS ‡	2
(1) ABS-150	Energy Auditing for ABS	2
(2) ABS-145	Control Theory 3 for ABS ‡	2
(2) ABS-148	Automated Building Control Systems ‡	4
(2) ABS-149	Networking Automated Building Systems	4
(2) ABS-151	Commissioning Automated Building Systems	2
(2) ABS-153	ABS Capstone Project Course ‡	1
	TOTAL CREDITS:	**25**

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Automotive Maintenance Technician

TECHNICAL DIPLOMA | **Program Code: 31-404-3** | Oak Creek Campus

AUTOMOTIVE MAINTENANCE TECHNICIAN
matc.edu/academics/pathways

Certificate
• Automotive Express Lube Technician, p. 187

Technical Diploma
• Automotive Maintenance Technician, p. 116

Expand your employment options by gaining skills to service and repair the drive train, and electrical and mechanical systems of automobiles through this program. Co-op credit may be an option.

Career Outlook

Job duties may include new car predelivery inspection; wheel alignment and balancing; electrical systems, engine and transmission repair.

Program Learning Outcomes

- Practice safe techniques when servicing automobiles
- Estimate automotive repair and order replacement parts
- Communicate and respond to customers' needs
- Use tools and equipment to diagnose and service automobile systems

Admission Requirement

• High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the ASE Education Foundation, 1503 Edwards Ferry Road NE, Suite 401, Leesburg, VA 20176; 703-669-6650; aseeducationfoundation.org.

COURSES		Credits
(1) AUTO1-300	Express Service ^	2
(1) AUTO1-302	Powertrain Maintenance and Light Repair Fundamentals	2
(1) AUTO1-304	Powertrain Maintenance and Light Repair Lab ‡	4
(1) AUTO1-306	Heating and Air Conditioning Fundamentals	2
(1) AUTO1-308	Brakes, Steering, Suspension Fundamentals ^	2
(1) AUTO1-310	Brakes, Steering, Suspension Lab 1 ‡ ^	4
(1) AUTO1-312	Brakes, Steering, Suspension Lab 2 ‡ ^	2
(2) AUTO1-314	Electrical and Electronics Fundamentals	2
(2) AUTO1-316	Electrical and Electronics Lab ‡	4
(2) AUTO1-318	Auto Instrumentation and Accessories ‡	2
(2) AUTO1-322	Engine Control Systems 1 Fundamentals ‡	2
(2) AUTO1-324	Engine Control Systems 1 Lab ‡	4
(2) AUTO1-326	Engine Control Systems 2 Fundamentals/Lab ‡	2
(2) ENG-340	Workplace Communication	2

TOTAL CREDITS: 36

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Automotive Express Lube Technician certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Automotive Technology Maintenance Light Repair

TECHNICAL DIPLOMA | **Program Code: 30-602-4** | Mequon Campus

AUTOMOTIVE TECHNOLOGY – COMPREHENSIVE
matc.edu/academics/pathways

Technical Diploma
- Automotive Technology Maintenance Light Repair, p. 117

Associate Degree
- Automotive Technology – Comprehensive, p. 46

Get your career started quickly with the skills employers seek for light-duty repair technicians. You will learn to perform basic maintenance and repairs on automotive electrical, brake, steering, suspension and climate control systems.

Career Outlook

Entry-level technicians are in demand at automotive dealerships and repair garages.

Program Learning Outcomes

- Demonstrate professionalism appropriate for the auto service industry
- Perform diagnosis, service, and repair of automotive steering and suspension systems
- Perform diagnosis, service, and repair of automotive brake systems
- Perform diagnosis, service, and repair of automotive electrical and electronic systems
- Perform diagnosis, service, and repair of automotive heating and air conditioning systems

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) AUTO2-150	Automotive Fundamentals	2
(1) AUTO2-151	Electrical Systems 1 ‡	4
(1) AUTO2-161	Express Service ‡	3
(1) ECON-195	Economics (or) ECON-219 Personal Finance and Consumer Economics	3
(2) AUTO2-147	Electrical Systems 2 ‡	2
(2) AUTO2-152	Automotive Climate Control ‡	2
(2) AUTO2-153	Alignment, Suspension and Steering ‡	3
(2) AUTO2-154	Fuel Management 1 ‡	2
(2) AUTO2-159	Automotive Brakes ‡	4

TOTAL CREDITS: 25

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Aviation Technician – Airframe

TECHNICAL DIPLOMA | **Program Code: 31-486-1** | MATC Aviation Center/Oak Creek Campus

AVIATION TECHNICIAN
matc.edu/academics/pathways

Certificate
- Aviation Maintenance Technician – General, p. 188

Technical Diploma
- Aviation Technician – Airframe, p. 118
- Aviation Technician – Powerplant, p. 119

Get qualified to maintain aircraft electrical, instrument and power control systems. (A companion program in Powerplant maintenance also is offered.) MATC's Aviation Center is at 422 East College Avenue, east of the Oak Creek Campus.

Career Outlook

Skilled aviation mechanics with versatile knowledge are in demand.

Program Learning Outcomes

- 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 Aviation Technician General Component or instructor approval
- A high school diploma or GED
- Background in mathematics and the physical sciences recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is certified by the Federal Aviation Administration Headquarters, 800 Independence Avenue SW, Washington, DC 20591; www.faa.gov; FAA (Federal Aviation Administration) CFR (Code of Federal Regulations) Part 147 Aviation Maintenance Technician School.

COURSES		Credits
GENERAL COMPONENT: AVIATION TECHNICIAN		
(1) AVITEC-323	Aircraft Ground Operation and Servicing ^	3
(1) AVITEC-380	Basic Physics ^	1
(1) AVITEC-381	Basic Electricity ^	3
(1) AVITEC-382	Aircraft Materials and Their Inspection ^	3
(1) AVITEC-383	Aircraft Maintenance Publications, Records and Mechanics Regulations ^	1
(1) AVITEC-393	Mathematics for Aviation Technicians ^	2
(1) ENG-340	Workplace Communication ^	2
	TOTAL CREDITS:	**15**
AVIATION TECHNICIAN – AIRFRAME		
(2) AVITEC-320	Aircraft Electrical Systems	4
(2) AVITEC-340	Aircraft Welding	1
(2) AVITEC-367	Composite Structures	3
(2) AVITEC-368	Aircraft Structures	3
(2) AVITEC-370	Aircraft Instrument, Control, and Warning Systems 1	5
(2) AVITEC-371	Aircraft Instrument, Control, and Warning Systems 2 ‡	1
(2) AVITEC-372	Hydraulic and Pneumatic Power Systems	4
(2) AVITEC-376	Airframe Maintenance	4
	TOTAL CREDITS:	**25**

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Aviation Maintenance Technician – General certificate.

Program curriculum requirements are subject to change.

Student must maintain a 2.0 grade-point average in the General Component to be eligible for the Airframe program.

Start Date: January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Aviation Technician – Powerplant

TECHNICAL DIPLOMA | **Program Code: 31-486-2** | MATC Aviation Center/Oak Creek Campus

AVIATION TECHNICIAN
matc.edu/academics/pathways

Certificate
- Aviation Maintenance Technician – General, p. 188

Technical Diploma
- Aviation Technician – Airframe, p. 118
- Aviation Technician – Powerplant, p. 119

This specialized, high-demand training program concentrates on aircraft engine and propeller systems. (A companion program in Airframe maintenance also is offered.) MATC's Aviation Center is at 422 East College Avenue, east of the Oak Creek Campus.

Career Outlook

Aircraft propulsion mechanics remain in high demand.

Program Learning Outcomes

- Read and comprehend aircraft maintenance manuals
- Analyze and repair powerplant malfunctions
- Maintain aircraft powerplant subsystems and determine their airworthiness

Admission Requirements

- Completion of the Aviation Technician General Component or instructor approval
- A high school diploma or GED
- Background in mathematics and the physical sciences recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is certified by the Federal Aviation Administration Headquarters, 800 Independence Avenue SW, Washington, DC 20591; www.faa.gov; FAA (Federal Aviation Administration) CFR (Code of Federal Regulations) Part 147 Aviation Maintenance Technician School.

COURSES		Credits
GENERAL COMPONENT: AVIATION TECHNICIAN		
(1) AVITEC-323	Aircraft Ground Operation and Servicing ^	3
(1) AVITEC-380	Basic Physics ^	1
(1) AVITEC-381	Basic Electricity ^	3
(1) AVITEC-382	Aircraft Materials and Their Inspection ^	3
(1) AVITEC-383	Aircraft Maintenance Publications, Records and Mechanics Regulations ^	1
(1) AVITEC-393	Mathematics for Aviation Technicians ^	2
(1) ENG-340	Workplace Communication ^	2
	TOTAL CREDITS:	**15**
AVIATION TECHNICIAN – POWERPLANT		
(2) AVITEC-302	Engine Fuel Metering Systems	2
(2) AVITEC-303	Powerplant Electrical and Instrument Systems	5
(2) AVITEC-304	Aircraft Induction and Supercharging Systems	1
(2) AVITEC-306	Engine Lubricating Systems	2
(2) AVITEC-315	Aircraft Reciprocating Engines 1	2
(2) AVITEC-316	Aircraft Reciprocating Engines 2 ‡	4
(2) AVITEC-318	Aircraft Gas Turbine Engines 1	2
(2) AVITEC-319	Aircraft Gas Turbine Engines 2 ‡	5
(2) AVITEC-360	Propeller Systems	2
	TOTAL CREDITS:	**25**

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Aviation Maintenance Technician – General certificate.

Program curriculum requirements are subject to change.

Students must maintain a 2.0 grade-point average in the General Component to be eligible for the Powerplant program.

Start Date: October

Manufacturing, Construction & Transportation
Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Baking Production

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

BAKING AND PASTRY ARTS
matc.edu/academics/pathways

Technical Diploma
• Baking Production, p. 120

Associate Degree
• Baking and Pastry Arts, p. 47

Learn to produce and prepare pies, cookies, cakes, breads and other goods in a variety of baking environments, such as in-store and independent bakeries, large commercial bakeries and restaurants.

Career Outlook

Graduates typically find employment in retail or commercial bakeries. Employers will expect graduates to safely use equipment, to mix batters and doughs, and to skillfully decorate baked goods.

Program Learning Outcomes

- Safe use of hand and power tools in the bakery
- Scaling ingredients for accurate portioning
- Mixing and handling batters and doughs
- Applying icing to baked products
- Preparation of fancy breads, dinner rolls, layer cakes, tortes, petit fours and cookies
- Converting standard recipes and portion control formulas

Admission Requirements

- A high school diploma or GED
- Ability to lift up to 50 pounds, and the purchase of pastry tool kit and uniform also required for this program

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**BAKING-120** Basic Baking Techniques ‡	3
(1)	**BAKING-122** Baking Principles and Ingredient Functions	3
(1)	**CULART-117** Nutrition for Culinary Arts	1
(1)	**CULMGT-112** Food Service Sanitation	2
(1)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	**MATH-134** Mathematical Reasoning	3
	(or) Any 200-level MATH course	
(2)	**BAKING-101** Specialty Baking and Pastry Techniques 1 ‡	3
(2)	**BAKING-125** Artisan Breads ‡	3
(2)	**BAKING-129** Healthy and Natural Baking ‡	2
(2)	**BAKING-130** Field Experience in Baking and Pastry Arts ‡	1
(2)	**CULMGT-105** Culinary Math and Cost Control	3
(2)	**ENG-196** Oral/Interpersonal Communication	3
	(or) Any 200-level ENG or SPEECH course	

TOTAL CREDITS: 30

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Barber

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

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

This program prepares you to work in the barbering profession, in compliance with the Wisconsin Department of Safety and Professional Services. You will learn shampooing, cutting and hairstyling techniques, shaving, beard trimming, hair coloring and other services. Graduates of this program are eligible to take the state board licensing exam.

Career Outlook

Employment prospects for licensed barbers are excellent. Many barbers are self-employed, either owning their business or leasing booth space.

Program Learning Outcomes

- Apply safety and sanitation procedures
- Adhere to the current Wisconsin administrative codes and statutes for barbers
- Demonstrate interpersonal skills for success
- Identify hair and scalp disorders
- Perform haircutting services
- Demonstrate shaving and other facial hair removal techniques
- Perform male facial procedures

(For full description, see matc.edu.)

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is in compliance with the State of Wisconsin Department of Safety and Professional Services, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA ***Technical College***

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES			Credits
(1)	**BARCOS-300**	Shampoo and Scalp Treatments ‡	**2**
(1)	**BARCOS-324**	Business Skills for Barbers/Cosmetologists	**1**
(1)	**BARCOS-336**	Barber Theory 1	**1**
(1)	**BARCOS-337**	Barber Haircut 1	**2**
(1)	**BARCOS-338**	Barber Chemical Services 1	**1**
(1)	**BARCOS-341**	Shaving/Facials	**2**
(1)	**BARCOS-344**	Barber Theory 2 ‡	**1**
(1)	**BARCOS-345**	Barber Haircut 2 ‡	**2**
(1)	**BARCOS-346**	Barber Chemical Services 2 ‡	**1**
(1)	**BARCOS-347**	Barber Hairstyling 1	**1**
(1)	**BARCOS-348**	Introduction to Client Services ‡	**2**
(2)	**BARCOS-318**	Barber Theory 3 ‡	**1**
(2)	**BARCOS-319**	Natural Hair Care and Braiding ‡	**1**
(2)	**BARCOS-320**	Client Services 1 ‡	**1**
(2)	**BARCOS-323**	Client Services 2 ‡	**1**
(2)	**BARCOS-330**	Business Management Skills for Barbers/Cosmetologists	**2**
(2)	**BARCOS-349**	Barber Haircut 3 ‡	**1**
(2)	**BARCOS-350**	Barber Chemical Services 3 ‡	**2**
(2)	**BARCOS-351**	Barber Hairstyling 2 ‡	**1**
(2)	**BARCOS-352**	Barber State Board Review ‡	**2**
(2)	**BARCOS-353**	Barber Haircut 4 ‡	**2**

TOTAL CREDITS: 30

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Bilingual Office Assistant

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

This technical diploma ladders into the Administrative Professional associate degree. Contact an MATC advisor for details.

Students fluent in English and a second language will be prepared for bilingual office positions after completing this program. You will use Microsoft software to produce documents in both languages; and will use the internet, videoconferencing and other technologies. All courses, except foreign language instruction, are taught in English.

Career Outlook

There is a strong need for bilingual office workers to serve diverse communities.

Program Learning Outcomes

- Perform accurate workplace communications
- Use technology skills for business tasks
- Perform routine office procedures
- Demonstrate professionalism and effective workplace relations

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195**	Written Communication Skills ..... **3** (or) ENG-201 English 1 ‡
(1)	**OFTECH-101**	Office Technologies 1 ..... **3**
(1)	**OFTECH-103**	Keyboard and Keypad **1**
(1)	**OFTECH-119**	Information Management **3**
(1)	**OFTECH-183**	Bilingual Customer Service Skills **3**
(2)	**FLANG-123**	Intermediate Spanish ‡ * ..... **3** (or) FLANG-218 Spanish 5: Conversation, Grammar and Current Topics ‡
(2)	**OFTECH-104**	Budgeting Basics for Support Personnel **3**
(2)	**OFTECH-122**	Basic English Essentials **3**
(2)	**OFTECH-133**	Business Document Production 1 ‡ **3**
(2)	**OFTECH-136**	Keyboarding Skill Development 1 ‡ **1**
(3)	**OFTECH-165**	Administrative Office Procedures **3**
(3)	**OFTECH-184**	MS Office: Word, Excel, Access and PowerPoint ‡ **3**
(3)	**OFTECH-190**	Bilingual Office Assistant Internship ‡ .. **1**

TOTAL CREDITS: 33

( ) Semester order for full-time students.

‡ 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 the program's foreign language coursework.*

Start Dates: August and January

Business & Management

Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Bricklaying

TECHNICAL DIPLOMA | **Program Code: 30-408-2** | MATC Education Center at Walker's Square

Designed to prepare you to enter the masonry trade, this program teaches the fundamentals of laying block and brick. Classes are held at the MATC Education Center at Walker's Square, 816 West National Avenue, Milwaukee.

Career Outlook

Increased building construction has resulted in a need for bricklayers.

Program Learning Outcomes

- Lay brick and block
- Examine residential, commercial and industrial methods of construction
- Apply required OSHA safety standards in construction work
- Demonstrate a professional demeanor as it applies to the trade

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) CIVIL-308	Computer Applications for the Trades	1
(1) CONSTR-302	OSHA Safety/CPR for the Trades ‡	1
(1) CONSTR-380	Mathematics for Construction Trades	1
(1) ENG-340	Workplace Communication	2
(1) MASON-190	Current Topics in Masonry	1
(1) MASON-300	Fundamental Bricklaying	5
(1) MASON-303	Advanced Bricklaying ‡	5
(1) MASON-308	Job Safety and Layout	1
(1) MASON-356	Methods 1 - Fundamentals ‡	2

TOTAL CREDITS: 19

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

Business Management

TECHNICAL DIPLOMA | **Program Code: 31-102-3** | All campuses (Also offered online)

BUSINESS MANAGEMENT
matc.edu/academics/pathways

Certificate
• Business Management Trainee, p. 190

Technical Diploma
• Business Management, p. 124

Associate Degree
• Business Management, p. 51

Move forward toward your career goals with a strong foundation of business knowledge including management, business law, office technologies, accounting and risk management, through this two-semester program.

Career Outlook

Graduates possess skills to begin a career in many business settings. Self-employed business owners also will profit from this program.

Program Learning Outcomes

- 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 Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ACCTG-110	Financial Accounting ^ ..... 3 (or) ACCTG-111 Accounting 1
(1)	BADM-106	MS Office for Business Applications ^ 3
(1)	BADM-134	Business Organization and Management ^ 3
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(2)	BADM-120	Business Analysis ‡ 3
(2)	BADM-145	Small Business Management ‡ ..... 3 (or) LOGMGT-146 Operations Management
(2)	BADM-165	Legal Environment of Business ^ 3
(2)	BADM-192	Risk Management and Insurance 3
(2)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course

TOTAL CREDITS: 27

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Business Management Trainee certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Carpentry

TECHNICAL DIPLOMA | **Program Code: 31-410-1** | Oak Creek Campus and the MATC Education Center at Walker's Square

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This program prepares you for working on residential and commercial structures. You will learn about reading construction blueprints, the various materials and fasteners used, and the fundamental techniques used in wood-frame construction.

Career Outlook

As residential and commercial structures continue to be built and remodeled, there is a steady demand for carpenters.

Program Learning Outcomes

- Use hand and power tools and equipment
- Apply industry-recognized safety practices and procedures
- Analyze sustainable building practices
- Interpret construction drawings
- Interpret building codes
- Demonstrate industry building practices and material application

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	CABMIL-340 Millwork for Carpenters ‡	2
(1)	CARP-301 House Framing ‡	5
(1)	CARP-304 House Framing Fundamentals ‡	3
(1)	CARP-351 Building Materials ‡	1
(1)	CARP-385 Blueprint Reading 1 ‡	2
(1)	CONSTR-302 OSHA Safety/CPR for the Trades ‡	1
(1)	CONSTR-380 Mathematics for Construction Trades	1
(1)	ENG-340 Workplace Communication	2
(2)	CABMIL-341 Millwork Techniques ‡	2
(2)	CARP-303 Roof Framing	5
(2)	CARP-306 Exterior and Interior Finishing ‡	5
(2)	CARP-315 Energy Efficiency in Residential Construction	1
(2)	CARP-383 Quantity Survey ‡	2
(2)	CARP-387 Commercial Blueprint Reading ‡	1

TOTAL CREDITS: 33

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

MATC Education Center at Walker's Square is located at 816 West National Avenue, Milwaukee.

Start Dates: August and January

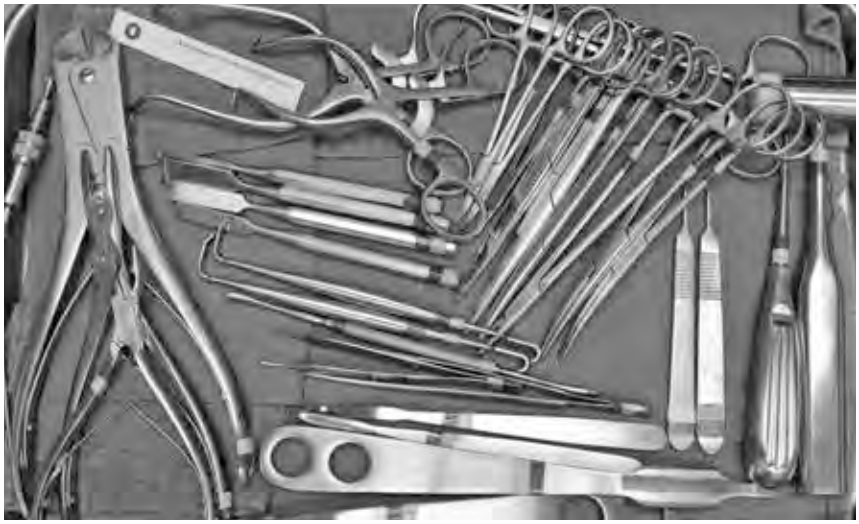
Manufacturing, Construction & Transportation
Milwaukee Area **Technical College**

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Central Service Technician

TECHNICAL DIPLOMA | **Program Code: 30-534-1** | Downtown Milwaukee Campus



Central service technicians are essential for maintaining the quality of medical products that are processed, packaged and sterilized at a hospital or clinic. These products range from hospital equipment to surgical instruments that are needed in operating rooms, emergency rooms and patient rooms.

The program's courses are offered in traditional and blended (online and in-classroom) formats.

Career Outlook

Employment opportunities are available in hospitals and ambulatory surgery centers.

Program Learning Outcomes

- Apply principles of infection control in the role of the Central Service Technician
- Decontaminate instruments and equipment
- Prepare instruments, equipment and supplies
- Apply sterilization techniques
- Perform inventory control and distribution
- Function as an ethical, legal, and professional member of the healthcare team

Admission Requirements

High school diploma or GED, one year of high school-level biology, and criminal background check required for admission; medical records required after acceptance. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) CSTECH-302	Central Service Fundamentals	**3**
(1) CSTECH-303	Central Service Clinical Practice	**2**
(1) HEALTH-101	Medical Terminology	**3**
(1) HEALTH-107	Digital Literacy for Healthcare	**2**
	TOTAL CREDITS:	**10**

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

Start Dates: August and January

Healthcare Services
Milwaukee Area ***Technical College***

matc.edu/course-catalog/healthcare-services

Chemical Processing Technician

TECHNICAL DIPLOMA | **Program Code: 31-603-1** | Downtown Milwaukee Campus

CHEMICAL TECHNICIAN
matc.edu/academics/pathways

Technical Diploma
• Chemical Processing Technician, p. 127

Associate Degree
• Chemical Technician, p. 54

Apply your interests in preparing chemical solutions and using chemical apparatus to the work performed in industrial operations. Through this program, you will gain skills required for working in industrial chemical processing and pilot plant operations.

Career Outlook

Employment prospects are strong, locally and nationally. Success in the workplace requires the ability to work independently and accurately, with a minimal level of supervision.

Program Learning Outcomes

- Apply knowledge of chemical apparatus, equipment and procedures in various production, research and control operations
- Communicate and receive precise chemical data and procedures
- Use software for process control and chemical inventory
- Practice plant safety procedures
- Utilize safety data sheets and global harmonization system

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- One year of high school chemistry, or equivalent

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ENG-195	Written Communication	3
(1) CHEMT-101	Chemical Laboratory/Process Safety ‡	2
(1) CHEMT-103	Introduction to Chemical Technology	2
(1) CHEMT-111	General Chemistry 1 ‡	5
(2) ENG-197	Technical Reporting	3
(2) CHEMT-105	Introduction to Instrumental Methods	3
(2) CHEMT-112	General Chemistry 2 ‡	5
(2) NATSCI-139	Survey of Physics	3
	TOTAL CREDITS:	**26**

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

Start Dates: August and January

General Education
Milwaukee Area Technical College

matc.edu/course-catalog/general-education

To apply for financial aid, visit fafsa.gov. School Code: 003866

Child Care Services

TECHNICAL DIPLOMA | **Program Code: 31-307-1** | Downtown Milwaukee, West Allis campuses

EARLY CHILDHOOD EDUCATION
matc.edu/academics/pathways

Certificate
• Preschool, p. 198

Technical Diploma
• Child Care Services, p. 128

Associate Degree
• Early Childhood Education, p. 61

Bilingual (Spanish) mode is offered at the West Allis Campus

Child development, nutrition, creative activities, and practical experience with young children are emphasized. Graduates work in child care centers, as well as serve as family child care providers.

Career Outlook

Trends indicate a steady growth in the child care field.

Program Learning Outcomes

- Relate knowledge of child development to practice
- Create relationships with children, family, and the community
- Apply observation, documentation, and assessment strategies
- Implement developmentally appropriate teaching and learning activities
- Demonstrate professionalism
- Follow health, safety, and nutrition practices

Admission Requirements

- A high school diploma or GED
- Documentation of compliance with Wisconsin's Caregiver Law; proper immunizations and good health as evidenced by a medical examination; practicum placement is contingent upon results of criminal background check

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) **CHILDD-108**	ECE: Early Language and Literacy ^	3
(1) **CHILDD-148**	ECE: Foundations of Early Childhood Education ^	3
(1) **CHILDD-151**	ECE: Infant and Toddler Development	3
(1) **CHILDD-167**	ECE: Health, Safety and Nutrition ^	3
(1) **CHILDD-195**	ECE: Family and Community Relations	3
(2) **CHILDD-174**	ECE: Introductory Practicum ^	3
(2) **CHILDD-179**	ECE: Child Development ^	3
(2) **CHILDD-188**	ECE: Guiding Child Behavior ^	3
(2) **ENG-195**	Written Communication (or) ENG-201 English 1 ‡	3

TOTAL CREDITS: 27

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the Preschool certificate.
Program curriculum requirements are subject to change.

Start Dates: August and January

Community & Human Services
Milwaukee Area ***Technical College***

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Computer Numerical Control (CNC) Technician

TECHNICAL DIPLOMA | **Program Code: 32-444-1** | Downtown Milwaukee Campus (year one only), Oak Creek Campus

CNC PROGRAMMING
matc.edu/academics/pathways

Technical Diploma
- Machine Tool Operations, p. 155
- CNC Technician, p. 129

MATC's equipment includes industrial-based CNC machining centers and turning centers, and computer-aided design/computer-aided manufacturing (CAD/CAM) workstations. Students gain hands-on experience in all phases of programming and operations.

Program Learning Outcomes

- Apply basic safety practices in the machine shop
- Interpret industrial/engineering drawings
- Apply precision measuring methods to part inspection
- Perform basic machine tool equipment setup and operation
- Perform programming, setup and operation of CNC machine tools
- Perform advanced CNC machining operations

Admission Requirements

- A high school diploma or GED
- Completion of Machine Tool Operations CNC technical diploma program and two years of hands-on CNC machine tool experience

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

‡ Prerequisite required.

^ Counts toward earning the Machine Tool Operations technical diploma (CNC machine setup and operation).

** Counts toward earning the Machine Tool Operations technical diploma (CNC Swiss turning center setup and operation).*

Program curriculum requirements are subject to change.

This program is accredited by The National Institute for Metalworking Skills, 10565 Fairfax Boulevard, Suite 10, Fairfax, VA 22030; 703-352-4971; nims-skills.org.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

YEAR 1, SEMESTER 1		Credits
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-347	Single-Spindle Auto Screw Machine 1 *	**3**
	(or) MACHTL-300 Engine Lathe 1 ^	
MACHTL-348	Single-Spindle Auto Screw Machine 2 ‡ *	**3**
	(or) MACHTL-301 Engine Lathe 2 ‡ ^	
MACHTL-361	Multiple-Spindle Auto Screw Machine 1 ‡ *	**3**
	(or) MACHTL-309 Manual Vertical Milling Machine 1 ^	
MACHTL-362	Multiple-Spindle Auto Screw Machine 2 ‡ *	**3**
	(or) MACHTL-310 Manual Vertical Milling Machine 2 ‡ ^	

YEAR 1, SEMESTER 2		
ENG-340	Workplace Communication ^ *	**2**
MACHTL-304	Introduction to CNC Programming ‡ ^ *	**1**
MACHTL-385	Machine Trades Mathematics 2 ‡ ^ *	**1**
MACHTL-391	Quality Control ‡ ^ *	**1**
MDRAFT-386	Machine Blueprint Reading 2 ‡ ^ *	**1**
MACHTL-371	CNC Swiss Turning Center 1 *	**4**
	(or) MACHTL-320 Introduction to CNC Turning Centers ‡ ^	
MACHTL-372	CNC Swiss Turning Center 2 ‡*	**4**
	(or) MACHTL-322 Introduction to CNC Vertical Machining Centers ‡ ^	
MACHTL-373	CNC Swiss Turning Center 3 ‡*	**4**
	(or) MACHTL-325 Surface Grinding ^	

YEAR 2
Select one group of programming courses per semester:

CNC Machining Center Programming:

CNC-324	CNC Machine Programming/Proveout 1 ‡	**3**
CNC-325	CNC Machine Programming/Proveout 2 ‡	**3**
CNC-326	Machining Center CAD/CAM Programming 1 ‡	**3**
CNC-327	Machining Center CAD/CAM Programming 2 ‡	**3**

CNC Turning Center Programming:

CNC-332	CNC Turning Programming/Proveout 1 ‡	**3**
CNC-333	CNC Turning Programming/Proveout 2 ‡	**3**
CNC-334	Turning Center CAD/CAM Programming 1 ‡	**3**
CNC-335	Turning Center CAD/CAM Programming 2 ‡	**3**

Additional Required Courses:

CNC-302	Computer Application/CNC	**1**
CNC-320	Tooling and Fixturing	**1**
CNC-321	CNC Machine Technology	**1**
MACHTL-386	Machine Trades Mathematics 3 ‡	**1**
MDRAFT-320	Coordinate Blueprint Reading ‡	**1**
MTLGY-321	Metallurgy 1	**1**

TOTAL CREDITS: 64

Cosmetology

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

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Use your talents to work in the cosmetology profession. This program, which is in compliance with the Wisconsin Department of Safety and Professional Services, can be completed in one year to 18 months, including attendance in summer. Graduates are eligible to take the state board licensing examination.

Career Outlook

Employment prospects for cosmetologists are excellent.

Program Learning Outcomes

- Perform shampoo, haircut, and style services
- Perform skin care services
- Perform chemical services
- Perform nail services
- Develop business practices for industry success

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is in compliance with the State of Wisconsin Department of Safety and Professional Services, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112.

COURSES			Credits
(1)	**BARCOS-300**	Shampoo and Scalp Treatments ‡	2
(1)	**BARCOS-301**	Men's Haircut 1 ‡	2
(1)	**BARCOS-302**	Women's Haircut 1 ‡	2
(1)	**BARCOS-304**	Permanent Wave ‡	2
(1)	**BARCOS-306**	Esthetics 1 ‡	2
(1)	**BARCOS-307**	Esthetics 2 ‡	1
(1)	**BARCOS-309**	Chemical Relaxing ‡	2
(1)	**BARCOS-310**	Hair Tinting ‡	2
(1)	**BARCOS-314**	Hairstyle 1 ‡	2
(1)	**BARCOS-315**	Hairstyle 2 ‡	2
(1)	**MATH-304**	Math Principles 1	1
(2)	**BARCOS-303**	Men's Haircut 2 ‡	2
(2)	**BARCOS-305**	Women's Haircut 2 ‡	2
(2)	**BARCOS-308**	Nail Services ‡	2
(2)	**BARCOS-312**	Advanced Color ‡	1
(2)	**BARCOS-313**	Hair Color Correction ‡	1
(2)	**BARCOS-317**	Barber/Cosmetology Theory ‡	1
(2)	**BARCOS-319**	Natural Haircare and Braiding ‡	1
(2)	**BARCOS-320**	Client Services 1 ‡	1
(2)	**BARCOS-323**	Client Services 2 ‡	1
(2)	**BARCOS-324**	Business Skills for Barbers/ Cosmetologists	1
(2)	**BARCOS-326**	Client Services 3 ‡	1
(2)	**BARCOS-330**	Business Management Skills for Barbers/Cosmetologists ‡	2
(2)	**ENG-340**	Workplace Communication	2
(3)	**BARCOS-316**	Advanced Style ‡	1
(3)	**BARCOS-321**	Hair Extensions ‡	1
(3)	**BARCOS-327**	Client Services 4 ‡	1
(3)	**BARCOS-328**	Client Services 5 ‡	1
(3)	**BARCOS-329**	Basic Artificial Nail Concepts ‡	1
(3)	**BARCOS-335**	State Board Review ‡	3

TOTAL CREDITS: 46

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Note: In addition to tuition and textbooks, students must purchase a tool/equipment kit.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA ***Technical College***

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Culinary Assistant

TECHNICAL DIPLOMA | **Program Code: 31-316-1** | Downtown Milwaukee Campus

CULINARY ASSISTANT
matc.edu/academics/pathways

Technical Diploma
- Food Service Assistant, p. 145
- Culinary Assistant, p. 131

You will learn basic theory and techniques of food production and service through a combination of lecture, demonstration and hands-on experience. The program is designed to prepare students for entry-level employment in the food service industry.

Career Outlook

Graduates are in demand for positions as cooks and management trainees. With experience, opportunities exist for advancement to chef and/or manager.

Program Learning Outcomes

- Apply principles of safety and sanitation in food service operations
- Apply basic principles of nutrition
- Demonstrate basic culinary skills
- Assist in food service management
- Plan menus
- Explore food service financial information

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) **CULART-100**	Introduction to Culinary Arts	1
(1) **CULART-116**	Mise en Place/Culinary Fundamentals ‡ ^	2
(1) **CULART-117**	Nutrition for Culinary Arts	1
(1) **CULART-118**	Sustainable Food Communities	1
(1) **CULMGT-112**	Food Service Sanitation ^	2
(1) **ENG-195**	Written Communication (or) ENG-201 English 1 ‡	3
(1) **MATH-134**	Mathematical Reasoning (or) Any 200-level MATH course	3
(2) **CULART-107**	Field Experience in Food Service/ Hospitality Industry ‡	1
(2) **CULART-114**	Business/Industry Food Service/ Catering 1 ‡	4
(2) **CULART-115**	Culinary Arts Practicum ‡	1
(2) **CULART-122**	Stocks, Soups and Sauces ‡	1
(2) **CULART-124**	Meat Identification and Fabrications ‡	1
(2) **CULART-126**	Seafood/Shellfish Cookery ‡	1
(2) **CULART-128**	Vegetables, Starches and Grains ‡ ^	1
(2) **CULMGT-101**	Menu Planning and Design	2
(2) **CULMGT-105**	Culinary Math and Cost Control	3

TOTAL CREDITS: 28

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Food Service Assistant technical diploma.

Program curriculum requirements are subject to change.

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area ***Technical College***

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Dental Assistant

TECHNICAL DIPLOMA | **Program Code: 30-508-2** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Bilingual (Spanish) program also is offered*

This program prepares students to perform a variety of patient care responsibilities while under the direction and supervision of a dentist during the examination and treatment of patients. Coursework includes academic and clinical competencies, and students will have clinical experience in a dental practice. Students have the option of completing the program in one or two semesters.

Career Outlook

Employment opportunities for trained dental assistants are plentiful in private offices, hospitals and clinic settings.

Program Learning Outcomes

- Perform a variety of entry-level supportive dental procedures
- Manage infection and hazard control
- Produce diagnostic radiographs
- Perform basic dental laboratory procedures
- Demonstrate professional behaviors, ethics and appearance

Admission Requirements

High school diploma or GED required, and biology or chemistry recommended. This program admits students through a petition selection process. See the program's webpage at matc.edu to view petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

*Bilingual program start date is August only.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

COURSES		Credits
(1)	**DENAST-302** Dental Chairside	5
(1)	**DENAST-304** Dental and General Anatomy	2
(1)	**DENAST-305** Applied Dental Radiography	2
	(or) DENHYG-103 Dental Radiography	
(1)	**DENAST-306** Dental Assistant – Clinical	3
(1)	**DENAST-307** Dental Assistant Professionalism	1
(1)	**DENHYG-101** Dental Health Safety	1
(1)	**DENHYG-113** Dental Materials	2

TOTAL CREDITS: 16

( ) Semester order for full-time students.

Program curriculum requirements are subject to change.

For more career information, visit the Dental Assisting National Board, danb.org, or the American Dental Assistants Association website, adaausa.org.

Dental Technician

TECHNICAL DIPLOMA | **Program Code: 30-507-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Gain the knowledge and skills needed to fabricate dental restorations, including metal and ceramic crowns and bridges, and complete dentures. The curriculum also includes dental terminology, dental anatomy, occlusion, and computer-aided design (CAD) processes. Students will acquire skills through hands-on experience in MATC's well-equipped dental laboratory.

Career Outlook

An increasing demand for aesthetic dentistry and the aging population contribute to employment opportunities.

Program Learning Outcomes

- Relate concepts of oral anatomy, morphology and occlusion to dental laboratory procedures
- Perform laboratory techniques and procedures for dentures
- Assume the role of the dental laboratory technician as a member of the dental healthcare team
- Observe infection control and environmental safety procedures

Admission Requirements

This program admits students through a petition selection process. See the program's webpage at matc.edu to view petition process and all requirements, including health requirements and criminal background check. High school juniors and seniors are eligible to apply.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	DLABT-102	Dental Anatomy ‡ 5
(1)	DLABT-111	Introduction to Complete Dentures ‡ 5
(1)	DLABT-121	Introduction to Crown and Bridge ‡ ... 5
(1)	DLABT-128	All Ceramic Techniques 4
(1)	ENG-196	Oral/Interpersonal Communication 3
		(or) Any 200-level ENG or SPEECH course

TOTAL CREDITS: 22

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

Start Date: August

Manufacturing, Construction & Transportation
Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Diesel and Powertrain Servicing

TECHNICAL DIPLOMA | **Program Code: 31-412-3** | Oak Creek Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This program prepares you for servicing equipment powered by diesel or natural gas fueled engines, such as construction equipment and marine applications, with emphasis on the heavy truck field.

Career Outlook

There is steady demand for truck and heavy equipment mechanics in the transportation and construction equipment industries.

Program Learning Outcomes

- Demonstrate preventive maintenance skills relative to checking, lubricating and making necessary adjustments and minor repairs
- Apply skills in specialized test equipment and machine tools
- Demonstrate accuracy in identifying component parts and assemblies
- Apply skills in troubleshooting and repairing engines, drive components and electrical components

Admission Requirement

- High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the ASE Education Foundation, 1503 Edwards Ferry Road NE, Suite 401, Leesburg, VA 20176; 703-669-6650; aseeducationfoundation.org.

COURSES		Credits
(1)	**DIESEL-301** Diesel Fuel Systems ‡	**2**
(1)	**DIESEL-306** Engine Construction and Installation ‡	**5**
(1)	**DIESEL-307** Electrical/Electronics Shop ‡	**5**
(1)	**DIESEL-308** CNG for Heavy-Duty Applications	**1**
(1)	**DIESEL-338** Emission Control Systems ‡	**2**
(2)	**DIESEL-319** Driveline Components ‡	**5**
(2)	**DIESEL-333** Heavy Truck HVAC Systems ‡	**2**
(2)	**DIESEL-341** Front-End, Brake and Suspension Systems ‡	**5**
(2)	**DIESEL-345** Preventive Maintenance ‡	**2**
(2)	**ENG-340** Workplace Communication	**2**
(2)	**WELD-305** Fundamentals of Oxyfuel Welding	**1**

TOTAL CREDITS: 32

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Digital Imaging

TECHNICAL DIPLOMA | **Program Code: 30-203-1** | Downtown Milwaukee Campus

PHOTOGRAPHY
matc.edu/academics/pathways

Technical Diploma
• Digital Imaging, p. 135

Associate Degree
• Photography, p. 93

Focus on photography techniques and industry trends for composition, lighting and image manipulation as you prepare to enter the digital imaging field with the skills attained in this program.

Career Outlook

As the industry continues to evolve, new job opportunities exist in professional-level still and video photography.

Program Learning Outcomes

- Apply pre-planning skill in proper conceptual development, photo equipment choices, and lighting design before executing their plan
- Demonstrate proficiency in a variety of industry software tools and techniques including graphic software, digital video and color management software
- Demonstrate proficiency in evaluating a variety of web creation sites and developing appropriate content for it

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in the Mac OS
- Sight ability without impairment
- Must have the ability to lift, bend, and move equipment
- Must own a DSLR camera

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	PHOTO-100	Introduction to Digital Photography .. 1
(1)	PHOTO-101	Digital Fundamental Photography 3
(1)	PHOTO-107	Photographic Trends 1
(1)	PHOTO-141	Photoshop for Photographers 1 3
(2)	MATH-123	Math With Business Applications ‡ ..... 3 (or) Any 200-level MATH course
(2)	PHOTO-108	Photographic Lighting ‡ 3
(2)	PHOTO-130	Photographic Composition 3
(2)	PHOTO-139	Measurement Techniques ‡ 3
(2)	PHOTO-142	Photoshop for Photographers 2 ‡ 3

TOTAL CREDITS: 26

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Digital Marketing and Integrated Communications

TECHNICAL DIPLOMA | **Program Code: 31-104-9** | Downtown Milwaukee, Mequon, Oak Creek campuses (Also offered online)

MARKETING
matc.edu/academics/pathways

Technical Diploma
- Digital Marketing and Integrated Communications, p. 136
- Sales and Customer Experience, p. 174

Associate Degree
- Marketing – Online Accelerated, p. 84
- Marketing, p. 85

Develop a broad cross-section of knowledge, skills and abilities in digital marketing, advertising, marketing research, analytics, social media, client services and integrated marketing communications.

Career Outlook

Digital marketing is a U.S. Department of Labor "Bright Outlook" career with expected growth of 5% to 9% through 2026.

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 integrated content strategies
- Utilize various digital marketing tools and analytics

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	MKTG-102	Marketing Principles 3
(1)	MKTG-118	Social Media Marketing 3
(1)	MKTG-165	Digital Marketing 3
(1)	MKTG-173	Marketing Research/Analytics 3
(2)	MKTG-125	Advertising: Brands and Campaigns ... 3
(2)	MKTG-134	Integrated Marketing Communications 3
(2)	MKTG-144	Client Services 3
(2)	MKTG-198	Visual Media Marketing 3

TOTAL CREDITS: 27

( ) Semester order for full-time students.

‡ Prerequisite required.

All the Digital Marketing and Integrated Communications courses count toward the Marketing associate degree.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Electrical Power Distribution/Line Mechanic

TECHNICAL DIPLOMA | **Program Code: 31-413-2** | Mequon Campus

This 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.

Career Outlook

Some graduates use the training as a step toward apprenticeship. Other positions available to graduates include line worker, substation electrician and cable installer.

Program Learning Outcomes

- Apply electrical theory
- Construct overhead electrical distribution systems
- Disassemble overhead electrical distribution systems
- Construct underground electrical distribution systems
- Disassemble underground electrical distribution systems
- Construct overhead electrical transmission system
- Disassemble overhead electrical transmission system
- Maintain electrical systems

Admission Requirements

- A high school diploma or GED
- Ability to drive and a valid driver's license

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ELECTY-318	Electrical Power Distribution 1A ‡	5
(1) ELECTY-319	Electrical Power Distribution 1B ‡	4
(1) ELECTY-320	Electrical Principles and Applied Math 1 ‡	4
(1) ELECTY-321	Line Mechanic Rescue and Safety ‡	2
(2) ELECTY-322	Electrical Power Distribution 2A ‡	5
(2) ELECTY-323	Electrical Power Distribution 2B ‡	4
(2) ELECTY-324	Electrical Principles and Applied Math 2 ‡	4
(2) ENG-340	Workplace Communication	2
	TOTAL CREDITS:	**30**

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Date: August

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Electricity

TECHNICAL DIPLOMA | **Program Code: 31-413-1** | Downtown Milwaukee Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Learn skills needed for entry-level electrician positions in industry and the building trades. This program does not substitute for an electrical apprenticeship, but does offer you the basic knowledge needed to begin working for some electrical contractors.

Career Outlook

Some graduates use the training as a step toward an electrician apprenticeship.

Program Learning Outcomes

- Apply electrical theory
- Install electrical equipment in a residential setting
- Install electrical equipment in a commercial setting
- Analyze industrial equipment

Admission Requirements

- A high school diploma or GED
- Ability to drive and a valid driver's license

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) **ELECTY-308**	Basic Skills for Electrical Wiring ‡	**2**
(1) **ELECTY-310**	Cable Wiring ‡	**2**
(1) **ELECTY-312**	Electrical Raceway Installation ‡	**2**
(1) **ELECTY-340**	Electrical Code Fundamentals 1 ‡	**2**
(1) **ELECTY-378**	Construction Blueprint Reading ‡	**1**
(1) **ELECTY-392**	Principles of Electricity (or) ELECTY-390 Principles of Electricity 1 and ELECTY-391 Principles of Electricity 2	**5**
(2) **ELECTY-314**	Electrical Service Installation ‡	**1**
(2) **ELECTY-328**	Electric Motor Control Wiring ‡	**2**
(2) **ELECTY-341**	Electrical Code Fundamentals 2 ‡	**1**
(2) **ELECTY-382**	Electrical Equipment Circuit Analysis ‡	**1**
(2) **ELECTY-384**	Electrical Design and Estimating ‡	**1**
(2) **ELECTY-386**	Solid State Devices ‡	**2**
(2) **ELECTY-394**	Electrical Apparatus ‡	**4**
(2) **ENG-340**	Workplace Communication	**2**

TOTAL CREDITS: 28

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Electronics Technician Fundamentals

TECHNICAL DIPLOMA | **Program Code: 30-605-1** | Downtown Milwaukee Campus

ELECTRONIC TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
- Electronics Technician Fundamentals, p. 139

Associate Degree
- Biomedical Electronics Technology, p. 49
- Computer Electronics Technology, p. 56
- Electronic Engineering Technology, p. 62
- Electronic Technology – Automation, p. 63

Gain the core competencies of electronics, such as DC/AC principles, digital electronics and microprocessors, through coursework that emphasizes hands-on learning. These skills provide entry-level opportunities for employment, or the base knowledge to pursue further education in electronics.

Career Outlook

Electronics is a rapidly changing field, with jobs in many sectors of industry.

Program Learning Outcomes

- Apply the practical and theoretical foundations of electronics technology to solve problems
- Integrate and repair electronic circuits and systems
- Apply critical thinking skills necessary to install and maintain electronic systems and equipment
- Write technical reports and process documentation

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

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ELCTEC-110	DC/AC Electronics 1 ‡	4
(1) ELCTEC-130	Digital Electronics ‡	3
(1) MATH-115	College Technical Mathematics 1 ‡	5
(2) ELCTEC-111	DC/AC Electronics 2 ‡	3
(2) ELCTEC-120	Electronic Devices ‡	4
(2) ELCTEC-140	Microprocessors ‡	3
	TOTAL CREDITS:	**22**

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Emergency Medical Technician

TECHNICAL DIPLOMA | **Program Code: 30-531-3** | Mequon and Oak Creek campuses

FIRE PROTECTION TECHNICIAN
matc.edu/academics/pathways

Technical Diploma
• Emergency Medical Technician, p. 140

Associate Degree
• Fire Protection Technician, p. 67

Prepare to enter the emergency services field, which involves working with other healthcare professionals to deliver critical, prehospital emergency medical care. This program also is designed to enhance existing skills of individuals working in the field. 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.

Career Outlook

Employment opportunities exist in both the private and public sectors.

Program Learning Outcomes

- Prepare for incident response and EMS operations
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care
- Demonstrate EMT skills associated with established standards and procedures for a variety of patient encounters
- Communicate effectively with others
- Demonstrate professional behavior

(For full description, see matc.edu.)

Admission Requirements

- Age 17 or older (Must be at least 18 at time of National Registry testing)
- Background check
- Students entering the program must have an official high school or GED/HSED transcript

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSE		Credits
EMS-192	EMT	5
	TOTAL CREDITS:	**5**

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

Start Dates: August and January

Community & Human Services
Milwaukee Area Technical College

matc.edu/course-catalog/community-human-services

Emergency Medical Technician – Advanced

TECHNICAL DIPLOMA | **Program Code: 30-531-6** | Mequon and Oak Creek campuses

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.

Career Outlook

Employment opportunities exist in both the private and public sectors.

Program Learning Outcomes

- Prepare for incident response and EMS operations
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care
- Demonstrate AEMT skills associated with established standards and procedures for a variety of patient encounters

(For full description, see matc.edu.)

Admission Requirements

- Age 18 or older
- State of Wisconsin Emergency Medical Technician – Basic License (current)
- American Heart Association CPR, healthcare provider level (current)
- Medical exam, including verification of immunizations and TB testing
- Criminal background check

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSE		Credits
EMS-311	Advanced Intermediate Technician ‡	**4**
	TOTAL CREDITS:	**4**

180 hours total

Clinical hours consist of time in hospital settings or with sponsoring fire department/ambulance providers that use approved preceptors to oversee.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Official Wisconsin Technical College System program title: Advanced EMT.

Start Dates: August and January

Community & Human Services
Milwaukee Area *Technical College*

matc.edu/course-catalog/community-human-services

Emergency Medical Technician – Paramedic

TECHNICAL DIPLOMA | **Program Code: 31-531-1** | Downtown Milwaukee Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Become an integral member of a prehospital emergency care team, providing medical intervention to the ill or injured and continuing that care during transport to a medical facility. You will learn advanced-level prehospital care and techniques as performed by ambulance service providers.

Program Learning Outcomes

- Prepare for incident response and EMS operations
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care
- Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters

(For full description, see matc.edu.)

Admission Requirements

- 18 years of age or older; high school diploma or GED; current Wisconsin EMT-Basic license (or above) and current CPR certification at Healthcare Provider or Professional Rescuer level
- After admitted into program, criminal background check and medical exam required

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Committee on Accreditation of educational programs for the Emergency Medical Services Professions (CoAEMSP), 8301 Lakeview Parkway, Suite 111-312, Rowlett, TX 75088; 214-703-8445; coaemsp.org.

COURSES		Credits
(1)	EMS-911 EMS Fundamentals ‡	2
(1)	EMS-912 Paramedic Medical Principles ‡	4
(1)	EMS-913 Advanced Patient Assessment Principles ‡	3
(1)	EMS-914 Advanced Prehospital Pharmacology ‡	3
(1)	EMS-915 Paramedic Respiratory Management ‡	2
(1)	EMS-916 Paramedic Cardiology ‡	4
(1)	EMS-917 Paramedic Clinical/Field 1 ‡	3
(2)	EMS-918 Advanced Emergency Resuscitation ‡	1
(2)	EMS-919 Paramedic Medical Emergencies ‡	4
(2)	EMS-920 Paramedic Trauma ‡	3
(2)	EMS-921 Special Patient Populations ‡	3
(2)	EMS-922 EMS Operations ‡	1
(2)	EMS-923 Paramedic Capstone Assessment ‡	1
(2)	EMS-924 Paramedic Clinical/Field 2 ‡	4
(2)	SOCSCI-172 Introduction to Diversity Studies	3

TOTAL CREDITS: 41

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Entrepreneurship

TECHNICAL DIPLOMA | **Program Code: 31-145-2** | Downtown Milwaukee Campus (Also offered online)

ENTREPRENEURSHIP
matc.edu/academics/pathways

Certificate
• Entrepreneurship, p. 193

Technical Diploma
• Entrepreneurship, p. 143

This program will prepare you to unite your passion for your work 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 new skills in their current jobs, career advancement or a job change.
MATC's Entrepreneurship Center is on the Downtown Milwaukee Campus in Room M319.

Career Outlook

As the global economy shifts to a leaner, faster environment, opportunities will be especially favorable for entrepreneurs.

Program Learning Outcomes

- Demonstrate an entrepreneurial mindset
- Develop a business canvas and/or plan
- Outline business operational plan
- Develop a business marketing plan

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ECON-195** Economics	3
	(or) ECON-219 Personal Finance and Consumer Economics	
(1)	**ENG-195** Written Communication	3
	(or) ENG-201 English 1 ‡	
(1)	**ENTREP-101** Introduction to Entrepreneurship ^	3
(1)	**ENTREP-102** New Product Development	3
(1)	**ENTREP-104** Business Plan ^	3
(2)	**ACCTG-102** Basic Office Accounting	3
(2)	**ENTREP-103** Strategic Business Communication 1	3
(2)	**ENTREP-105** Strategic Business Communication 2 ‡	3
(2)	**MKTG-102** Marketing Principles	3
(2)	**SOCSCI-197** Contemporary American Society	3

TOTAL CREDITS: 30

( ) Semester order for full-time students.
‡ Prerequisite required.
^ Counts toward earning the Entrepreneurship certificate.
Program curriculum requirements are subject to change.

Start Dates: August/January/June

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Financial Services

TECHNICAL DIPLOMA | **Program Code: 31-114-3** | Downtown Milwaukee, West Allis campuses (Also offered online)

BANKING AND FINANCIAL SERVICES
matc.edu/academics/pathways

Certificate
• Financial Services Trainee, p. 194

Technical Diploma
• Financial Services, p. 144

Associate Degree
• Banking and Financial Services, p. 48

Begin your business career by learning accounting and financial principles for entry-level employment in banks, credit unions, insurance and consumer finance companies, and corporate finance departments.

Career Outlook

Program graduates will have a solid foundation for a range of career opportunities within the industry.

Program Learning Outcomes

- Create reports
- Analyze investments
- Sell financial products and services

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ACCTG-111 Accounting 1 ^	4
(1)	BADM-106 MS Office for Business Applications ^	3
(1)	FIN-110 Principles of Banking	3
(1)	RBUS-102 Mathematics of Business	3
(2)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(2)	FIN-120 Introduction to Money, Banking and Financial Markets ^	3
(2)	FIN-122 Investment Principles ‡	3
(2)	FIN-170 Credit Management	3
(2)	MKTG-104 Selling Principles ^	3

TOTAL CREDITS: 28

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Financial Services Trainee certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Food Service Assistant

TECHNICAL DIPLOMA | **Program Code: 30-316-1** | Downtown Milwaukee Campus

CULINARY ASSISTANT
matc.edu/academics/pathways

Technical Diploma
• Food Service Assistant, p. 145

Technical Diploma
• Culinary Assistant, p. 131

CULINARY ARTS
matc.edu/academics/pathways

Technical Diploma
• Food Service Assistant, p. 145

Associate Degree
• Culinary Arts, p. 59

Here's your recipe for learning to prepare and cook a variety of foods that require a short preparation time. This one-semester program focuses on developing skills to begin a career in the food service industry.

Career Outlook

Graduates will have entry-level skills for taking orders and serving patrons, and performing a variety of food preparation duties.

Program Learning Outcomes

- Demonstrate the ability to clean food-preparation areas, cooking surfaces and utensils according to industry standards
- Differentiate proper handling of prepared-to-order food compared to food that is kept warm until sold
- Assist cooks and kitchen staff with various tasks as needed
- Cut, slice or grind meat, poultry and seafood to prepare for cooking

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	CULART-116	Mise en Place/Culinary Fundamentals ‡	2
(1)	CULART-128	Vegetables, Starches and Grains ‡	1
(1)	CULMGT-112	Food Service Sanitation	2
		TOTAL CREDITS:	**5**

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area ***Technical College***

matc.edu/course-catalog/creative-arts-design-media

Foundations of Lodging and Hospitality Management

TECHNICAL DIPLOMA | **Program Code: 31-109-5** | Downtown Milwaukee Campus

HOTEL/HOSPITALITY MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
- Foundations of Lodging and Hospitality Management, p. 146

Associate Degree
- Hotel/Hospitality Management, p. 72

Enter the growing hospitality industry and prepare for a career managing hotels and other facilities that offer accommodations.

Career Outlook

Employment opportunities in this diverse industry are increasing, but are also competitive as more job candidates enter this field.

Program Learning Outcomes

- Apply fundamentals to the operations within a hospitality organization
- Demonstrate entry-level use of hospitality technology
- Identify processes to meet organizational goals
- Identify the various components that make up the hospitality industry
- Identify resources used in the hospitality industry for problem solving

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	HOTEL-110	Front Office Procedures and Management 3
(1)	HOTEL-122	Basic Hospitality Accounting 3
(1)	HOTEL-135	Hospitality Professional Service and Development 3
(1)	MEET-151	Introduction to Hospitality/Tourism ... 3
(2)	CULMGT-117	Hospitality Law and Liability 3
(2)	HOTEL-105	Hospitality Marketing, Sales and Revenue Strategy 3
(2)	HOTEL-112	Front Office Computerized Procedures ‡ 3
(2)	HOTEL-120	Building Operations and Security 3
(2)	HOTEL-127	Fundamentals of Meetings and Special Events 3
(2)	HOTEL-150	Housekeeping Operations 2

TOTAL CREDITS: 32

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Front-End Web Developer

TECHNICAL DIPLOMA | **Program Code: 31-206-1** | Downtown Milwaukee Campus

WEB & DIGITAL MEDIA DESIGN
matc.edu/academics/pathways

Technical Diploma
• Front-End Web Developer, p. 147

Associate Degree
• Web & Digital Media Design, p. 105

To prepare for this field's ever-changing technology, you will attain in-depth skills in web design, design tools and web development languages. Coursework includes web marketing, and the designing and publishing of several websites using multiple web-development languages.

Career Outlook

Demand for web designers and web developers is growing steadily as more businesses and organizations rely on functional and flexible websites.

Program Learning Outcomes

- Design websites or applications
- Utilize essential data technologies
- Develop user interfaces

Admission Requirements

- A high school diploma or GED
- Demonstration of basic computer skills in operating systems, word processing and the internet

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**ITDEV-117**	Logic and Problem-Solving **3**
(1)	**MKTG-165**	Digital Marketing **3**
(1)	**WEBDEV-102**	Introduction to Digital Media **3**
(1)	**WEBDEV-114**	Web Development With HTML/CSS **3**
(1)	**WEBDEV-119**	Web Design Overview **3**
(2)	**WEBDEV-123**	Interactive Design ‡ **3**
(2)	**WEBDEV-124**	Database Web Design With PHP and MySQL ‡ **3**
(2)	**WEBDEV-133**	Content Management Systems ‡ ..... **3** (or) WEBDEV-132 Rich Media for the Web ‡
(2)	**WEBDEV-134**	Responsive Web Design ‡ **3**
(2)	**WEBDEV-140**	Web Development With JavaScript and jQuery ‡ **3**

TOTAL CREDITS: 33

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Health Unit Coordinator

TECHNICAL DIPLOMA Downtown Milwaukee Campus (Also offered online)

HEALTHCARE SERVICES MANAGEMENT
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Health Unit Coordinator, p. 148
- Phlebotomy, p. 166

Associate Degree
- Healthcare Services Management, p. 71

Enter the healthcare field in a non-direct patient care role. This program prepares you for responsibilities such as order transcription, clerical support functions and customer service interactions. Technical courses are offered via flexible hybrid (in-class/online) and online instructional formats.

Career Outlook

Positions are available in hospitals, long-term care facilities and clinics. The Wisconsin Technical College System in October 2019 identified this profession as the No. 1 in-demand area of the Top 50 jobs.

Program Learning Outcomes

- Manage multiple sources of client information
- Function as an integrated member of the healthcare team
- Coordinate operational processes
- Communicate professionally utilizing multiple modalities
- Process healthcare orders

Admission Requirements

High school diploma or GED required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	HEALTH-101	Medical Terminology * ^ 3
(1)	HEALTH-104	Culture of Healthcare * ^ 2
(1)	HEALTH-107	Digital Literacy for Healthcare * ^ 2
(2)	HSM-140	Health Unit Coordinator Procedures 1 ‡ 3
(2)	HSM-141	Health Unit Coordinator Procedures 2 ‡ 3
(2)	HSM-142	Health Unit Coordinator Clinical ‡ 3

TOTAL CREDITS: 19

( ) Semester order for full-time students.
‡ Prerequisite required.
** Must be taken prior to entering the program.*
^ Counts toward earning the Healthcare Customer Service certificate.
Program curriculum requirements are subject to change.

Start Dates: August/January/June

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

IT Computer Support Technician

TECHNICAL DIPLOMA | **Program Code: 31-154-6** | All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Coursework in this two-semester program prepares you for industry-sought certifications, including CompTIA's A+, Network+, Security+, Microsoft Certified Professional in Windows Desktop, Microsoft Enterprise Desktop Support Technician (MCITP), HDI-SCA, HDI-DST, ITIL Foundation and more.

Career Outlook

According to the U.S. Bureau of Labor Statistics, employment of IT computer support specialists is projected to grow 17% from 2012 to 2022.

Program Learning Outcomes

- Provide entry-level end-user support
- Manage operating systems and application software
- Support information technology hardware
- Provide basic network support for existing network installations

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra
- Knowledge of computer fundamentals

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ENG-195	Written Communication	3
	(or) ENG-201 English 1 ‡	
(1) ITSUP-101	Computer Information Systems Fundamentals ^ *	3
(1) ITSUP-109	Microsoft Office for IT Professionals * †	3
(1) ITSUP-111	CompTIA A+ Software Support †	3
(1) ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL) ^ * †	3
(2) ITNET-101	Network Communications (Network+)	3
(2) ITSEC-124	Network Security (Security+)	3
(2) ITSUP-102	CompTIA A+ Essentials ^	3
(2) ITSUP-155	IT Career Skills	3

TOTAL CREDITS: 27

( ) Semester order for full-time students.

‡ Prerequisite required.

** Counts toward earning the Level 2 - Service Center Technician certificate.*

† Counts toward earning the Microsoft Enterprise Desktop Support Specialist certificate.

^ Counts toward earning the Service Center Technician certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Digital Forensics Analyst

TECHNICAL DIPLOMA | **Program Code: 31-150-1** | All campuses

Enter the growing field of digital and computer forensics investigation. The comprehensive coursework includes material from basic networking, basic security, network security, information systems auditing, risk management, and security policy and procedures. Several courses cover specialized areas of forensics, such as mobile forensics and internet forensics. You can work toward earning several industry certifications.

Career Outlook

Due to increases in cyber-crimes, this is projected to be a high-demand occupation.

Program Learning Outcomes

- Analyze a cyber-crime 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
- Recover files on various types of storage devices, using different operating systems and network systems
- Discuss the legal and ethical issues related to acquisition and analysis of digital evidence

(For full description, see matc.edu.)

Admission Requirements

- A high school diploma or GED
- High school-level algebra
- Student also needs to meet one of these requirements: Be currently working in the IT security field or related field (or) be currently enrolled in the IT Information Systems Security Specialist associate degree program (or) receive approval from the program chairperson

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ITNET-131 Introduction to Networks (Cisco 1)	3
(1)	ITNET-132 Routing/Switching Essentials (Cisco 2) ‡	3
(1)	ITSEC-114 Information Security Principles	3
(1)	ITSEC-124 Network Security (Security+)	3
(2)	ITNET-161 Linux Overview	2
(2)	ITSEC-126 Computer Forensics	3
(2)	ITSEC-151 IT – Auditing	3
(2)	ITSEC-152 Information Security Risk Management	3
(2)	ITSEC-156 Mobile Devices Forensics	3
(3)	ENG-195 Written Communication	3
	(or) ENG-201 English 1 ‡	
(3)	ITSEC-166 Advanced Forensics	3
(3)	ITSEC-176 Malware Forensics	3
(4)	ITSEC-146 Security Measures and Intrusion Detection	3

TOTAL CREDITS: 38

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

IT Help Desk Support Specialist

TECHNICAL DIPLOMA | **Program Code: 31-154-7** | All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Prepare for industry-sought certifications including CompTIA's A+, Network+, Security+ and Mobility+ Device Administrators (iOS, Android and Windows), Microsoft Certified Professional in Windows Desktop, Microsoft Enterprise Desktop Support Technician (MCITP), Apple OSX Certified Support Professional (ACSP), HDI-SCA, HDI-DST and ITIL Foundation.

Career Outlook

Employment opportunities are expected to increase about 23% in Wisconsin, and 19% nationally, between 2014 and 2024.

Program Learning Outcomes

- Manage information technology hardware
- Support computer networks
- Provide end-user support

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication 3 (or) ENG-201 English 1 ‡
(1)	ITSUP-101	Computer Information Systems Fundamentals ^ * 3
(1)	ITSUP-109	Microsoft Office for IT Professionals * † 3
(1)	ITSUP-111	CompTIA A+ Software Support † 3
(1)	ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL) ^ * † 3
(2)	ITNET-101	Network Communications (Network+) 3
(2)	ITSUP-102	CompTIA A+ Essentials ^ 3
(2)	ITSUP-177	IT Projects, Teamwork and Self-Management 3
(3)	ITSUP-150	Mobile Device Repair and Support 3
(3)	ITSUP-152	Apple OSX Certified Support Professional (ACSP) 3
(3)	ITSUP-155	IT Career Skills 3
(4)	ITSEC-124	Network Security (Security+) 3
(4)	ITSUP-153	Mobile Device Administration 3
(4)	ITSUP-198	Computer Support Specialist Internship ‡ 1
(4)	ITSUP-199	Integrated Project – Computer Support Specialist 1

TOTAL CREDITS: 41

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Service Center Technician certificate.

** Counts toward earning the Level 2 - Service Center Technician certificate.*

† Counts toward earning the Microsoft Enterprise Desktop Support Specialist certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT Networking and Infrastructure Administration

TECHNICAL DIPLOMA | **Program Code: 31-150-2** | All campuses

IT NETWORK SPECIALIST
matc.edu/academics/pathways

Technical Diploma
- IT Networking and Infrastructure Administration, p. 152

Associate Degree
- IT Network Specialist – Online Accelerated, p. 80
- IT Network Specialist, p. 81

Through hands-on coursework, you will set up network operating systems and work with emerging technologies. Certification preparations in this program include: VMware Certified Professional (VCP-DCV), Cisco Certified Networking Associate (CCNA), Microsoft Certified Solutions Associate (MCSA) Windows Server and Client, and CompTIA (A+, Network+ and Security+).

Career Outlook

Opportunities are strong, including positions for network administrators, specialists and technicians.

Program Learning Outcomes

- Implement network security, firewalls, ACLs and VLANs
- Install network/server hardware, software and operating systems
- Support, monitor and maintain computers and computer networks
- Utilize emerging technologies such as machine virtualization, wireless networking and cloud computing

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or one semester of college-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ITNET-101	Network Communications (Network+) ..3
(1)	ITNET-110	Managing Windows Desktop (Client) Operating System 3
(1)	ITNET-131	Introduction to Networks (Cisco 1).....3
(2)	ITNET-112	MS Server Administration 1.....3
(2)	ITNET-132	Routing/Switching Essentials (Cisco 2) ‡ ..3
(2)	ITNET-157	Emerging IT Technologies ‡.....3
(2)	MATH-123	Math With Business Applications ‡ 3
		(or) Any 200-level MATH course
(3)	ITNET-111	MS Server Administration 2.....3
(3)	ITNET-133	Scaling Networks (Cisco 3) ‡.....3
(3)	ITNET-134	Connecting Networks (Cisco 4) ‡.....3

TOTAL CREDITS: 30

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

Start Dates: August and January

STEM
Milwaukee Area *Technical College*

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

IT User Support Technician

TECHNICAL DIPLOMA | **Program Code: 30-154-6** | All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Receive Apple support training, along with mobile device repair and administration, through this 12-credit program. The coursework prepares you for Apple ACSP, CompTIA's Mobility+ and HDI-SCA, HDI-DST and ITIL Foundation industry-standard certifications.

Career Outlook

According to the Bureau of Labor Statistics, employment of IT computer support specialists is projected to grow 17% in the years 2012 through 2022.

Program Learning Outcomes

- Support and maintain computer and mobile hardware
- Support and maintain computer operating systems
- Manage computer network connected devices
- Demonstrate customer service skills as an IT professional

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra
- Knowledge of computer fundamentals

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL)	3
(1) ITSUP-150	Mobile Device Repair and Support	3
(1) ITSUP-152	Apple OSX Certified Support Professional (ACSP)	3
(1) ITSUP-153	Mobile Device Administration	3

TOTAL CREDITS: 12

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

Start Dates: August and January

STEM
Milwaukee Area Technical College
matc.edu/course-catalog/stem

Landscape Horticulture Technician

TECHNICAL DIPLOMA | **Program Code: 31-001-5** | Mequon Campus

LANDSCAPE HORTICULTURE
matc.edu/academics/pathways

Technical Diploma
• Landscape Horticulture Technician, p. 154

Associate Degree
• Landscape Horticulture, p. 83

Land an entry-level position that meets your desire to work outdoors. This program prepares students for positions such as groundskeepers, greenhouse workers and landscape construction workers.

Career Outlook

Locally the job growth for entry-level landscaping positions indicates a high demand for skilled workers.

Program Learning Outcomes

- Utilize growing media
- Examine plant health
- Communicate as a horticulture professional
- Provide horticulture maintenance
- Apply the principles of plant science

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	HORT-111	Introduction to Horticulture 3
(1)	HORT-112	Horticulture Soils 3
(1)	HORT-114	Survey of Woody Ornamental Plants .. 3
(1)	HORT-116	Landscape Equipment 3
(2)	HORT-113	Ornamental Plant Health Care 3
(2)	HORT-118	Landscape Business Principles 3
(2)	HORT-122	Landscape Design I 3
(2)	HORT-126	Landscape Estimating and Bidding 3
(2)	HORT-159	Survey of Herbaceous Plants 2
(2)	SOCSCI-197	Contemporary American Society ..... 3 (or) Any 200-level SOCSCI or HIST course

TOTAL CREDITS: 29

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Machine Tool Operations

TECHNICAL DIPLOMA | **Program Code: 31-420-1** | Downtown Milwaukee Campus

CNC PROGRAMMING
matc.edu/academics/pathways

Technical Diploma
- CNC Technician, p. 129
- Machine Tool Operations, p. 155

Learn in-demand skills for machine tool operations. Students will choose one of two groups of courses to focus on – either Computer Numerical Control (CNC) machine setup and operation, or CNC Swiss turning center setup and operation.

Career Outlook

CNC machine tool operators with up-to-date experience are in demand.

Program Learning Outcomes

- Apply basic safety practices in the machine shop
- Interpret industrial/engineering drawings
- Apply precision measuring methods to part inspection
- Perform basic machine tool equipment set-up and operation
- Perform programming, set-up and operation of CNC machine tools

Admission Requirement

- A high school diploma or GED

Note: Students will need a tablet or mobile device to complete course requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) **MACHTL-360**	Metrology	**1**
(1) **MACHTL-367**	Machine Tool Technology	**1**
(1) **MACHTL-384**	Machine Trades Mathematics 1	**1**
(1) **MDRAFT-385**	Machine Blueprint Reading 1	**1**
(1) **MACHTL-347**	Single-Spindle Auto Screw Machine 1 (or) MACHTL-300 Engine Lathe 1	**3**
(1) **MACHTL-348**	Single-Spindle Auto Screw Machine 2 ‡ (or) MACHTL-301 Engine Lathe 2 ‡	**3**
(1) **MACHTL-361**	Multiple-Spindle Auto Screw Machine 1 ‡ (or) MACHTL-309 Manual Vertical Milling Machine 1	**3**
(1) **MACHTL-362**	Multiple-Spindle Auto Screw Machine 2 ‡ (or) MACHTL-310 Manual Vertical Milling Machine 2 ‡	**3**
(2) **ENG-340**	Workplace Communication	**2**
(2) **MACHTL-304**	Introduction to CNC Programming ‡	**1**
(2) **MACHTL-385**	Machine Trades Mathematics 2 ‡	**1**
(2) **MACHTL-391**	Quality Control ‡	**1**
(2) **MDRAFT-386**	Machine Blueprint Reading 2 ‡	**1**
(2) **MACHTL-371**	CNC Swiss Turning Center 1 (or) MACHTL-320 Introduction to CNC Turning Centers ‡	**4**
(2) **MACHTL-372**	CNC Swiss Turning Center 2 ‡ (or) MACHTL-322 Introduction to CNC Vertical Machining Centers ‡	**4**
(2) **MACHTL-373**	CNC Swiss Turning Center 3 ‡ (or) MACHTL-325 Surface Grinding	**4**

TOTAL CREDITS: 34

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Manufacturing Maintenance

TECHNICAL DIPLOMA | **Program Code: 32-462-1** | Downtown Milwaukee Campus

Find your future in the manufacturing industry with a role in the fast-growing field of manufacturing maintenance. Through this program, you will gain hands-on, practical experience related to installing, maintaining, diagnosing and repairing equipment used in manufacturing industries, as well as develop the skills for maintaining manufacturing facilities/building systems.

Career Outlook

There is strong demand for maintenance workers at manufacturing sites.

Program Learning Outcomes

- Demonstrate safe work procedures
- Install industrial equipment and systems
- Maintain industrial equipment and systems
- Troubleshoot industrial equipment and systems
- Repair industrial equipment and systems
- Communicate technical information

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**CONSTR-302** OSHA Safety/CPR for the Trades ‡	1
(1)	**ELECTY-308** Basic Skills for Electrical Wiring ‡	2
(1)	**ELECTY-390** Principles of Electricity 1	3
(1)	**ENG-340** Workplace Communication	2
(1)	**HVAC1-300** Basic Refrigeration/System Operation	4
(1)	**HVAC1-325** Oil Furnace Service and Maintenance	3
(1)	**MACHTL-360** Metrology	1
(1)	**QLTYIN-103** MSSC Safety	1
(1)	**QLTYIN-104** MSSC Quality	1
(2)	**ELECTY-328** Electric Motor Control Wiring ‡	2
(2)	**ELECTY-391** Principles of Electricity 2 ‡	2
(2)	**HVAC1-301** Introduction to Refrigeration Service/ Applications ‡	4
(2)	**HVAC1-326** Gas Furnace Servicing and Maintenance ‡	3
(2)	**MATH-113** College Technical Mathematics 1A ‡	3
(2)	**MDRAFT-385** Machine Blueprint Reading 1	1
(2)	**QLTYIN-105** MSSC Process	1
(2)	**QLTYIN-106** MSSC Maintenance	1
(3)	**HYDPNU-330** Basic Hydraulics/Pneumatics	5
(3)	**HYDPNU-338** Mechanical Systems	4
(3)	**MFGMNT-352** Mechanical Drives 1	2
(3)	**WELD-300** Fundamentals of Arc Welding	1
(3)	**WELD-301** General Arc Welding ‡	2
(4)	**HYDPNU-336** Fluid Power Circuits	4
(4)	**MACHTL-346** Machine Shop for Related Trades	2
(4)	**MFGMNT-332** Rigging and Lifting	2
(4)	**MFGMNT-353** Mechanical Drives 2 ‡	2
(4)	**MFGMNT-359** Mechanical Fabrication	2
(4)	**WELD-305** Fundamentals of Oxyfuel Welding	1

TOTAL CREDITS: 62

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Mechanical and Computer Drafting

TECHNICAL DIPLOMA | **Program Code: 31-421-2** | Downtown Milwaukee Campus

MECHANICAL DESIGN TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
• Mechanical and Computer Drafting, p. 157

Associate Degree
• Mechanical Design Technology, p. 86

This program prepares you to be a detail drafter in the mechanical drafting field. For a new product to become reality, it must exist in the mind of the engineer, designer or drafter; then it is the detail drafter, working from design layouts, sketches and handbooks, who creates working drawings that aid in manufacturing the product.

Career Outlook

The employment outlook is favorable for mechanical drafters with current training in computer-aided design and drafting (CADD) systems.

Program Learning Outcomes

- Prepare detail and assembly drawings for documentation of mechanical components and products
- Create CAD Geometry, parts, and assemblies
- Design mechanical components and products
- Select purchased parts

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra or equivalent

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	CIVIL-102 Introduction to AutoCAD	2
(1)	CIVIL-105 Computer Applications	2
(1)	MCDESG-102 Technical Drafting 1 ‡	3
(1)	MCDESG-162 Engineering Materials	2
(2)	MATH-115 College Technical Mathematics 1 ‡ (or) MATH-201 College Algebra ‡	5
(2)	MCDESG-104 Technical Drafting 2 With CAD ‡	3
(2)	MCDESG-114 SolidWorks 1 ‡	2
(3)	MCDESG-106 Advanced Engineering Graphics ‡	3
(3)	MCDESG-124 SolidWorks 2 ‡	2
(3)	MCDESG-163 Machining Processes ‡	2

TOTAL CREDITS: 26

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

Start Date: August

STEM
Milwaukee Area Technical College

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Medical Assistant

TECHNICAL DIPLOMA | **Program Code: 31-509-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Enter the healthcare field with skills to perform various clinical, laboratory and administrative procedures. During the clinical practicum, you have an opportunity to acquire additional healthcare experience while performing a 176-hour unpaid externship held at partnering healthcare facilities. Graduates are eligible to register for American Association of Medical Assistants (AAMA) exam and qualify to become a Certified Medical Assistant (CMA).

Program Learning Outcomes

- Perform medical office administrative functions
- Provide patient care in accordance with regulations, policies, laws, and patient rights
- Perform medical laboratory procedures
- Demonstrate professionalism in a healthcare setting
- Demonstrate safety and emergency practices in a healthcare setting

Admission Requirements

High school diploma or GED required; biology coursework recommended. This program admits students through a petition selection process. Cumulative GPA of 2.3 or higher required to petition. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater, FL 33763; 727-210-2350; caahep.org/Accreditation/CAAHEP-Accreditation-Process.aspx.
Accreditation is based upon the recommendation of the Curriculum Review Board of the American Association of Medical Assistants' Endowment (CRB-AAMAE).

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES			Credits
(1)	**HEALTH-101**	Medical Terminology *	3
(1)	**HEALTH-107**	Digital Literacy for Healthcare *	2
(1)	**MEDAST-301**	Medical Assistant Administrative Procedures ‡	2
(1)	**MEDAST-302**	Human Body in Health and Disease ‡	3
(1)	**MEDAST-303**	Medical Assistant Lab Procedures 1 ‡	2
(1)	**MEDAST-304**	Medical Assistant Clinical Procedures 1 ‡	4
(1)	**MEDAST-309**	Medical Law, Ethics and Professionalism	2
(2)	**ENG-195**	Written Communication (or) ENG-201 English 1 ‡	3
(2)	**HEALTH-308**	Pharmacology for Allied Health ‡	2
(2)	**MEDAST-305**	Medical Assistant Laboratory Procedures 2 ‡	2
(2)	**MEDAST-306**	Medical Assistant Clinical Procedures 2 ‡ **	3
(2)	**MEDAST-307**	Medical Office Insurance and Finance ‡	2
(2)	**MEDAST-310**	Medical Assistant Practicum ‡ **	3

TOTAL CREDITS: 33

( ) Semester order for full-time students.

‡ Prerequisite required.

** 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.

Program curriculum requirements are subject to change.

MATC's Medical Assistant program has an average job placement rate of 87% for the past five years (2013-2017), which exceeds the Medical Assisting Education Review Board threshold of >=60%. For 2017, our employer satisfaction surveys for Medical Assisting graduates were 100%.

Medical Billing

TECHNICAL DIPLOMA | **Program Code: 31-160-5** | West Allis Campus

MEDICAL ADMINISTRATIVE PROFESSIONAL
matc.edu/academics/pathways

Technical Diploma
• Medical Billing, p. 159

Associate Degree
• Medical Administrative Specialist, p. 87

To perform essential functions of healthcare administration, you will gain knowledge of office accounting, medical insurance, efficient office practices, and basic human anatomy. Courses are offered in a blended format, which may include traditional classroom and online instruction.

Career Outlook

Employment opportunities are expected to increase. In addition to healthcare facilities, medical billers work in medical schools and government agencies.

Program Learning Outcomes

- Perform routine healthcare administrative procedures
- Process insurance claims
- Apply technology skills to business and administrative tasks
- Maintain internal and external relationships
- Model professionalism in the workplace

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**BRHLTH-124** Medical Office Terminology 1	3
(1)	**OFTECH-101** Office Technologies 1	3
(1)	**OFTECH-103** Keyboard and Keypad	1
(1)	**OFTECH-122** Business English Essentials	3
(2)	**BRHLTH-112** Computerized Medical Billing ‡	3
(2)	**BRHLTH-125** Medical Office Terminology 2 ‡	3
(2)	**BRHLTH-170** Medical Insurance Principles and Coding ‡	3
(2)	**BRHLTH-174** Medical Claims Reimbursement ‡	2
(2)	**BRHLTH-197** Medical Office Career Investigation ‡	3
(2)	**NATSCI-189** Basic Anatomy	3
	(or) Any 200-level NATSCI course	
	TOTAL CREDITS:	**27**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Medical Coding Specialist

TECHNICAL DIPLOMA | **Program Code: 31-530-2** | Downtown Milwaukee Campus

HEALTH INFORMATION TECHNICIAN
matc.edu/academics/pathways

Certificate
• Healthcare Customer Service, p. 195

Technical Diploma
• Medical Coding Specialist, p. 160

Associate Degree
• Health Information Technology, p. 70

You will be prepared as an entry-level coding specialist after learning medical diagnosis and procedure codes using two coding systems for billing and data collection. Graduates can be certified through the American Health Information Management Association and the American Academy of Professional Coders.

Career Outlook

Employment opportunities exist in hospitals, clinics and physicians' offices.

Program Learning Outcomes

- Collect health data
- Model professional behaviors and ethics
- Use electronic applications to support coding and data collection
- Apply coding and reimbursement systems

Admission Requirements

High school diploma or GED, and one year of high school-level chemistry required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	HEALTH-101	Medical Terminology ^ 3
(1)	HEALTH-107	Digital Literacy for Healthcare ^ 2
(1)	HIT-182	Human Disease for Health Professions ‡ 3
(1)	HIT-197	ICD Diagnosis Coding ‡ 3
(1)	HIT-199	ICD Procedure Coding ‡ 2
(1)	NATSCI-189	Basic Anatomy 3
(2)	HEALTH-104	Culture of Healthcare ^ 2
(2)	HIT-159	Healthcare Revenue Management 3
(2)	HIT-162	Foundations of HIM ‡ 3
(2)	HIT-165	Intermediate Coding ‡ 3
(2)	HIT-184	CPT Coding ‡ 3

TOTAL CREDITS: 33

( ) Semester order for full-time students.
^ Counts toward earning the Healthcare Customer Service certificate.
‡ Prerequisite required.
Program curriculum requirements are subject to change.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Medical Interpreter

TECHNICAL DIPLOMA | **Program Code: 31-538-1** | Downtown Milwaukee Campus

This program is being developed as a Career Pathway. Contact an MATC advisor for information.

Interpreters form a vital link in providing better healthcare. This program prepares you for employment to facilitate the communication between patients with limited English proficiency and medical personnel.

Career Outlook

The increasing demand for professional medical interpreters can be attributed to the need to provide quality care through effective communication and federal laws requiring language assistive services.

Program Learning Outcomes

- Interpret bilaterally into English or Spanish in real time
- Render oral sight translations from English and Spanish texts
- Translate English and Spanish documents into target language

Admission Requirements

High school diploma or GED required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**MEDINT-102** Spanish Regionalisms and English Variants	**3**
(1)	**MEDINT-103** Introduction to Medical Interpretation ‡	**3**
(1)	**MEDINT-104** Applied Medical Interpretation 1	**3**
(1)	**MEDINT-107** Bilingual Medical Terminology	**5**
(1)	**MEDINT-112** Dual Language Enhancement for Healthcare Providers ‡	**3**
(2)	**MEDINT-101** Cultural Awareness	**3**
(2)	**MEDINT-106** Introduction to Medical Translation	**3**
(2)	**MEDINT-108** Ethics and Standards for Medical Interpreters	**3**
(2)	**MEDINT-110** Applied Medical Interpretation 2 ‡	**3**
(2)	**MEDINT-111** Applied Medical Interpretation 3 ‡	**3**
(2)	**PSYCH-199** Psychology of Human Relations	**3**
	(or) Any 200-level PSYCH course	

TOTAL CREDITS: 35

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

All credits in this technical diploma must be earned at MATC with a 2.0 GPA or higher.

Start Date: August

Healthcare Services

Milwaukee Area **Technical College**

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Nursing Assistant

TECHNICAL DIPLOMA | **Program Code: 30-543-1** | Downtown Milwaukee, Oak Creek, West Allis campuses

This technical diploma ladders into both the Practical Nursing technical diploma and the Registered Nursing associate degree. Contact an MATC advisor for details.

Bilingual (Spanish) section also offered

To become an entry-level bedside caregiver, you will learn basic nursing skills and procedures to assist others with their daily living activities and specialized care needs. This program can fulfill the Nursing Assistant training requirement for admission into MATC's nursing programs.

High school students may be eligible for dual enrollment to earn college credits while in high school and have the opportunity for employment.

Program Learning Outcomes

- Communicate and interact effectively with clients, family, and co-workers
- Maintain and protect client rights
- Report information and record observations
- Demonstrate the ethical and legal responsibilities of the NA/HHA
- Provide safe care to a diverse population, meeting personal, physical and psychosocial client needs
- Assist with client rehabilitation and restorative care, promoting independence

(For full description, see matc.edu.)

Admission Requirements

A high school diploma or GED is recommended. Health requirements, criminal background check and additional documents are required for admission; see this program's webpage at matc.edu for details.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSE		Credits
NRSNA-300	Nursing Assistant ‡	3
	TOTAL CREDITS:	**3**

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Classes offered mornings, evenings and weekends.

Start Dates: Offered year-round

Healthcare Services

Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

Office Technology Assistant

TECHNICAL DIPLOMA | **Program Code: 31-106-1** | West Allis Campus

ADMINISTRATIVE PROFESSIONAL
matc.edu/academics/pathways

Technical Diploma
• Office Technology Assistant, p. 163

Associate Degree
• Administrative Professional, p. 31

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.

Program Learning Outcomes

- Perform accurate workplace communications
- Use technology skills for business tasks
- Perform routine office procedures
- Demonstrate professionalism and effective workplace relationships

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) OFTECH-101	Office Technologies 1	3
(1) OFTECH-103	Keyboard and Keypad	1
(1) OFTECH-119	Information Management	3
(1) OFTECH-122	Business English Essentials	3
(1) OFTECH-182	Customer Service Skills	3
(2) OFTECH-104	Budgeting Basics for Support Personnel	3
(2) OFTECH-133	Business Document Production 1 ‡	3
(2) OFTECH-165	Administrative Office Procedures 1 ‡	3
(2) OFTECH-184	MS Office: Word, Excel, Access and PowerPoint ‡	3
(2) OFTECH-196	Administrative Professional Internship ‡	1

TOTAL CREDITS: 26

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Paralegal Studies

TECHNICAL DIPLOMA | **Program Code: 30-110-2** | Downtown Milwaukee Campus

This program is designed for students who already have a bachelor's degree with at least 18-credits in Liberal Arts courses. You will gain the foundation for a paralegal career in a law office, government agency, private organization or corporation. Classes are offered face-to-face at the Downtown Milwaukee Campus. Selected courses are available online and in blended/accelerated format. At least 10-credits of legal specialty (PLEGAL) courses must be taken via face-to-face instruction.

Career Outlook

Typical job duties include conducting client interviews, obtaining case information, performing legal research, and providing general assistance to attorneys. Paralegals are required to work under the supervision of an attorney to avoid the unauthorized practice of law. Paralegals may not provide legal services directly to the public, except as permitted by law.

Program Learning Outcomes

- 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

Bachelor's degree with at least 18 credits in Liberal Arts courses required; applicants should submit an official college transcript to the Downtown Milwaukee Campus Admissions Office.

Transfer of legal specialty coursework credit (PLEGAL designated courses) is accepted, subject to review by the Program Coordinator for course compatibility, only from ABA approved paralegal programs or from accredited law schools. Transfer is limited to a maximum of 9 credits.

Start Dates: August/January/June

Community & Human Services
Milwaukee Area **Technical College**

matc.edu/course-catalog/community-human-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195*** Written Communication	**3**
	(or) ENG-201 English 1 ‡	
(1)	**PLEGAL-101** Introduction to Paralegalism	**3**
(1)	**PLEGAL-103** Legal Research ‡	**3**
(1)	**PLEGAL-105** Civil Procedure ‡	**3**
(2)	**PLEGAL-107** Legal Writing ‡	**3**
(2)	**PLEGAL-111** Litigation Practice Systems ‡	**3**
(2)	**PLEGAL-114** Trusts and Estates – Probate Systems ‡	**3**

TOTAL CREDITS: 21

( ) Semester order for full-time students.

** Students admitted to the technical diploma program should request that undergraduate credit be awarded for ENG-195.*

‡ Prerequisite required, however, students admitted to the technical diploma program can register for paralegal specialty (PLEGAL) courses. Diploma students must request Prerequisite Waivers for the courses they wish to take via their Self-Service account.

It is recommended that PLEGAL-103 be taken prior to PLEGAL-107, and that PLEGAL-105 be taken prior to PLEGAL-111.

A minimum of 9 credits of legal specialty courses at MATC must be completed.

Program curriculum requirements are subject to change.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved by the American Bar Association, 321 North Clark Street, Chicago, IL 60654; 312-988-5616; americanbar.org/groups/paralegals/.

Pharmacy Technician

TECHNICAL DIPLOMA | **Program Code: 31-536-1** | Downtown Milwaukee Campus

PHARMACY TECHNICIAN
matc.edu/academics/pathways

Certificate
• Healthcare Customer Service, p. 195

Technical Diploma
• Pharmacy Technician, p. 165

Gain the skills and knowledge needed to be a pharmacy technician in a variety of practice settings. Pharmacy technicians work under the supervision of a pharmacist. Graduates are prepared to take the Pharmacy Technician Certification Board's Certified Pharmacy Technician exam. All graduates must be 18 years of age or older.

Career Outlook

Due to the evolving role of the pharmacy technician and the aging population, there is a need for trained pharmacy technicians.

Program Learning Outcomes

- Demonstrate personal/interpersonal knowledge and skills in the practice of pharmacy
- Demonstrate foundational professional knowledge and skills for the practice of pharmacy
- Prepare prescriptions/medication orders and pharmaceutical products for dispensing, distribution, and disposal
- Compound sterile and nonsterile medications
- Follow established policies and procedures for procurement, billing, reimbursement and inventory management

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED required. This program admits students through a petition selection process. See program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the ASHP/ACPE Pharmacy Technician Accreditation Commission, 4500 East-West Highway, Suite 900, Bethesda, MD 20814; 301-664-8835 or 301-657-3000; ashp.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	HEALTH-101	Medical Terminology ^ 3
(1)	HEALTH-104	Culture of Healthcare ^ 2
(1)	HEALTH-107	Digital Literacy for Healthcare ^ 2
(1)	PHARMT-300	Orientation to Pharmacy Operations ‡ 1
(1)	PHARMT-302	Pharmaceutical Calculations ‡ 2
(1)	PHARMT-303	Introduction to Drug Classification ‡ .. 2
(1)	PHARMT-307	Community Pharmacy Lab ‡ 1
(1)	PHARMT-395	Federal Laws, Ethics and Customer Service ‡ 1
(2)	PHARMT-306	Pharmacy Clinical Experience 1 ‡ 2
(2)	PHARMT-310	Institutional Pharmacy Practice ‡ 1
(2)	PHARMT-311	Orientation to Sterile Solutions ‡ 2
(2)	PHARMT-312	Pharmacy Operations Laboratory ‡ 3
(2)	PHARMT-314	Pharmacy Clinical Experience 2 ‡ 2
(2)	PSYCH-199	Psychology of Human Relations ..... 3 (or) PSYCH-231 Introductory Psychology

TOTAL CREDITS: 30

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Healthcare Customer Service certificate.

Program curriculum requirements are subject to change.

Phlebotomy

TECHNICAL DIPLOMA | **Program Code: 30-513-1** | Downtown Milwaukee Campus

HEALTHCARE SERVICES MANAGEMENT
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Health Unit Coordinator, p. 148
- Phlebotomy, p. 166

Associate Degree
- Healthcare Services Management, p. 71

Phlebotomists perform functions such as blood drawing, specimen processing, lab procedures and clerical duties. To prepare for this career, you will learn the theory and practical skills of phlebotomy through the on-campus laboratory sessions and experiences at local healthcare facilities.

Career Outlook

The demand for phlebotomists continues to grow.

Program Learning Outcomes

- Adhere to infection control and safe practices
- Perform specimen collection
- Process specimens
- Comply with legal regulations
- Model professional behaviors

Admission Requirements

High school diploma or GED required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemont, IL 60018; 773-714-8880; naacls.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

COURSES		Credits
(1)	**CLABT-110** Basic Lab Skills ‡	**1**
(1)	**CLABT-111** Phlebotomy ‡	**2**
(1)	**ENG-195** Written Communication *	**3**
	(or) ENG-201 English 1 ‡	
(1)	**HEALTH-101** Medical Terminology * ^	**3**
(1)	**HEALTH-104** Culture of Healthcare ^	**2**
(1)	**HEALTH-107** Digital Literacy for Healthcare * ^	**2**
(1)	**MLABT-161** Computer Applications for the Medical Laboratory ‡	**1**
(1)	**MLABT-166** Phlebotomy Clinical Experience ‡	**3**

TOTAL CREDITS: 17

( ) Semester order for full-time students.

‡ Prerequisite required.

** May be taken prior to entering the program.*

^ Counts toward earning the Healthcare Customer Service certificate.

Program curriculum requirements are subject to change.

Official Wisconsin Technical College System program title: Phlebotomy Technician.

Power Engineering and Boiler Operator

TECHNICAL DIPLOMA | **Program Code: 30-428-1** | Oak Creek Campus

POWER ENGINEERING AND BOILER OPERATOR
matc.edu/academics/pathways

Certificate
• Boiler Operator, p. 189

Technical Diploma
• Power Engineering and Boiler Operator, p. 167

Learn how to manage and repair equipment, to maintain facilities, and to operate and control low-pressure and high-pressure boilers and auxiliary systems in factories, plants and buildings.

Career Outlook

Program graduates have potential for employment as building engineers, boiler operators, facilities maintenance mechanics and power engineers.

Program Learning Outcomes

- Follow industry safety standards
- Operate power engineering equipment
- Examine boiler operation effects on the environment
- Perform water treatment tests
- Operate building controls

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) POWENG-330	Low-Pressure Boilers ^	1
(1) POWENG-331	High-Pressure Boilers ^	2
(1) POWENG-332	Boiler Operation ^	1
(1) POWENG-334	Blueprint Reading for Power Engineering	1
(1) POWENG-335	Instrumentation and Controls	3
(1) POWENG-395	Electricity for Power Engineering	3
(2) ABS-143	Electrical Concepts/Control Theory 1	2
(2) ENG-340	Workplace Communication	2
(2) POWENG-333	Plant Maintenance and HVAC Basics	3
(2) POWENG-336	Math for Power Engineers	1

TOTAL CREDITS: 19

( ) Semester order for full-time students.

^ Counts toward earning the Boiler Operator certificate.

Program curriculum requirements are subject to change.

All credits must be earned at MATC with 2.0 GPA or higher.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Practical Nursing

TECHNICAL DIPLOMA | **Program Code: 31-543-1** | Downtown Milwaukee Campus

This technical diploma ladders into the Registered Nursing associate degree. Contact an MATC advisor for more details.

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. Upon program completion, you will be eligible to take the licensure exam for Practical Nurses (NCLEX-PN). Nursing Assistant training is required prior to petitioning for this program.

Career Outlook

Licensed practical nurses (LPNs) are in high demand in various healthcare settings.

Program Learning Outcomes

- Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving identity as a nurse committed to caring, advocacy, and quality care while adhering to evidence-based practice
- Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts
- Integrate knowledge of social, mathematical, and physical sciences, pharmacology, and disease processes while participating in clinical decision-making

(For full description, see matc.edu.)

Admission Requirements

High school diploma or GED, and one year of high school-level biology and chemistry required. This program admits students through a petition selection process. See program's webpage at matc.edu.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; 404-975-5000; acenursing.org.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

COURSES		Credits
(1)	**ENG-195**	Written Communication ..... **3** (or) ENG-201 English 1 ‡
(1)	**NATSCI-177**	General Anatomy and Physiology ‡ .... **4** (or) NATSCI-201 Anatomy & Physiology 1 ‡ (and) NATSCI-202 Anatomy & Physiology 2 ‡
(1)	**NRSPN-301**	Nursing Fundamentals **2**
(1)	**NRSPN-302**	Nursing Skills ‡ **3**
(1)	**NRSPN-303**	Nursing: Pharmacology **2**
(1)	**NRSPN-304**	Nursing: Introduction to Clinical Practice ‡ **2**
(2)	**ENG-196**	Oral/Interpersonal Communication .... **3** (or) Any 200-level ENG or SPEECH course
(2)	**NRSPN-305**	Nursing: Health Alterations ‡ **3**
(2)	**NRSPN-306**	Nursing: Health Promotion ‡ **3**
(2)	**NRSPN-307**	Nursing: Clinical Care Across the Lifespan ‡ **2**
(2)	**NRSPN-308**	Nursing: Introduction to Clinical Management ‡ **2**
(2)	**PSYCH-199**	Psychology of Human Relations ..... **3** (or) PSYCH-238 Lifespan Psychology

TOTAL CREDITS: 32

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Preparatory Plumbing

TECHNICAL DIPLOMA | **Program Code: 31-427-1** | MATC Education Center at Walker's Square

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This program prepares students for a plumbing apprenticeship. As a graduate applying for an apprenticeship, you will be able to demonstrate your commitment to the trade, and will possess entry-level skills for a plumbing apprenticeship. This program is also for individuals interested in other piping trades. Classes are at the MATC Education Center at Walker's Square, 816 West National Avenue, Milwaukee.

Career Outlook

There is a strong demand for the services of licensed plumbers.

Program Learning Outcomes

- Identify various piping materials and fittings
- Utilize hand tools and power tools related to the trade
- Follow directions related to the trade
- Calculate various piping off set dimension
- Sketch and read simple plumbing systems drawings

Admission Requirements

- A high school diploma or GED
- Shop practice and drafting learned either in school or employment setting
- Ability to drive and possession of a valid driver's license

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**MATH-308**	Math for Industrial Applications 1 ‡ ... **2**
(1)	**PLUMB-300**	Plumbing Theory 1 ... **3**
(1)	**PLUMB-301**	Applied Drawing for Plumbers 1 ... **2**
(1)	**PLUMB-302**	Plumbing and Piping Shop 1 ... **3**
(1)	**PLUMB-308**	Plumbing and Pipe Joining Process 1 ... **2**
(1)	**PLUMB-312**	Computer Applications/Plumbing ... **1**
(2)	**ENG-340**	Workplace Communication ... **2**
(2)	**MCDESG-120**	Basic AutoCAD ... **1**
(2)	**PLUMB-304**	Plumbing Theory 2 ‡ ... **3**
(2)	**PLUMB-305**	Plumbing and Pipe Joining Process 2 ‡ ... **2**
(2)	**PLUMB-306**	Plumbing and Piping Shop 2 ‡ ... **3**
(2)	**PLUMB-309**	Applied Drawing for Plumbers 2 ‡ ... **2**
(2)	**PLUMB-310**	First Aid/Safety in Plumbing ... **1**

TOTAL CREDITS: 27

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Date: August

Manufacturing, Construction & Transportation

Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Production Artist

TECHNICAL DIPLOMA | **Program Code: 31-201-2** | Downtown Milwaukee Campus

GRAPHIC DESIGN
matc.edu/academics/pathways

Technical Diploma
• Production Artist, p. 170

Associate Degree
• Graphic Design, p. 69

Gain the skills in industry-recognized software required for entering the graphic design field. You will learn to prepare designs, layouts and make modifications according to production standards.

Career Outlook

Production artists use their technical skills to ensure that the finished design work meets the client's expectations. They are typically the last people to work on a project before it is published. This growing segment of the creative industry offers entry into a variety of careers.

Program Learning Outcomes

- Operate Adobe Creative Suite and other industry-recognized software
- Position text and art elements in a visually appealing way for print and/or digital media
- Develop and/or adapt graphics for digital and print media with proper file format
- Prepare files for press

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	GRDS-103	Design Elements and Principles 3
(1)	GRDS-107	Digital Imaging: Adobe Photoshop 3
(1)	GRDS-115	Typographic Fundamentals 3
(1)	GRDS-122	Vector Graphics: Adobe Illustrator 3
(2)	GRDS-104	Researching and Concepting ‡ 3
(2)	GRDS-110	Layout and Publishing: InDesign ‡ 3
(2)	GRDS-111	Advertising Design ‡ 3
(2)	GRDS-117	Packaging Design ‡ 3
(2)	GRDS-128	Portfolio Pathway 1

TOTAL CREDITS: 28

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Real Estate Broker Associate

TECHNICAL DIPLOMA | **Program Code: 30-194-1** | West Allis Campus

REAL ESTATE
matc.edu/academics/pathways

Certificate
- Property Management, p. 199
- Real Estate Salesperson, p. 200

Technical Diploma
- Real Estate Broker Associate, p. 171

Associate Degree
- Real Estate, p. 98

Address your interests in the buying and selling of real estate. This program's coursework prepares you to operate a real estate office, or work for a commercial real estate firm, overseeing real estate transactions.

Career Outlook

Employment of real estate brokers and sales agents in the U.S. is projected to grow 6% from 2016 to 2026.

Program Learning Outcomes

- Prepare real estate contracts and documents in accordance with applicable laws
- Apply concepts of property valuation to real estate transactions
- Identify environmental issues in real estate transactions
- Demonstrate real estate brokerage business management skills

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) RLEST-180	Principles of Real Estate ^	3
(1) RLEST-182	Real Estate Law ^	3
(1) RLEST-183	Real Estate Broker Preparation	3
(1) RLEST-187	Broker Management ‡	3
	TOTAL CREDITS:	**12**

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Real Estate Salesperson certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Refrigeration, Air Conditioning and Heating Service Technician

TECHNICAL DIPLOMA | **Program Code: 31-401-1** | Oak Creek Campus

This technical diploma ladders into the Air Conditioning and Refrigeration Technology associate degree. Contact an MATC advisor for details.

Enter a career that emphasizes working with HVAC/R equipment. You will learn to service and install air conditioning, refrigeration and heating equipment.

Career Outlook

There is an ongoing need for technicians who have current training in the installing, troubleshooting and repair of HVAC/R units.

Program Learning Outcomes

- Install HVAC/R components
- Service HVAC/R systems
- Troubleshoot HVAC/R systems

Admission Requirement

- High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) ELECTY-398	Electrical Circuits and Controls for HVAC/R	**3**
(1) ENG-195	Written Communication	**3**
(1) HVAC1-300	Basic Refrigeration and System Operations	**4**
(1) HVAC1-325	Oil Furnace Service and Maintenance	**3**
(1) HVAC1-332	Math for HVAC Service Technicians	**2**
(1) HVAC1-350	Air Conditioning Principles	**2**
(2) ELECTY-396	HVAC/R Electrical Systems ‡	**2**
(2) ELECTY-397	Electrical Wiring Methods for Air Conditioning and Refrigeration	**1**
(2) HVAC1-301	Introduction to Refrigeration Servicing and Application ‡	**4**
(2) HVAC1-326	Gas Furnace Servicing and Maintenance ‡	**3**
(2) HVAC2-148	Heat Pumps ‡	**3**

TOTAL CREDITS: 30

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation

Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Renal Dialysis Technician

TECHNICAL DIPLOMA | **Program Code: 31-517-1** | Downtown Milwaukee Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

Prepare for a healthcare career as a renal dialysis technician (RDT). Under the direct supervision of a registered nurse, RDTs set up dialysis equipment, prepare dialysate solutions, perform venipuncture and monitor patient responses during the procedure. RDTs also are responsible for quality control and maintenance of the equipment.

Career Outlook

Employment opportunities exist in hospitals and in freestanding dialysis centers.

Program Learning Outcomes

- Adhere to infection control and safety principles
- Demonstrate safe operation of renal dialysis treatment machine and related equipment
- Demonstrate competent and safe patient care skills
- Model professionalism as a renal dialysis technician

Admission Requirements

High school diploma or GED; and one year of high school-level biology required. This program admits students through a petition selection process. See the program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication * ..... 3 (or) ENG-201 English 1 ‡
(1)	HEALTH-101	Medical Terminology * 3
(1)	PSYCH-199	Psychology of Human Relations * ..... 3 (or) PSYCH-231 Introductory Psychology
(2)	RDIAT-302	Renal Failure and Support Therapies ‡ 3
(2)	RDIAT-304	Hemodialysis Laboratory Procedures ‡ 1
(2)	RDIAT-320	Introduction to Renal Dialysis ‡ 3
(2)	RDIAT-321	Principles of Renal Dialysis 1 ‡ 4
(2)	RDIAT-322	Principles of Renal Dialysis 2 ‡ 3
(2)	RDIAT-323	Clinical Practicum 1 ‡ 2
(2)	RDIAT-324	Clinical Practicum 2 ‡ 3

TOTAL CREDITS: 28

( ) Semester order for full-time students.

‡ Prerequisite required.

** It is strongly recommended that these courses be completed prior to entering the program.*

Program curriculum requirements are subject to change.

Start Date: August

Healthcare Services

Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

To apply for financial aid, visit fafsa.gov. School Code: 003866

Sales and Customer Experience

TECHNICAL DIPLOMA | **Program Code: 30-104-10** | Downtown Milwaukee, Mequon, Oak Creek campuses (Also offered online)

MARKETING
matc.edu/academics/pathways

Technical Diploma
- Digital Marketing and Integrated Communications, p. 136
- Sales and Customer Experience, p. 174

Associate Degree
- Marketing – Online Accelerated, p. 84
- Marketing, p. 85

Prepare for a successful sales career by developing knowledge of commercial and consumer markets, sales, client services and customer experience planning. Focusing on the latest sales trends and technologies, this program is designed for the sales novice or professionals looking to refresh their skills.

Career Outlook

Sales and customer experience careers are U.S. Department of Labor "Bright Outlook" careers with expected growth of 10% to 14% through 2026.

Program Learning Outcomes

- Develop marketing strategies
- Develop selling strategies
- Deliver sales presentations
- Apply customer experience and client services strategies
- Analyze sales information

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1) MKTG-102	Marketing Principles	3
(1) MKTG-104	Selling Principles	3
(1) MKTG-106	Retail and Consumer Marketing ‡	3
(1) MKTG-107	Customer Experience	3
(1) MKTG-144	Client Services	3

TOTAL CREDITS: 15

( ) Semester order for full-time students.

‡ Prerequisite required.

All the Sales and Customer Experience courses count toward the Marketing associate degree.

Program curriculum requirements are subject to change.

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Special Event Management

TECHNICAL DIPLOMA | **Program Code: 31-109-2** | Downtown Milwaukee Campus

EVENT MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
• Special Event Management, p. 175

Associate Degree
• Event Management, p. 66

Put your creativity and planning skills to work and begin a career in event management. This program covers a broad range of topics related to the hospitality industry, including marketing, contracts and accounting.

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.

Program Learning Outcomes

- Design a special event
- Apply the fundamentals strategies to a special event
- Manage the fundamentals of financial resources
- Identify the various components that make up the hospitality industry
- Manage the fundamentals of housing and registration process

Admission Requirements

- A high school diploma or GED
- Typing proficiency of 30 words per minute or concurrent enrollment in OFTECH-103 Keyboard and Keypad

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	BADM-106	MS Office for Business Applications 3
(1)	ENG-195	Written Communication .....3 (or) ENG-201 English 1 ‡
(1)	HOTEL-122	Basic Hospitality Accounting 3
(1)	MEET-151	Introduction to Hospitality/Tourism ...3
(2)	HOTEL-105	Hospitality Marketing, Sales and Revenue Strategy 3
(2)	HOTEL-127	Fundamentals of Meetings and Special Events 3
(2)	MATH-134	Mathematical Reasoning .....3 (or) Any 200-level MATH course
(2)	MEET-116	Fundamentals of Green Meetings.....2
(2)	MEET-180	Registration and Housing Logistics ‡..3
(2)	MEET-181	Exposition and Special Event Management ‡ 3

TOTAL CREDITS: 29

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Supply Management

TECHNICAL DIPLOMA | **Program Code: 30-182-1** | Oak Creek Campus (Also offered online)

SUPPLY CHAIN MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
- Supply Management, p. 176
- Transportation – Logistics, p. 179

Associate Degree
- Supply Chain Management, p. 101

Begin a career in supply chain management, purchasing or materials management through this program. You will gain skills in a variety of areas, including inventory control, vendor negotiations and purchasing procedures. This program's blended format is 50% online and 50% classroom.

Career Outlook

Employment of purchasing managers, buyers and purchasing agents is expected to remain steady in most industries.

Program Learning Outcomes

- Define (plan) operations, transportation, procurement and distribution
- Measure operations, transportation, procurement and distribution
- Analyze operations, transportation, procurement and distribution
- Improve operations, transportation, procurement and distribution
- Control operations, transportation, procurement and distribution

Admission Requirements

- A high school diploma or GED
- Basic computer skills

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	BADM-106	MS Office for Business Applications	3
(1)	INDVTS-102	Career Assessment/Portfolio Development	3
(1)	LOGMGT-164	Supply Chain Management	3
(2)	LOGMGT-144	Production Planning and Inventory Control	3
(2)	LOGMGT-146	Operations Management	3
(2)	LOGMGT-170	Procurement	3
		TOTAL CREDITS:	**18**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Surveying and Mapping

TECHNICAL DIPLOMA | **Program Code: 30-607-X** | Downtown Milwaukee Campus

CIVIL ENGINEERING TECHNOLOGY
matc.edu/academics/pathways

Technical Diploma
• Surveying and Mapping, p. 177

Associate Degree
• Civil Engineering Technology, p. 55

As a surveying technician, graduates of this program typically work under the direction of an engineer or surveyor to operate surveying equipment, record measurements, and produce drawings showing boundaries, key locations, elevations and other terrain features.

Career Outlook

Surveying and mapping technicians are needed in all phases of construction, and employer demand is good in the current job market.

Program Learning Outcomes

- Operate surveying instruments to collect data on location
- Operate Trimble data collection systems, GPS receivers and robotic total stations
- Draft and analyze traverse field data using Autodesk Civil 3-D software
- Illustrate basic drawings of circular horizontal curves, vertical curves, plans, profiles and cross-sections

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra (grade C or higher)

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

This program is approved through the Land Surveyor Section of the Wisconsin Examining Board of Architects, Landscape Architects, Professional Engineers, Designers and Professional Land Surveyors, 4822 Madison Yards Way, Madison, WI 53705; 608-266-2112; dsps.wi.gov/pages/BoardsCouncils/AE/Default.aspx.

COURSES		Credits
(1) CIVIL-101	Civil Engineering Drawing	2
(1) CIVIL-102	Introduction to AutoCAD	2
(1) CIVIL-105	Computer Applications	2
(1) CIVIL-155	Surveying 1	2
(1) MATH-115	College Technical Mathematics 1 ‡ (or) MATH-201 College Algebra ‡	5
(2) CIVIL-106	Intermediate AutoCAD ‡	2
(2) CIVIL-156	Surveying 2 ‡	2
(2) ENG-195	Written Communication (or) ENG-201 English ‡	3
(3) CIVIL-110	Introduction to Civil 3D	2
(3) CIVIL-157	Route and Highway Surveying ‡	3

TOTAL CREDITS: 25

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

Start Dates: August and January

STEM
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/stem

To apply for financial aid, visit fafsa.gov. School Code: 003866

Tool and Die Making

TECHNICAL DIPLOMA | **Program Code: 32-439-1** | Downtown Milwaukee Campus (year one only), Oak Creek Campus

This program features exploratory courses that count toward a credential. Contact an MATC advisor for information.

This is a four-semester, full-time, day program; the first two semesters are common with the one-year Machine Tool Operations program. All courses within the first year are based on the National Institute for Metalworking Skills (NIMS) Machining Level One Skill Standards in nine separate skill areas. During the third and fourth semesters, you will learn how to build and sample basic stamping dies and plastic injection molds.

Career Outlook

There is an ongoing need for highly skilled tool and die makers and mold makers.

Program Learning Outcomes

- Apply basic safety practices in the machine shop
- Interpret industrial/engineering drawings
- Apply precision measuring methods to part inspection
- Perform basic machine tool equipment set-up and operation
- Perform programming, set-up and operation of CNC machine tools
- Perform advanced tool, die, and mold operations

Admission Requirement

- High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES			Credits
(1)	MACHTL-300	Engine Lathe 1	3
(1)	MACHTL-301	Engine Lathe 2 ‡	3
(1)	MACHTL-309	Manual Vertical Milling Machining 1	3
(1)	MACHTL-310	Manual Vertical Milling Machining 2 ‡	3
(1)	MACHTL-360	Metrology	1
(1)	MACHTL-367	Machine Tool Technology	1
(1)	MACHTL-384	Machine Trades Mathematics 1	1
(1)	MDRAFT-385	Machine Blueprint Reading 1	1
(2)	ENG-340	Workplace Communication	2
(2)	MACHTL-304	Introduction to CNC Programming ‡	1
(2)	MACHTL-320	Introduction to CNC Turning Centers ‡	4
(2)	MACHTL-322	Introduction to CNC Vertical Machining Centers ‡	4
(2)	MACHTL-325	Surface Grinding ‡	4
(2)	MACHTL-385	Machine Trades Mathematics 2 ‡	1
(2)	MACHTL-391	Quality Control ‡	1
(2)	MDRAFT-386	Machine Blueprint Reading 2 ‡	1
(3)	MACHTL-386	Machine Trades Mathematics 3 ‡	1
(3)	MTLGY-301	Basic Heat Treatment of Metals	1
(3)	TDMKG-360	Basic Die Making Technology	1
(3)	TDMKG-366	CNC Programming 2 ‡	1
(3)	TDMKG-371	Stamping Die Making 1 ‡	4
(3)	TDMKG-372	Stamping Die Making 2 ‡	4
(3)	TDMKG-373	Stamping Die Making 3 ‡	4
(4)	MACHTL-387	Machine Trades Mathematics 4 ‡	1
(4)	TDMKG-361	Advanced Die Making Technology ‡	1
(4)	TDMKG-362	Cavity Die Technology	1
(4)	TDMKG-367	Basic CAD/CAM ‡	1
(4)	TDMKG-381	Moldmaking 1 ‡	4
(4)	TDMKG-382	Moldmaking 2 ‡	4
(4)	TDMKG-383	Moldmaking 3 ‡	4

TOTAL CREDITS: 66

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

Transportation – Logistics

TECHNICAL DIPLOMA | **Program Code: 30-182-2** | Oak Creek Campus

SUPPLY CHAIN MANAGEMENT
matc.edu/academics/pathways

Technical Diploma
- Supply Management, p. 176
- Transportation – Logistics, p. 179

Associate Degree
- Supply Chain Management, p. 101

Prepare for success in the growing transportation and logistics industry, which is involved with managing the movement of products and supplies. This program's blended format is 50% online and 50% classroom.

Career Outlook

Employment opportunities are expected to grow as supply and distribution systems become increasingly complex, and important, in the global economy.

Program Learning Outcomes

- Define (plan) operations, transportation, procurement and distribution
- Measure operations, transportation, procurement and distribution
- Analyze operations, transportation, procurement and distribution
- Improve operations, transportation, procurement and distribution
- Control operations, transportation, procurement and distribution

Admission Requirements

- A high school diploma or GED
- Basic computer skills

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	**BADM-106** MS Office for Business Applications	**3**
(1)	**INDVTS-102** Career Assessment/Portfolio Development	**3**
(1)	**LOGMGT-164** Supply Chain Management	**3**
(2)	**LOGMGT-146** Operations Management	**3**
(2)	**LOGMGT-184** International Logistics – Transportation/Documentation	**3**
(2)	**LOGMGT-190** Logistics	**3**
	TOTAL CREDITS:	**18**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

To apply for financial aid, visit fafsa.gov. School Code: 003866

Truck Driving

TECHNICAL DIPLOMA | **Program Code: 30-458-1** | Oak Creek Campus

As a graduate of this eight-week Truck Driving program, you will enter an industry in need of qualified workers. Developing skills related to safety, maintenance and the operation of trucks prepares you for entry-level positions as a local or over-the-road driver. Students have the opportunity to attain Class A CDL (Commercial Driver's License) as a result of their training.

Career Outlook

Currently the need for qualified truck drivers remains high in Wisconsin. The demand for truck drivers is expected to continually increase due to the retirement of current drivers and the increased need for freight-carrying services.

Program Learning Outcomes

- Perform commercial vehicle inspections
- Communicate with industry and regulatory personnel
- Complete legal and industry related documentation
- Plan trips
- Perform safe operation of a commercial vehicle
- Obtain a CDL (Commercial Driver's License)

Admission Requirements

- High school diploma or GED recommended
- Age 18 years or older
- Valid Wisconsin driver's license (Class D) and acceptable driving record
- Department of Transportation medical exam and drug test
- Valid Commercial Learners Permit (CLP) – for more information, see Wisconsin Commercial Driver's Manual at wisconsindot.gov or at local DMV office

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Start Dates: Aug./Oct./Jan./March/May

COURSES		Credits
(1) TRCKDR-341	Truck Driver 1 ‡	**3**
(1) TRCKDR-342	Truck Driver 2 ‡	**4**
(1) TRCKDR-343	Truck Driver 3 ‡	**3**

TOTAL CREDITS: 10

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

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

TV/Video Field Production Assistant

TECHNICAL DIPLOMA | **Program Code: 31-701-1** | Downtown Milwaukee Campus

ePRODUCTION
matc.edu/academics/pathways

Technical Diploma
• TV/Video Field Production Assistant, p. 181

Associate Degree
• eProduction, p. 65

To get ready for cameras and action, you will gain skills in the basics of field-based production, location lighting, high-definition field camera operation, and principles of non-linear editing and content distribution. Courses are taught in the Milwaukee PBS studios for real-world experience. This program prepares students for on-location, video production entry-level positions.

Career Outlook

With video so pervasive in our society, individuals well-versed in TV and video field production are in demand to help capture and deliver stories to the audience.

Program Learning Outcomes

- Apply basic principles of design and storytelling to studio and field productions
- Demonstrate proficiency in the use of basic media software, tools and technology
- Assist in production from concept to completion
- Communicate creative rationale in formal and informal settings
- Apply ethical business practices

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	EPROD-150	Introduction to eProduction 3
(1)	TV-101	TV/Video Studio Production Techniques ‡ 4
(1)	TV-112	Storytelling Via Post-Production ‡ 3
(1)	TV-181	Video in Society 1
(2)	EPROD-151	Data Content Management/ Implementation 3
(2)	EPROD-153	eProduction Practicum 1 ‡ 3
(2)	TV-105	TV/Video Field Production Techniques ‡ 4
(2)	TV-142	Non-Linear Video Editing and Authoring ‡ 3

TOTAL CREDITS: 27

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area *Technical College*

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

TV/Video Studio Production Assistant

TECHNICAL DIPLOMA | **Program Code: 31-701-2** | Downtown Milwaukee Campus

TELEVISION & VIDEO PRODUCTION
matc.edu/academics/pathways

Technical Diploma
• TV/Video Studio Production Assistant, p. 182

Associate Degree
• Television & Video Production, p. 104

Spotlight your future in the broadcasting industry with the skills attained through this two-semester program. You will learn the basics of television and video studio production through courses taught in Milwaukee PBS studios. Areas of study include production, studio lighting, studio camera operation, and general TV engineering principles.

Career Outlook

Studios for cable channels, educational facilities and corporate video studios offer employment opportunities.

Program Learning Outcomes

- Apply basic principles of design and storytelling to studio and field productions
- Demonstrate proficiency in the use of basic media software, tools and technology
- Assist in production from concept to completion
- Communicate creative rationale in formal and informal settings
- Apply ethical business practices

Admission Requirement

- A high school diploma or GED

COURSES		Credits
(1)	ENG-195	Written Communication ..... 3 (or) ENG-201 English 1 ‡
(1)	EPROD-150	Introduction to eProduction 3
(1)	TV-101	TV/Video Studio Production Techniques ‡ 4
(1)	TV-104	TV Studio/Field Set Design ‡ 2
(1)	TV-181	Video in Society 1
(2)	EPROD-151	Data Content Management/ Implementation 3
(2)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course
(2)	TV-107	Script Writing for Visual Media 3
(2)	TV-119	Operational Broadcast Engineering ‡ 3
(2)	TV-121	TV and Video Production Workshop 1 ‡ 3
(2)	TV-123	TV and Video Production Co-op 1 ‡ 3

TOTAL CREDITS: 31

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Unity Developer

TECHNICAL DIPLOMA | **Program Code: 31-153-1** | Downtown Milwaukee Campus

COMPUTER SIMULATION AND GAMING
matc.edu/academics/pathways

Technical Diploma
• Unity Developer, p. 183

Associate Degree
• Computer Simulation and Gaming, p. 57

Make MATC your first choice for learning about 3D software. Through this program, you will develop the skills necessary to learn the Unity 3D software creation tool, which is used to develop simulations, video games, training programs and educational software.

Career Outlook

Learning the fundamentals of Unity 3D prepares you to develop for multiple consoles and platforms, especially personal computer, web and mobile applications in 2D and 3D.

Program Learning Outcomes

- Demonstrate the ability to create and manipulate assets using the Unity 3D engine
- Create understandable and fluid GUI elements
- Apply 3D math knowledge of transforms, coordinate systems and interpolation
- Apply object-oriented principles in designing systems and scripting
- Demonstrate the ability to contribute to all aspects of development on a multidisciplinary team

Admission Requirements

- A high school diploma or GED
- High school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	CSG-110	Introduction to Computer Simulation and Gaming 3
(1)	CSG-114	Introduction to Game Development/ Programming 3
(1)	CSG-115	CSG Production 3
(1)	CSG-117	Game Logic and Problem-Solving 3
(1)	MATH-107	College Mathematics ‡ ..... 3 (or) Any 200-level MATH course
(2)	CSG-118	Game Engine Scripting ‡ 3
(2)	CSG-119	Designing Interactive Displays ‡ 3
(2)	CSG-120	Interactive Display Production 1 1
(2)	CSG-128	Intermediate Game Development Programmer ‡ 3
(2)	CSG-179	CSG API Programming ‡ 4

TOTAL CREDITS: 29

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

Start Dates: August and January

Creative Arts, Design & Media
Milwaukee Area Technical College

matc.edu/course-catalog/creative-arts-design-media

To apply for financial aid, visit fafsa.gov. School Code: 003866

Welding

TECHNICAL DIPLOMA | **Program Code: 31-442-1** | Mequon, Oak Creek and West Allis campuses

WELDING
matc.edu/academics/pathways

Certificate
- Welding Fundamentals, p. 203

Technical Diploma
- Welding, p. 184
- Advanced Metal Fabrication, p. 109

Gain the skills to perform production, maintenance and repair welding for manufacturing and construction. Learn about blueprints, equipment maintenance and the various welding processes and settings.

Career Outlook

Demand is high for welders with up-to-date skills; new processes have created many job opportunities for welders with these abilities.

Program Learning Outcomes

- Demonstrate industry-recognized safety practices
- Interpret welding drawings
- Produce shielded metal arc welds (SMAW)
- Produce gas metal arc welds (GMAW)
- Produce flux core arc welds (FCAW)
- Produce gas tungsten arc welds (GTAW)
- Perform cutting operations

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

COURSES		Credits
(1)	WELD-313	Shielded Metal Arc Welding ^ 5
(1)	WELD-314	Gas Tungsten Arc Welding ^ 5
(1)	WELD-350	GTAW Processes ^ 1
(1)	WELD-351	Shielded Metal Arc Welding Processes ^ 1
(1)	WELD-360	Blueprint Reading for Welders ^ 2
(1)	WELD-380	Welding Trades Mathematics ^ 1
(2)	ENG-340	Workplace Communication ^ 2
(2)	WELD-315	Gas Metal Arc Welding Practices 5
(2)	WELD-316	Layout and Setup Practices 5
(2)	WELD-352	Gas-Shielded Arc Welding Processes .. 1
(2)	WELD-354	Layout and Print Reading Practices ‡ ... 2

TOTAL CREDITS: 30

( ) Semester order for full-time students.

‡ Prerequisite required.

^ Counts toward earning the Welding Fundamentals certificate.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

To apply for financial aid, visit fafsa.gov. School Code: 003866

CERTIFICATES

Most MATC certificate programs can be completed in one semester of full-time study, providing a quick way to earn an entry-level credential, strengthen core skills or ease into college-level coursework if you have been out of school for a while.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details.

All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

Accounting Bookkeeper Trainee, p. 186
Automotive Express Lube Technician, p. 187
Aviation Maintenance Technician – General, p. 188
Boiler Operator, p. 189
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Microsoft Enterprise Desktop Support Specialist, p. 197
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Service Center Technician, p. 201
Water Technician, p. 202
Welding Fundamentals, p. 203

Accounting Bookkeeper Trainee

CERTIFICATE Downtown Milwaukee, Oak Creek and West Allis campuses (Also offered online)

ACCOUNTING
matc.edu/academics/pathways

Certificate
• Accounting Bookkeeper Trainee, p. 186

Technical Diploma
• Accounting Assistant, p. 108

Associate Degree
• Accounting, p. 30

This certificate prepares you to enter the bookkeeping/accounting field in an entry-level capacity. Through the program's three courses, students develop competence in financial accounting with an emphasis on accounting software, spreadsheets and databases.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **ACCTG-111**	Accounting 1	**4**
(1) **ACCTG-122**	Accounting Software Applications	**3**
(1) **ACCTG-130**	Computerized Accounting ‡	**3**

TOTAL CREDITS: 10

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Automotive Express Lube Technician

CERTIFICATE Oak Creek Campus

AUTOMOTIVE MAINTENANCE TECHNICIAN
matc.edu/academics/pathways

Certificate
• Automotive Express Lube Technician, p. 187

Technical Diploma
• Automotive Maintenance Technician, p. 116

Drive your future forward by entering the automotive maintenance field. This certificate covers inspection and maintenance of automotive brakes, steering and suspension components, and provides instruction on express lube services. The lab courses feature hands-on learning with lab mockups and vehicles.

Admission Requirement

- • High school diploma or GED recommended

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) AUTO1-300	Express Service	2
(1) AUTO1-308	Brakes, Steering, Suspension Fundamentals	2
(1) AUTO1-310	Brakes, Steering, Suspension Lab 1 ‡	4
(1) AUTO1-312	Brakes, Steering, Suspension Lab 2 ‡	2

TOTAL CREDITS: 10

( ) Semester order for full-time students.

‡ Prerequisite required.

Program curriculum requirements are subject to change.

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area Technical College

matc.edu/course-catalog/manufacturing-construction-transportation

Aviation Maintenance Technician – General

CERTIFICATE MATC Aviation Center/Oak Creek Campus

AVIATION TECHNICIAN
matc.edu/academics/pathways

Certificate
- Aviation Maintenance Technician – General, p. 188

Technical Diploma
- Aviation Technician – Airframe, p. 118
- Aviation Technician – Powerplant, p. 119

Complete this certificate and you will be prepared for entry-level work as a line service technician assisting certified aircraft mechanics and structural assemblers, or you could work in airfield ground support positions.

MATC's Aviation Center is at 422 East College Avenue, east of the Oak Creek Campus.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

This program is certified by the Federal Aviation Administration Headquarters, 800 Independence Avenue SW, Washington, DC 20591; www.faa.gov; FAA (Federal Aviation Administration) CFR (Code of Federal Regulations) Part 147 Aviation Maintenance Technician School.

COURSES		Credits
(1) AVITEC-323	Aircraft Ground Operation and Servicing	3
(1) AVITEC-380	Basic Physics	1
(1) AVITEC-381	Basic Electricity	3
(1) AVITEC-382	Aircraft Materials and Their Inspection	3
(1) AVITEC-383	Aircraft Maintenance Publications, Records and Mechanics Regulations	1
(1) AVITEC-393	Mathematics for Aviation Technicians	2
(1) ENG-340	Workplace Communication	2

TOTAL CREDITS: 15

( ) Semester order for full-time students.

Program curriculum requirements are subject to change.

Start Date: August

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

Boiler Operator

CERTIFICATE Oak Creek Campus

POWER ENGINEERING AND BOILER OPERATOR
matc.edu/academics/pathways

Certificate
• Boiler Operator, p. 189

Technical Diploma
• Power Engineering and Boiler Operator, p. 167

Use your mechanical aptitude and prepare for employment as a boiler operator, facilities maintenance mechanic or power engineer through this certificate's coursework.

At the workplace, job responsibilities typically include regulating equipment; ensuring that equipment operates safely and economically; and monitoring meters, gauges and computerized controls.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **POWENG-330**	Low-Pressure Boilers	**1**
(1) **POWENG-331**	High-Pressure Boilers	**2**
(1) **POWENG-332**	Boiler Operation	**1**
	TOTAL CREDITS:	**4**

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area ***Technical College***

matc.edu/course-catalog/manufacturing-construction-transportation

Business Management Trainee

CERTIFICATE All campuses (Also offered online)

BUSINESS MANAGEMENT
matc.edu/academics/pathways

Certificate
• Business Management Trainee, p. 190

Technical Diploma
• Business Management, p. 124

Associate Degree
• Business Management, p. 51

Get a strong start to enter the job market with knowledge of key components of business, including the fundamentals of accounting, management and legal concepts.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **ACCTG-110**	Financial Accounting	**3**
(1) **BADM-106**	MS Office for Business Applications	**3**
(1) **BADM-134**	Business Organization and Management	**3**
(1) **BADM-165**	Legal Environment of Business	**3**
	TOTAL CREDITS:	**12**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Dietary Manager

CERTIFICATE West Allis Campus

NUTRITION AND DIETETIC TECHNICIAN
matc.edu/academics/pathways

Certificate
• Dietary Manager, p. 191

Associate Degree
• Nutrition and Dietetic Technician, p. 90

Bilingual (Spanish) mode also is offered.

Students enrolled in the Nutrition and Dietetic Technician associate degree program will complete all of this certificate's required courses as part of their program. Students who are interested only in becoming eligible for the Association of Nutrition and Foodservice Professionals membership and examination may enroll in just these required classes and earn the Dietary Manager certificate at MATC.

This certificate consists of both classroom coursework and 150 hours of precepted field experience overseen by a Registered Dietitian. Students have the opportunity to learn about safe food handling, meal planning, menu management and supervision. Upon completion of this certificate, students are eligible to take the Certified Dietary Management examination. These professionals work in a variety of healthcare and institutional food settings.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

This program is accredited by the Association of Nutrition & Foodservice Professionals (ANFP), 406 Surrey Woods Drive, St. Charles, IL 60174; 800-323-1908 or 630-587-6336; anfponline.org.

COURSES		Credits
(1)	**DIETNT-106** Food Service Sanitation	**2**
	(or) CULMGT-112 Food Service Sanitation	
(1)	**DIETNT-108** Food Service Management 1 ‡	**3**
(1)	**DIETNT-118** Food Service Management 1: Coordinated Practice ‡	**1**
(1)	**DIETNT-151** Nutrition for Dietetics	**4**
	TOTAL CREDITS:	**10**

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

Start Dates: August and January

Healthcare Services
Milwaukee Area **Technical College**
matc.edu/course-catalog/healthcare-services

EKG Technician

CERTIFICATE Downtown Milwaukee Campus

CARDIOVASCULAR TECHNOLOGIST
matc.edu/academics/pathways

Certificate
- EKG Technician, p. 192

Associate Degree
- Cardiovascular Technology – Echocardiography, p. 52
- Cardiovascular Technology – Invasive, p. 53

Learn the anatomy, physiology and pathology of the heart, and develop the skills needed to complete and interpret electrocardiograms (EKGs). This program prepares you to take the Certified Cardiographics Technician examination, leading to a Certified Cardiographics Technician (CCT) credential as administered by Cardiac Credentialing International (CCI).

Admission Requirements

High school diploma or GED; one year of high school-level biology, chemistry and algebra (grade C or higher). This program admits students through a petition selection process. See this program's webpage at matc.edu to view the petition process and all requirements.

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **CVTECH-102**	Introduction to CVT ‡	**2**
(1) **CVTECH-110**	EKG Analysis ‡	**2**
(1) **CVTECH-115**	Essentials of Cardiac Care 1 ‡	**4**
(1) **NATSCI-197**	Microbiology*	**4**

TOTAL CREDITS: 12

( ) Semester order for full-time students.

‡ Prerequisite required.

** Cardiovascular Technology/EKG Technician students are not required to take NATSCI-177/179 or 201/202 as prerequisites to NATSCI-197; go to Selfservice.matc.edu and submit a waiver indicating you are a CVT/EKG Technician student.*

Program curriculum requirements are subject to change.

Start Date: January

Healthcare Services
Milwaukee Area ***Technical College***

matc.edu/course-catalog/healthcare-services

Entrepreneurship

CERTIFICATE Downtown Milwaukee Campus (Also offered online)

ENTREPRENEURSHIP
matc.edu/academics/pathways

Certificate
• Entrepreneurship, p. 193

Technical Diploma
• Entrepreneurship, p. 143

The courses in this program are especially geared to students interested in starting their own, or assisting with, a small or family-run business. Topics covered include customer discovery, Lean Startup methods and traditional business plans. The courses are offered in online, accelerated, blended formats. MATC's Entrepreneurship Center is on the Downtown Milwaukee Campus in Room M319.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **ENTREP-101**	Introduction to Entrepreneurship	**3**
(1) **ENTREP-104**	Business Plan	**3**
	TOTAL CREDITS:	**6**

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

Start Dates: August/January/June

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Financial Services Trainee

CERTIFICATE Downtown Milwaukee and West Allis campuses (Also offered online)

BANKING AND FINANCIAL SERVICES
matc.edu/academics/pathways

Certificate
• Financial Services Trainee, p. 194

Technical Diploma
• Financial Services, p. 144

Associate Degree
• Banking and Financial Services, p. 48

Attain the solid foundation in banking and finance concepts needed to enter the financial services industry.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) ACCTG-111	Accounting 1	4
(1) BADM-106	MS Office for Business Applications	3
(1) FIN-120	Introduction to Money, Banking and Financial Markets	3
(1) MKTG-104	Selling Principles	3
	TOTAL CREDITS:	**13**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Healthcare Customer Service

CERTIFICATE Downtown Milwaukee Campus (Also online)

ANESTHESIA TECHNOLOGIST
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Associate Degree
- Anesthesia Technology, p. 34

HEALTH INFORMATION TECHNICIAN
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Medical Coding Specialist, p. 160

Associate Degree
- Health Information Technology, p. 70

HEALTHCARE SERVICES MANAGEMENT
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Health Unit Coordinator, p. 148
- Phlebotomy, p. 166

Associate Degree
- Healthcare Services Management, p. 71

PHARMACY TECHNICIAN
matc.edu/academics/pathways

Certificate
- Healthcare Customer Service, p. 195

Technical Diploma
- Pharmacy Technician p. 165

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.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

Start Dates: August and January

Healthcare Services
Milwaukee Area Technical College

matc.edu/course-catalog/healthcare-services

COURSES		Credits
(1) HEALTH-101	Medical Terminology	3
(1) HEALTH-104	Culture of Healthcare	2
(1) HEALTH-107	Digital Literacy for Healthcare	2
	TOTAL CREDITS:	**7**

( ) Semester order for full-time students.

Program curriculum requirements are subject to change.

Level 2 – Service Center Technician

CERTIFICATE All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

This certificate provides preparation for CompTIA's Network+ and Security+ certifications, HDI's Support Center Analyst and Desktop Support Technician, as well as ITIL. Students acquire the skills necessary for level-two service center support.

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) ITSUP-101	Computer Information Systems Fundamentals	3
(1) ITSUP-109	Microsoft Office for IT Professionals	3
(1) ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL)	3
	TOTAL CREDITS:	**9**

( ) Semester order for full-time students.

Program curriculum requirements are subject to change.

For program success, previous completion or concurrent enrollment in classes pertaining to CompTIA A+ is recommended.

Start Dates: August and January

STEM
Milwaukee Area Technical College
matc.edu/course-catalog/stem

Microsoft Enterprise Desktop Support Specialist

CERTIFICATE All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Skill sets gained will provide working knowledge to identify and resolve operating system, application and security issues; and to maintain and manage Windows 7 systems. Hands-on lab learning includes installations, deployments, configurations, maintenance and monitoring systems.

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1)	ITSUP-109 Microsoft Office for IT Professionals	3
(1)	ITSUP-111 CompTIA A+ Software Support	3
(1)	ITSUP-140 Support Center Analyst (HDI-SCA, HDI-DST, ITIL)	3
		TOTAL CREDITS: 9

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

Start Dates: August and January

STEM
Milwaukee Area Technical College
matc.edu/course-catalog/stem

Preschool

CERTIFICATE Downtown Milwaukee, West Allis campuses

EARLY CHILDHOOD EDUCATION

matc.edu/academics/pathways

Certificate
• Preschool, p. 198

Technical Diploma
• Child Care Services, p. 128

Associate Degree
• Early Childhood Education, p. 61

Bilingual (Spanish) mode is offered at the West Allis Campus.

Take this step to further develop your options in a child care career. After earning the certificate, you will be eligible for The Registry Preschool credential.

Admission Requirements

- A high school diploma or GED
- Documentation of compliance with Wisconsin's Caregiver Law
- Proper immunizations and good health as evidenced by a medical examination
- Practicum placement contingent upon results of criminal background check

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1)	CHILDD-148	ECE: Foundations of Early Childhood Education 3
(1)	CHILDD-167	ECE: Health, Safety and Nutrition 3
(1)	CHILDD-188	ECE: Guiding Child Behavior 3
(2)	CHILDD-108	ECE: Early Language and Literacy 3
(2)	CHILDD-174	ECE: Introductory Practicum 3
(2)	CHILDD-179	ECE: Child Development 3

TOTAL CREDITS: 18

( ) Semester order for full-time students.

Program curriculum requirements are subject to change.

Start Dates: August and January

Community & Human Services
MILWAUKEE AREA *Technical College*

matc.edu/course-catalog/community-human-services

Property Management

CERTIFICATE West Allis Campus

REAL ESTATE
matc.edu/academics/pathways

Certificate
- Property Management, p. 199
- Real Estate Salesperson, p. 200

Technical Diploma
- Real Estate Broker Associate, p. 171

Associate Degree
- Real Estate, p. 98

Unlock the potential that property management provides in today's real estate market. Leases, rent scheduling, renting techniques, tenant selection and relations with property owners are some of the topics covered in this program.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1)	**RLEST-180** Principles of Real Estate	**3**
(1)	**RLEST-190** Introduction to Property Management	**3**
	TOTAL CREDITS:	**6**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Real Estate Salesperson

CERTIFICATE West Allis Campus

REAL ESTATE
matc.edu/academics/pathways

Certificate
- Property Management, p. 199
- Real Estate Salesperson, p. 200

Technical Diploma
- Real Estate Broker Associate, p. 171

Associate Degree
- Real Estate, p. 98

The two courses in this certificate satisfy the educational requirement that must be met prior to taking the State of Wisconsin Real Estate Salesperson Exam. You will learn about the duties and responsibilities of a real estate professional.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) RLEST-180	Principles of Real Estate	3
(1) RLEST-182	Real Estate Law	3
	TOTAL CREDITS:	**6**

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

Start Dates: August and January

Business & Management
Milwaukee Area Technical College

matc.edu/course-catalog/business-management

Service Center Technician

CERTIFICATE All campuses

IT COMPUTER SUPPORT SPECIALIST
matc.edu/academics/pathways

Certificate
- Level 2 - Service Center Technician, p. 196
- Microsoft Enterprise Desktop Support Specialist, p. 197
- Service Center Technician, p. 201

Technical Diploma
- IT Computer Support Technician, p. 149
- IT Help Desk Support Specialist, p. 151
- IT User Support Technician, p. 153

Associate Degree
- IT Computer Support Specialist, p. 77

Start your information technology career through this certificate program that can be completed in one semester. You will gain important skills and prepare for several key industry certification exams, including:

- CompTIA A+
- IT Technician
- Help Desk Institute (HDI) Support Center Analyst
- HDI-Desktop Support Technician
- ITIL Foundation

Admission Requirements

- A high school diploma or GED
- One year of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) ITSUP-101	Computer Information Systems Fundamentals	3
(1) ITSUP-102	CompTIA A+ Essentials	3
(1) ITSUP-140	Support Center Analyst (HDI-SCA, HDI-DST, ITIL)	3
	TOTAL CREDITS:	**9**

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

Start Dates: August and January

STEM
Milwaukee Area Technical College
matc.edu/course-catalog/stem

Water Technician

CERTIFICATE Mequon Campus

ENVIRONMENTAL HEALTH AND WATER QUALITY TECHNOLOGY
matc.edu/academics/pathways

Certificate
- Water Technician, p. 202

Associate Degree
- Environmental Health and Water Quality Technology, p. 64

Gain the core skills recognized by the water industry for an entry-level position. The water technician performs basic hands-on work, and this certificate is part of the pathway to help you progress in attaining more technical skills.

Admission Requirements

- A high school diploma or GED
- One semester of high school-level algebra

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **ENVHEL-101**	Introduction to Environmental Health/Water Quality	**3**
(1) **ENVHEL-109**	Applied Environmental Chemistry	**4**
(1) **MATH-107**	College Mathematics ‡ (or) Any 200-level MATH course	**3**
(2) **ENG-195**	Written Communication (or) ENG-201 English 1 ‡	**3**
(2) **ENVHEL-142**	Principles of Water Resources	**3**
	TOTAL CREDITS:	**16**

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

Start Dates: August and January

Community & Human Services
Milwaukee Area *Technical College*

matc.edu/course-catalog/community-human-services

Welding Fundamentals

CERTIFICATE Mequon, Oak Creek and West Allis campuses

WELDING
matc.edu/academics/pathways

Certificate
- Welding Fundamentals, p. 203

Technical Diploma
- Advanced Metal Fabrication, p. 109
- Welding, p. 184

Develop entry-level welding skills in shielded metal arc welding and gas tungsten arc welding. You also will gain fundamental blueprint reading skills and strengthen workplace communication skills.

Admission Requirement

- A high school diploma or GED

Current MATC students should consult their Academic Program Plan for specific curriculum requirements.

Some certificates can be earned while completing associate degrees and/or technical diplomas that are eligible for financial aid. Certificate programs alone are not eligible for financial aid; contact MATC for details. All credits in certificate programs must be earned at MATC with a 2.0 cumulative GPA or higher. Upon completion of the certificate's requirements, the student's transcript is notated with the credential earned.

COURSES		Credits
(1) **ENG-340**	Workplace Communication	**2**
(1) **WELD-313**	Shielded Metal Arc Welding	**5**
(1) **WELD-314**	Gas Tungsten Arc Welding	**5**
(1) **WELD-350**	GTAW Processes	**1**
(1) **WELD-351**	Shielded Metal Arc Welding Processes	**1**
(1) **WELD-360**	Blueprint Reading for Welders	**2**
(1) **WELD-380**	Welding Trades Mathematics	**1**
	TOTAL CREDITS:	**17**

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

Start Dates: August and January

Manufacturing, Construction & Transportation
Milwaukee Area *Technical College*

matc.edu/course-catalog/manufacturing-construction-transportation

Course Descriptions/Alphabetical List of Subjects

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 **CARP-301,** the letters **CARP** form the alphabetic code that identifies the subject in which the course is taught – the subject is Carpentry for this example.

Below you will find a list of the subjects and their alphabetic codes and department numbers. **The listing of courses in this Course Descriptions section is by alphabetic codes.**

The set of three numbers identifies the type of program/type of credit. In the above example, **301** is within the 300-399 range, identifying CARP-301 as a technical diploma/diploma credit course. See the table on the right for the numerical range for each type of program.

Range	Type of Program	Type of Credit/Hours Per Credit
100-199 **200-299**	Associate Degree (A.A.S.) Liberal Arts (A.A., A.S.) College Parallel	**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).
300-399	Technical Diploma	**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).
700-799	Adult High School	**High school credit:** 4,500 minutes of instruction (75 hours). See the 700-level section of this catalog for Adult High School course descriptions.
700-799	Basic Skills, ESL	**Noncredit/Developmental:** up to 36 55-minute periods of instruction. See the 700-level section of this catalog for Basic Skills and ESL course descriptions.

LIST OF SUBJECTS FOLLOWED BY DEPARTMENT NUMBERS IN PARENTHESES

ABS	Automated Building Systems (481)
ACCTG	Accounting (101)
ADVMFG	Advanced Manufacturing (664)
ANIM	Animation (207)
ANTECH	Anesthesiology (541)
AODA	Alcohol and Other Drug Abuse Services (550)
APPSVC	Appliance Servicing (445)
ARCHT	Architectural Technology (614)
ART	Art (815)
AUDIO	Audio Production (701)
AUTO1	Automobile - Mechanical (404)
AUTO2	Automotive Technology (602)
AUTOBY	Auto Collision Repair/Refinish (405)
AVITEC	Airframe and Aircraft Technology (486)
BADM	Business Administration (102)
BAKING	Baking (314)
BARCOS	Barbering/Cosmetology (502)
BNLST	Business Analyst (102)
BRHLTH	Business-Related Health (160)
CABMIL	Cabinetmaking and Millwork (409)
CARP	Carpentry (410)
CAS	Creative Advertising Strategist (201)
CHEMT	Chemical Technology (603)
CHILDD	Child Development (307)
CIVIL	Civil Engineering Technology (607)
CLABT	Clinical Laboratory Technology (513)
CNC	Computer Numeric Control (444)
COMPSW	Computer Software (103)
CONSTR	Construction Trades General (476)
CSG	Computer Simulation and Gaming (153)
CSTECH	Central Service Technician (534)
CULART	Culinary Arts (316)
CULMGT	Culinary Management (317)
CVTECH	Cardiovascular Technology (521)
DENAST	Dental Assistant (508)
DENHYG	Dental Hygiene (508)
DIESEL	Diesel/Powertrain Servicing (412)
DIETNT	Dietetic Technician (313)
DLABT	Dental Laboratory Technician (507)
EBUS	eBusiness (135)
ECON	Economics (809)
EDF	Educational Foundations (809)
ELCTEC	Electronics Technology (605)
ELECTY	Electricity (413)
EMS	Emergency Medical Services (531)
ENG	English (801)
ENTREP	Entrepreneurship (145)
ENVHEL	Environmental Health (506)
EPROD	eProduction (701)
FIN	Finance (114)
FIRE	Fire Protection Technician (503)
FLANG	Foreign Language (802)
FUNERL	Funeral Service (528)
GENENG	English – PLI (831)
GENREA	Reading – PLI (851)
GENST	General Studies (890)
GLOBAL	Global Studies (140)
GRDS	Graphic Design (201)
HEALTH	Health (501)
HIST	History (803)
HIT	Health Information Technology (530)
HORT	Horticulture (001)
HOTEL	Hotel/Hospitality (109)
HRMGT	Human Resources Management (116)
HSM	Healthcare Services Management (530)
HUMSVC	Human Services (520)
HVAC1	Air Conditioning, Refrigeration, Heating (401)
HVAC2	Air Conditioning/Refrigeration Technology (601)
HYDPNU	Hydraulics Pneumatics (419)
INDSGN	Interior Design (304)
INDVTS	Individualized Technical Studies (825)
INTP	Interpreter Technician (533)
IT	Information Technology (107)
ITDEV	IT Programming/Development (152)
ITNET	IT Networking (150)
ITSEC	IT Information System Security (150)
ITSUP	IT Support (154)
LOGMGT	Logistics Transportation/Materials Management (182)
MACHTL	Machine Tool (420)
MASON	Bricklaying and Masonry (408)
MATH	Mathematics (804)
MATRLS	Materials Technology (613)
MCDESG	Mechanical Design Technology (606)
MDRAFT	Mechanical and Computer Drafting (421)
MEDAST	Medical Assistant (509)
MEDINT	Medical Interpreting (538)
MEET	Meeting and Event Planning (109)
MFGMNT	Manufacturing Maintenance (462)
MGTDEV	Management Development (196)
MKTG	Marketing (104)
MLABT	Medical Laboratory Technology (513)
MTLFAB	Metal Fabrication (457)
MTLGY	Metallurgy (422)
MUSIC	Music (805)
NATSCI	Natural Science (806)
NRSAD	Associate Degree Nursing (543)
NRSNA	Nursing Assistant (543)
NRSPN	Practical Nursing (543)
NURSAD	Associate Degree Nursing (510)
OFTECH	Office Technology (106)
OTASST	Occupational Therapy Assistant (514)
PAINT	Painting and Decorating (424)
PHARMT	Pharmacy Technician (536)
PHOTO	Photography (203)
PHYED	Physical Education (807)
PLEGAL	Paralegal (110)
PLUMB	Plumbing (427)
POLICE	Police Science (504)
POWENG	Power Engineering (428)
PSYCH	Psychology (809)
PTASST	Physical Therapy Assistant (524)
QETECH	Quality Engineering Technology (623)
QLTYIN	Quality Interdisciplinary (625)
RADT	Radiologic Technology (526)
RBUS	Related Business (105)
RDIAT	Renal Dialysis (517)
RESPC	Respiratory Therapist (515)
RLEST	Real Estate (194)
SOCSCI	Sociology Science (809)
SPEECH	Speech/Communication (810)
SURGT	Surgical Technology (512)
SUSTN	Sustainability (481)
TDMKG	Tool and Die Making (439)
TRCKDR	Truck Driving (458)
TV	Telecasting (701)
VICOM	Visual Communication (206)
WEBDEV	Web Development/Commercial Art (201)
WELD	Welding (442)
WELDTC	Welding Technology (621)

COURSE DESCRIPTION INFORMATION SUBJECT TO CHANGE. FOR INFORMATION ONLINE, VISIT SELFSERVICE.MATC.EDU.

ABS – Automated Building Systems (Department: 481)

ABS-105 **Credits: 3**
The LEED Rating System
This course explores the LEED rating system and how it is being used to drive sustainable buildings, and helps prepare students for taking the LEED Accredited Professional exam.

ABS-140 **Credits: 3**
Building Systems 1
Course examines mechanical building systems and operations related to heating, ventilation, air conditioning equipment and water systems. Course learning outcomes shall apply HVAC systems to controlling building environments. Learners will gain knowledge and skills of systems and controls that create a healthy and productive environment in commercial and industrial buildings.

ABS-141 **Credits: 2**
Building Systems 2
Course examines building lighting, alarms, security, network access, and building envelope systems. Learners will apply course concepts to the JCI Metasys System extended architecture for managing building operations.

ABS-142 **Credits: 1**
Measurement and Verification for Automated Building Systems
Course examines the benefits of performing measurement and verification; as well as testing procedures, tools and equipment, instrumentation used, and how to interpret data. Learners will explore different methods of measuring and verifying energy savings using the International Performance Measurement and Verification Protocols (IPMVP). Learning outcomes include hands-on experience using kWh meters, energy management systems, and data loggers. Information covered will prepare learners to take the national certification exam for measurement and verification. Concepts will be applied to the process of verifying that energy management projects are working. Course reinforces documentation, communication, project management, and computer skills including word processing and spreadsheets.

ABS-143 **Credits: 2**
Electrical Concepts/Control 1 for ABS
Learners will explore how to apply basic electrical concepts to building automated systems control. Course examines basic electrical theories, electrical symbols, line and ladder diagrams, wiring schematics, DC and AC circuits, and applies these to building automated systems control. Control theories will be applied to job duties and tasks performed on building automated systems.

ABS-144 **Credits: 2**
Control Theory 2 for ABS
Course builds upon the electrical concepts learned in Control Theory 1, and examines control systems used in heating, ventilation, and air conditioning systems. Learning outcomes include: control system submittals, sequence of operations, system architecture, control languages, and commissioning controls. Control theories will be applied to both HVAC and water systems. Learners will apply course concepts to the JCI Metasys System extended architecture for managing building operations. Prerequisite(s): ABS-143 or SUSTN-143.

ABS-145 **Credits: 2**
Control Theory 3 for ABS
Course examines control theories for DOC technologies, lighting, alarms, security, and building envelope technologies used in various automated systems. Programmable controls and graphical interfaces will be introduced. Hands-on learning lab simulations will build skills and help apply concepts to job duties and tasks. Prerequisite(s): SUSTN-143, SUSTN-144.

ABS-148 **Credits: 4**
Automated Building Control Systems
Course examines JCI Metasys, IVUE Carrier, and Trane Tracer building automated control system technologies. Learners will compare systems and apply concepts to managing automated building control systems. Hands-on learning lab for the Metasys System will help learners build skills in writing, revising and verifying programs. Prerequisite(s): SUSTN-140, SUSTN-141, SUSTN-142, SUSTN-143, SUSTN-144, SUSTN-150.

ABS-149 **Credits: 4**
Networking Automated Building Systems
Course examines servers, network servers, and other programs; virtual area networks; wireless controls; and building automatic control networks (BACNET) and LON system architectures.

ABS-150 **Credits: 2**
Energy Auditing for ABS
Learning outcomes include exploring the process and requirements for completing an energy audit, examining the ASHRAE levels of audits, and relating these to the job duties and tasks performed for building automated control systems. Learners will complete an ASHRAE Level 1 energy audit project as a foundation for developing skills needed for automated building systems related careers.

ABS-151 **Credits: 2**
Commissioning Automated Building Systems
Course explores commissioning related job duties and tasks involved in starting up new automated building systems and controls. Course learning outcomes include applying the commissioning process to automated building systems, examining commissioning related roles and responsibilities, exploring the benefits of commissioning and how these relate to energy management, using functional performance testing (FPT) and construction checklists in the commissioning process.

ABS-153 **Credits: 1**
ABS Capstone Project Course
Course provides a capstone project for automated building systems control. Learners will identify, plan and execute a project in one of the following areas: energy auditing, commissioning, fire/security systems, controls technologies or systems technologies. Strategies for training owners and operators also will be explored. Other capstone projects may be done with preapproval by the department. In addition, an optional industry-based internship may be substituted in lieu of a project. Prerequisite(s): SUSTN-150.

ACCTG – Accounting (Department: 101)

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
A continuation of Accounting 1, focusing on long-term assets, liabilities and accounting for partnerships and corporations. Financial statement analysis and the cash flow statement also are introduced. Students become familiar with accounting software by completing a computerized practice set. Prerequisite(s): ACCTG-111 (minimum grade of C).

ACCTG-116 **Credits: 4**
Intermediate Accounting
A study is made of advanced accounting practices and procedures. Emphasis is placed on accounting theory as it relates to income determination and balance sheet preparation for corporate commercial enterprises. Prerequisite(s): ACCTG-113 (minimum grade of C).

ACCTG-117 **Credits: 3**
Intermediate Accounting 2
A continuation of Intermediate Accounting 1, completing the study of advanced accounting practices and procedures. Prerequisite(s): ACCTG-116 (minimum grade of C).

ACCTG-121 **Credits: 4**
Income Taxation
The determination of individual income taxes including income, deductions, tax calculations, credits and payments are studied. Students are introduced to income tax laws as they apply to business entities such as partnerships, S-corporations, C-corporations, and fiduciary tax entities. Also covered are estate and gift taxes (transfer taxes). Students will prepare individual and business tax forms related to these topics both manually and using tax software.

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 Microsoft Excel and Access computer software. This course assumes that students have basic knowledge of accounting. Students will 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
A 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 use of cost data in budgetary cost control, internal profit measurement, profit planning, capital budgeting and decision-making.

ACCTG-130 **Credits: 3**
Computerized Accounting
This introductory QuickBooks course takes students through the procedures, controls, inputs and outputs in today's computerized accounting systems. Students will be able to create a company file, process accounts receivable and accounts payable, manage time-tracking and payroll, track inventory and fixed assets, manage budgets, maintain ledgers and journals, and create reports. Students will take the required QuickBooks Certification Exam for an extra fee. Prerequisite(s): ACCTG-102 or ACCTG-111.

ACCTG-140 **Credits: 3**
Accounting for Governmental and Nonprofit Entities
Overview course in the area of governmental and not-for-profit accounting. The 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 also are studied. Prerequisite(s): ACCTG-110 or ACCTG-113.

ACCTG-142 **Credits: 2**
Payroll Accounting
Procedures used in computing and recording wages and salaries, payroll taxes and deductions are studied. Alternative processing systems (manual, service bureau and microcomputer) are explored. Federal and state payroll and tax regulations are studied, in addition to preparing payroll tax and information returns.

ACCTG-143 **Credits: 3**
Payroll Accounting Applications
This course is designed as an extension of ACCTG-142 Payroll Accounting. The student will develop skills in the computerized preparation of payroll records and filing requirements as required by federal and state law using specialized payroll software.

ACCTG-145 **Credits: 3**
Forensic Accounting
Emphasis is placed on explaining the various schemes used by employees to commit fraud, quantifying a company's financial loss from these schemes, illustrating the human factors in fraud, and preventing and detecting fraud. Prerequisite(s): ACCTG-110 or ACCTG-113.

ACCTG-150 **Credits: 3**
Accounting Practice With a Systems Approach
Using source documents and a manual practice set, students will review procurement and accounts payable, billing and accounts receivable, cash control and general ledger systems. Adjusting entries will be reviewed. Students will then use QuickBooks software to complete an integrated case study with special emphasis on the general ledger, accounts payable, accounts receivable and payroll. Prerequisite(s): ACCTG-116 (minimum grade of C), ACCTG-130 and ACCTG-142 or ACCTG-143.

ACCTG-155 **Credits: 3**
Applied Individual Income Tax
Emphasis is placed on applying the knowledge and skills obtained in Individual Income Tax by preparing tax returns for actual clients. Tax returns are prepared using IRS software. Prerequisite(s): ACCTG-121 or ACCTG-123 (minimum grade of B).

ADVMFG – Advanced Manufacturing

(Department: 664)

ADVMFG-100 **Credits: 2**
Introduction to Control Systems
In this course, learners are introduced to basic concepts of industrial computer-controlled systems. The learner explores various types of programming using robots and PLCs and participates in lab experiments designed to introduce programming principles, electronic inputs and outputs (analog and digital), communication between system components including ethernet protocols. Upon completion of the course, learners will be able to explain how the control processes are utilized to automate manufacturing facilities.

ADVMFG-102 **Credits: 3**
Advanced Manufacturing Motor Controls
This course examines the fundamentals of electric motors and motor control. Students will learn to recognize and draw basic symbols, use the language of motor control, and apply these in industry adopted formats. Students also will learn to draw and read ladder and wiring diagrams, and be introduced to the logic used in motor control. Learners will apply this logic to correctly interpret, install, service, and wire control circuits. Wiring of panels, machines and systems also will be examined. Prerequisite(s): ADVMFG-100.

ADVMFG-105 **Credits: 2**
Introduction to Robotics
In this course, learners are introduced to programming techniques for industrial robots. The learner examines teach pendant programming including I/O, routines, decision making, six frames of positional

operation, and robot communication. Upon completion of the course, learners will be able to operate and program industrial robots commonly used in Industry 4.0. Prerequisite(s): ADVMFG-110.

ADVMFG-110 **Credits: 2**

Introduction to Mechatronics

In this course, learners are introduced to microprocessor-controlled electromechanical systems. The learner examines how individual components work, and how they are integrated into simple systems. Upon completion of the course, learners will understand what technicians do in the workplace and how industry utilizes mechatronics in advanced manufacturing.

ADVMFG-111 **Credits: 3**

Advanced Manufacturing Machine Mechanisms

In this course, learners apply input forces and movement to mechanisms and determine the output forces and movement of the mechanisms. Applied mechanisms will be presented including: levers, bearings, gears, cams, couplings, brakes and clutches, belt and chain drives through splines, pins, and keys. Learners explore mechanisms that are supported by structural components such as a frame, fasteners, bearings, springs and other machine elements. Upon completion of the course, learners will analyze the combination of force and movement within machine elements to determine if system requirements are met and machine functions safely. Prerequisite(s): ADVMFG-102.

ADVMFG-112 **Credits: 3**

Fundamentals of Machining Processes

In this course, learners investigate computer numerical control (CNC) concepts and skills including setup and operation of CNC lathe and milling machines. Learners apply basic programming skills, G and M code functions, and fundamental features of CNC machine operations. Programming examples will be presented using canned cycles, linear and circular interpolation. Upon completion of the course, learners will be able to set up with tool offsets, run first part operations, perform manual data input functions as required, and run production operations of CNC machines. Prerequisite(s): ADVMFG-117.

ADVMFG-113 **Credits: 3**

Advanced Manufacturing DC/AC Circuits 1

This course is designed for students interested in advanced manufacturing while enhancing their basic skills in electronics and 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): MATH-115.

ADVMFG-114 **Credits: 3**

Advanced Manufacturing DC/AC Circuits 2

This course, along with ADVMFG-113, helps complete the sequence for students requiring DC and AC electronics in Advanced Manufacturing 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 prepare technical reports. Prerequisite(s): ADVMFG-113.

ADVMFG-115 **Credits: 2**

Interpret Engineering Drawings

In this course, learners build the foundation skills needed to read and interpret industrial prints. These skills, used to interpret industrial prints, are presented in a logical order: title blocks, change blocks, shop notes, symbols, lines, orthographic views, section views, auxiliary views, pictorial views and assembly views. Learners interpret part geometric dimensions and tolerances using basic math skills. Upon completion of the course, learners will be able to read, interpret and apply drawing content to advanced industrial equipment.

ADVMFG-116 **Credits: 2**

Introduction to Manufacturing Quality Control Systems

In this course, learners explore skills and tools necessary to fully participate in a lean, continuous improvement manufacturing environment. These include: standardized work instructions, Total Productive Maintenance (TPM), mistake-proofing, changeover reduction, ergonomics, root cause analysis, Six Sigma, and quality management. Learners are introduced to basic statistical tools and fundamental concepts needed to improve and control industrial processes. Upon completion of the course, learners will be able to use statistical tools to improve processes, define problems, set priorities, predict outcomes, and identify causes of quality problems. Prerequisite(s): ADVMFG-120.

ADVMFG-117 **Credits: 2**

Advanced Manufacturing Materials and Processes

In this course, learners examine the relationship between the properties and processes of various materials used in advanced industrial equipment. The properties include: mechanical strength, chemistry, and basic material characteristic. The processes include: modern manufacturing techniques, fabricating, casting, metallic finishes, plating and chip removal. Upon completion of the course, learners will be able to match materials and processes used in the manufacture of equipment. Prerequisite(s): ADVMFG-105.

ADVMFG-120 **Credits: 2**

Introduction to Industrial Internet of Things (IIoT)

In this course, learners are introduced to theoretical and practical topics of the Industrial Internet of Things (IIoT). The learner investigates the range of sensor and actuator devices available, ways in which they communicate and compute, methods for getting information to and from IIoT-enabled devices, and ways of visualizing and processing data acquired from the IIoT. Upon completion, learners will utilize hardware and software to construct a sensor network within an existing system and utilize industry-standard tools to visualize the data captured. Prerequisite(s): ADVMFG-110.

ADVMFG-121 **Credits: 2**

Vision and Smart Sensors

In this course, learners will utilize 2D cameras, lighting systems and smart sensors in machine applications to provide imaging-based automatic inspection and analysis for such applications as automatic inspection, process control, and robot guidance. Learner will use vision systems to: sort good and bad parts; identify, position and orient objects' images for robot guidance and orientation using edge detection; blob detection; pattern recognition; image acquisition; and bar code and QR code recognition. Learners will integrate smart sensors into PLC machine applications. Upon completion of this course, learners will apply camera and smart sensors into a machine process application. Prerequisite(s): ADVMFG-105.

ADVMFG-122 **Credits: 2**

Advanced Manufacturing Engineering Project Management

In this course, learners explore a systematic approach to manufacturing project management. Learners examine project scope and its relationship to project success by considering coordinated schedules, activities, people, and resources. Upon completion of the course, learners will be able to apply Work Breakdown Structures, Activity Diagrams, and Gantt Charts to short-term and long-term manufacturing projects. Prerequisite(s): ADVMFG-111 and ADVMFG-196.

ADVMFG-130 **Credits: 4**

Advanced Manufacturing Digital Electronics

This is an introductory course in digital logic devices and circuits. Students learn the basic logic functions, sequential and synchronous logic circuitry, general applications and troubleshooting techniques through hands-on lab work. Student will learn interfacing techniques to integrate with manufacturing equipment. The computer will be used to generate circuit simulations and technical reports.

ADVMFG-190 **Credits: 2**
Advanced Manufacturing Design Problems
This course introduces the students to sensors and controls in advanced manufacturing systems. The student will work with advanced manufacturing controllers to control a manufacturing system. Data collection and system controls will be implemented and installed to manipulate a manufacturing system or simulation. The final system will be properly documented with operation manuals and service manuals to indicate troubleshooting procedures. Prerequisite(s): ADVMFG-121.

ADVMFG-192 **Credits: 3**
Advanced Manufacturing Fluid Power
Students are introduced to symbols, diagram logic, operation, and application of various hydraulic/pneumatic devices used in advanced manufacturing systems. Students will build and test basic fluid power circuits. Students will interface basic fluid power circuits to PLC systems. Prerequisite(s): ADVMFG-111, ADVMFG-196.

ADVMFG-196 **Credits: 3**
Advanced Manufacturing PLC System Basics
This course is a study of programmable logic controllers used in advanced manufacturing systems. The history and principles of operation and the installation, programming, and maintenance of the programmable logic controllers (PLC) are covered in lecture. Basic programming instructions are covered in lecture and lab, and downloaded and simulated on PLC workstations. Prerequisite(s): ADVMFG-130.

ADVMFG-198 **Credits: 2**
Advanced Manufacturing PLC System Application
In this course, learners develop machine process automation control systems with temperature, pressure, flow, and level controls. Learners investigate the utilization of PID loops in PLC program design. Learners program a PLC using vision, smart sensors, servos, motor controls, and analog IO. Learners develop PLC programs including human machine interface (HMI) with displays for machine input and output data. Upon completion of the course, learners will be able to build a PLC motion project for basic machine process automation control systems. Prerequisite(s): ADVMFG-196.

ANIM – Animation
(Department: 207)

ANIM-101 **Credits: 3**
Basic Drawing for Animators
This course introduces students to the basic principles of drawing volume, shape and form in a digital environment. Students learn to color, construct and create animations in an industry-standard software package. Students will explore digital painting, scene compositing, creating x-sheets, building character libraries, sync and adjusting timing as applied to animation film-making.

ANIM-104 **Credits: 3**
Principles of Character Development
This course will introduce students to character development as it relates to the field of computer animation. Concepts such as pose, expression, scale, squash and stretch will be explored. Students will use hand-drawing techniques and traditional "cartoon" style characters. Students also will learn to bring their drawings into the computer to be adjusted, modified and enhanced with Photoshop.

ANIM-106 **Credits: 3**
Principles of 3D Animation
This introductory course will guide students through the concepts and techniques used to produce and animate virtual objects in a virtual three-dimensional environment. Basic modeling, texturing and Forward Kinematic motion techniques will be covered using 3D Studio Max.

ANIM-110 **Credits: 3**
Digital Life Drawing
This course will introduce students to the foundation of gesture and quick sketching. Students will draw utilizing various mediums in Photoshop on the Wacom Cintiq tablet/monitors. This course will be offered in the Spring semester.

ANIM-111 **Credits: 3**
Intermediate Digital Life Drawing
This course will introduce students to the more advanced techniques of quick sketching and digital painting. Students will draw utilizing various mediums in Photoshop on the Wacom Cintiq tablet/monitor. This course will be offered in the Fall semester. Prerequisite(s): ANIM-110.

ANIM-115 **Credits: 3**
Refining the Character
In this course, students will 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, ANIM-125.

ANIM-120 **Credits: 3**
Environment and Set Design
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-106.

ANIM-121 **Credits: 3**
Intermediate 2D Animation
Students will continue to develop their skills in character animation in Adobe Animate, Photoshop, After Effects. Students will be presented with a series of animated assignments dealing with the 12 Principles of Animation. Prerequisite(s): ANIM-138.

ANIM-124 **Credits: 3**
Animation Layout and Design
Introduction of concepts/principles of layout design in 2D animation using a variety of assignments. Students will be expected to develop a working knowledge of perspective, multi-plane camera techniques, and placement of characters/elements into a scene. Prerequisite(s): ANIM-114.

ANIM-125 **Credits: 3**
3D Modeling
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) surfaces 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-106.

ANIM-130 **Credits: 3**
3D Simulations and Illustrations
This course will explore product and packaging design, medical illustration and mechanical illustration. The use of nontraditional shaders such as cartoon shading will be explored in order to achieve a more hand-drawn or illustrated look. Rendered output also will be manipulated with industry-standard image adjustment tools. Prerequisite(s): ANIM-125, ANIM-138.

ANIM-131 **Credits: 3**
Advanced 2D Animation
This will be an exploratory approach to more advanced animation skills, introducing better acting with students' characters to support the story of the short film they are creating. Prerequisite(s): ANIM-121.

ANIM-133 **Credits: 3**
Advanced Conceptual Design
Conceptual design that encompasses all aspects of animation theory and practices. Students will work toward conceptual design of the backgrounds, props and secondary characters to support the main cast of characters. Photoshop will be used in class. Prerequisite(s): ANIM-114.

ANIM-135 **Credits: 3**
Character Expression and Lip Sync
This class will explore 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-180.

ANIM-138 **Credits: 3**
Animation for Game Development
Students will be introduced to breaking movement down into cycles of animation and 2D sprites to be used in game development. Also, time will be allocated to developing basic background-level designs as applied to game development. Prerequisite(s): ANIM-101, ANIM-104.

ANIM-140 **Credits: 3**
Timelines, Keyframes and Kinematics
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 our digital characters. We also will explore topics such as using Inverse and Forward Kinematics during an animation using 3ds Max. Prerequisite(s): ANIM-101, ANIM-106.

ANIM-141 **Credits: 3**
Acting for Animation/Lip Sync
The course will introduce students to concepts and principles of acting for animation and lip syncing utilizing Adobe Animate and Adobe Character Animator. Students will be responsible for animated acting with lip sync as applied to animation. Prerequisite(s): ANIM-110, ANIM-121.

ANIM-145 **Credits: 3**
Intermediate 3D Animation
This course continues from ANIM-140 Timelines, Keyframes and Kinematics. We will explore and analyze mechanical and quadruped motion from several sources in order to accurately and believably replicate motion with our digital objects and creatures. We also will explore topics such as various constraining techniques and automated approaches used during this type of animation using 3ds Max. Prerequisite(s): ANIM-140.

ANIM-150 **Credits: 2**
Advanced Animation
This is a project-based course. 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 for the students. Students will have access to instructor at all times. Students will be expected to communicate with the instructor each class to discuss progress. This course allows the student an in-depth study of the animation production process. Prerequisite(s): ANIM-121 or ANIM-145.

ANIM-156 **Credits: 3**
Broadcast Animation
This course 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): Animation students take ANIM-101, ANIM-104 and ANIM-106. Web and Digital Media Design students take VICOM-150.

ANIM-160 **Credits: 2**
Animation Portfolio
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-124 or CSG-181.

ANIM-165 **Credits: 3**
Motion Analysis for Animation
This course will guide students through the concepts and techniques used to add natural movement to digital animation. Students will work through several motion analyzation techniques and apply them to their animations. The techniques explored in this course include rotoscoping, using depth-sensing cameras and 3D motion capture. Prerequisite(s): ANIM-121 or ANIM-165.

ANIM-180 **Credits: 3**
Digital Cinematography
Digital cinematography 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.

ANTECH – Anesthesiology (Department: 541)

ANTECH-102 **Credits: 2**
Introduction to Anesthesia Technology
This course 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 non-patient related emergencies. Research papers on related topics and a group project 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): ANTECH-102 and NATSCI-177 or NATSCI-201, and admission to the Anesthesia Technology (10-541-1) program.

ANTECH-118 **Credits: 3**
AT Instrumentation 1
The 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 also will be covered.
The setup, 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): ANTECH-102 and 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 non-direct patient duties. Students experience various AT environments as scheduled. An additional four hours per week are required for on-campus lectures/discussions. Prerequisite(s): ANTECH-117, ANTECH-118, and admission to the Anesthesia Technology (10-541-1) program.

ANTECH-133 **Credits: 3**
Anesthetics
The 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
The 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 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 airway equipment, monitoring devices, point of care testing analyzers, and cleaning and disinfection of anesthesia equipment will be discussed and demonstrated. 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
This course presents students with their first opportunity in a direct patient care setting, while beginning to perform the duties of an AT. 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): ANTECH-139.

ANTECH-186 **Credits: 4**
Anesthesia Technology 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. A written journal detailing the clinical phase of instruction will be required. 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 will be required. Prerequisite(s): ANTECH-186.

AODA – Alcohol and Other Drug Abuse Services
(Department: 550)

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
This 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/Treatment Plan
This course 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 also is a practice-oriented course and students will participate in a variety of screening, assessment and treatment-planning situations. Prerequisite(s): HUMSVC-102, HUMSVC-103, HUMSVC-113.

AODA-152 **Credits: 3**
Service Coordination and Documentation
This course 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 also are a primary focus of the class. Prerequisite(s): AODA-109.

AODA-154 **Credits: 3**
Counseling Skills Development
This course 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, HUMSVC-113.

AODA-160 **Credits: 3**
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.

AODA-161 **Credits: 3**
Treatment Issues
This course 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.

AODA-162 **Credits: 3**
Service Delivery Issues
This course 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.

APPSVC – Appliance Servicing
(Department: 445)

APPSVC-308 **Credits: 4**
Electricity for Appliance Servicing
This course 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): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-310 **Credits: 5**
Laundry Equipment
This course covers the basics of the laundering process and the reasons for the various cycles. Functions of the mechanical and electromechanical components are isolated and explained. Applications of gas and electric drying heat are taught. Prerequisite(s): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-316 **Credits: 4**
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 also are covered. Prerequisite(s): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-324 **Credits: 4**
Refrigeration 1 (Theory and Techniques)
This course 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 also are covered. Prerequisite(s): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-329 **Credits: 1**
Related Business for Appliance Service
This course is designed to orient the student to the nature and scope of the appliance technician's work, including meeting and working with customers, as well as providing selected skills in business English and business practices. Prerequisite(s): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-340 **Credits: 4**
Kitchen Equipment 2
Electric range and microwave circuits, as well as the use of symbols, are analyzed. Instruction and practical training are given in the reading of wiring diagrams used by service technicians. Prerequisite(s): Must be admitted to the Appliance Technician (31-445-1) program.

APPSVC-342 **Credits: 5**
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): Must be admitted to the Appliance Technician (31-445-1) program.

ARCHT – Architectural Technology (Department: 614)

ARCHT-101 **Credits: 4**
Architectural Theory and Drawing 1
This course introduces students to the architectural process and the basic skills required of the technician, such as architectural lettering, freehand sketching and reading architectural drawings. Students also are introduced to the computer as a tool to be used in architectural projects.

ARCHT-102 **Credits: 5**
Architectural Theory and CADD 2
Students will be expected to continue developing their skills in architectural sketching. They will be introduced to the early stages of the design process, to the use of architectural reference materials and to presentation drawing techniques. In addition, they will be introduced to 3D architectural building information modeling software. The emphasis in drawing and detailing will be on wood frame and masonry construction systems. Prerequisite(s): ARCHT-101.

ARCHT-103 **Credits: 5**
Architectural Theory and CADD 3
Students are expected to continue developing their skills in architectural design, detailing, sketching and computer applications. They will further explore the design process and be introduced to site planning, and architectural design and development principles. The emphasis in construction documentation, detailing, and building information modeling will be on commercial construction systems, such as reinforced concrete and steel. Computer work will include expanded applications for CADD modeling and presentation programs. Prerequisite(s): ARCHT-102.

ARCHT-104 **Credits: 5**
Architectural Theory and CADD 4
Students are expected to use the knowledge gained in previous courses in the development of a design project of their own choosing and the associated construction documentation. Students will be expected to use the computer in the development of at least 75% of this final project. Additional computer work will include integration and budgeting, estimating and specification writing assignments in ARCHT-141 Architectural Practices and Procedures. Prerequisite(s): ARCHT-103.

ARCHT-105 **Credits: 2**
Architectural History
This course offers an introduction to the field of architecture. An appreciation for architecture is developed through an overview of architectural history and an analysis of architectural design and construction concepts that have been applied to buildings from the Egyptian period through the present time and into the future.

ARCHT-106 **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. Prerequisite(s): ARCHT-102.

ARCHT-110 **Credits: 2**
Computer Applications for Architecture
This computer applications course is designed to provide students with word processing, spreadsheet, and PowerPoint and internet skills used in the field of architecture. Additionally, the course is designed to introduce students to AutoCAD and the interface of the software with the MS Windows environment and the internet.

ARCHT-120 **Credits: 3**
Structural Systems and Components
The main objective of this course is to identify structural systems and explain how they function. Emphasis is placed on the relationship between component parts and the structure as a whole. This is accomplished through the use of descriptions, computations and analysis. Prerequisite(s): ARCHT-101.

ARCHT-121 **Credits: 2**
Architectural Materials and Methods 1
ARCHT-121 is a detailed examination of light wood frame construction – foundations, floors, walls, roofs and finishes. Topics include construction details and sequencing, documentation with wall section and framing plan, loads, load paths, member sizing, UDC requirements, water penetration, and transfer of heat, air and water vapor.

ARCHT-122 **Credits: 3**
Architectural Materials and Methods 2
ARCHT-122 covers the common materials and methods of commercial construction including masonry, heavy timber, structural frames, steel, site-cast and precast concrete, deep foundations, cladding and low-slope roofs. The course covers the general structural behavior of each of these systems. It covers how assemblies control the flow of liquid water, heat, air and water vapor, as well as fire ratings and other applicable requirements of the International Building Code. Documentation includes detailed sections, framing plans, and roof plans. Prerequisite(s): ARCHT-121.

ARCHT-131 **Credits: 2**
Mechanical and Environmental Systems 1
This course is an introduction to the broad field of mechanical systems as they relate to building design. It will provide students with the information and tools they require to assess the need for those systems in buildings. Emphasis is on understanding the fundamentals of heat transfer, thermal properties, building component locations, and the interrelationships of mechanical systems and building. Students will be expected to use the knowledge gained to read and interpret HVAC drawings. Prerequisite(s): ARCHT-102.

ARCHT-132 **Credits: 2**
Mechanical and Environmental Systems 2
A course 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.

ARCHT-141 **Credits: 2**
Architectural Practices and Procedures
This course 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.

ARCHT-150 **Credits: 2**
Introduction to Revit
This course introduces the student to 3D computer drafting and BIM (Building Information Modeling) using Revit software. It builds on students' 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, also will be covered. Employing title block templates and sheet composition, students will prepare industry-standard drawing sets for presentation. Prerequisite(s): ARCHT-101, CIVIL-102 or INDSGN-102.

ART (Department: 815)

ART-201 **Credits: 3**
Understanding Art
This is a 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.

AUDIO – Audio Production (Department: 701)

AUDIO-100 **Credits: 1**
Introduction to Audio 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 midi and audio.

AUDIO-102 **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. Microphone selection and placement, signal flow and signal processing during tracking and mixing process will have a central focus in lecture and lab hours. Prerequisite(s): Completion of or currently enrolled in AUDIO-100.

AUDIO-103 **Credits: 3**
Recording Live Concerts
Recording Live Concerts is a lecture/lab for the audio engineer, teaching the elements of professionalism, the technical aspects of signal flow, microphone selection and placement and mixing, specifically pertaining to the live music environment. Prerequisite(s): Completion of or currently enrolled in AUDIO-100.

AUDIO-111 **Credits: 1**
Advanced Audio Software
Course offers in-depth, practical study and application of current industry-standard digital audio workstation music software programs. Prerequisite(s): AUDIO-100 or MUSIC-113.

AUDIO-114 **Credits: 2**
Critical Listening of Sound/Music
This course 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. Prerequisite(s): AUDIO-100 or MUSIC-148.

AUDIO-116 **Credits: 3**
Advanced Techniques/Sound Recording
This course builds on the knowledge of the Techniques of Sound Recording in the first semester. Emphasis is placed on creating stereo and surround sound, mixing and mastering. Prerequisite(s): AUDIO-102 or MUSIC-154.

AUDIO-117 **Credits: 3**
Sound Reinforcement
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.

AUDIO-118 **Credits: 2**
Studio Management and Design
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-102.

AUDIO-120 **Credits: 3**
Audio Production for Video Media
This is 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. Prerequisite(s): AUDIO-100.

AUDIO-125 **Credits: 1**
Advanced Midi Recording
Advanced Midi Recording covers the development, implementation, theory and uses of midi equipment. The practical operation of midi hardware and software of several types is learned through lecture demonstrations and project assignments. Prerequisite(s): AUDIO-100.

AUDIO-126 **Credits: 2**
Electronics for Audio Engineers
Students will learn the principles of electronic technology with an emphasis on applications to audio engineering, both in theory and practice. Prerequisite(s): AUDIO-102 or MUSIC-154.

AUDIO-127 **Credits: 3**
Mastering for Media
This course is an introduction to the theory and practical approach to recording audio for gaming and web applications. Prerequisite(s): AUDIO-102.

AUDIO-128 **Credits: 3**
Final Project – Field Work
This is the students' recording project of their 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 notate, process and journal the details in creating the audio recording. Prerequisite(s): AUDIO-116.

AUT01 – Automobile - Mechanical (Department: 404)

AUT01-300 **Credits: 2**
Express Service
This course introduces the student to automotive express and maintenance services as it relates to the auto technician. Use of electronic service manuals, service bulletins and online training will be covered. Students will perform express service duties including wheel and tire services and predelivery procedures.

AUT01-302 **Credits: 2**
Powertrain Maintenance and Light Repair Fundamentals
The 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.

AUTO1-304 **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.

AUTO1-306 **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.

AUTO1-308 **Credits: 2**
Brake and Steering Suspension Fundamentals
The 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.

AUTO1-310 **Credits: 4**
Brakes and Steering Suspension Lab 1
Instruction is given in the diagnosis, inspection, maintenance and repair of automotive 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 AUTO1-308.

AUTO1-312 **Credits: 2**
Brakes and Steering Suspension Lab 2
Construction, operation, service and testing of automotive safety restraint systems (SRS), steering column, electronic suspension and anti-lock brake systems 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 AUTO1-308.

AUTO1-314 **Credits: 2**
Electrical and Electronic Fundamentals
The 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.

AUTO1-316 **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.

AUTO1-318 **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.

AUTO1-322 **Credits: 2**
Engine Control Systems 1 Fundamentals
The 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, AUTO1-318.

AUTO1-324 **Credits: 4**
Engine Control Systems 1 Lab
Instruction is given in the diagnosis, inspection and repair of automotive engine control, ignition and fuel systems and components. Practical lab exercises are performed on late-model vehicles or lab mockups. Prerequisite(s): Completion of or currently enrolled in AUTO1-322.

AUTO1-326 **Credits: 2**
Engine Control Systems 2 Fundamentals/Lab
The 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.

AUTO2 – Automotive Technology (Department: 602)

AUTO2-147 **Credits: 2**
Electrical Systems 2
This course builds on the knowledge and skills gained in Electrical Systems 1. Students use specialized equipment to diagnose and service electrical and electronic systems. Emphasis will be placed on computer-controlled systems and vehicle communication systems. Prerequisite(s): AUTO2-151 and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-148 **Credits: 2**
Manual Transmission and Drivelines
The course covers the operation, diagnosis and repair of manual transmissions, transaxles, differentials, transfer cases, drive axles, four-wheel drive and all-wheel drive systems. Prerequisite(s): AUTO2-147, AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-150 **Credits: 2**
Automotive Fundamentals
This course provides a foundation for students entering the automotive service industry. Instruction in shop practices, tool usage and safety, maintenance and minor repair procedures will be performed.

AUTO2-151 **Credits: 4**
Electrical Systems 1
This course introduces the student to basic automotive electrical and electronic circuits. Included are meter usage, electrical system diagnosis and repair. Operation and testing of batteries, starting and charging systems also will be covered. Prerequisite(s): Must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-152 **Credits: 2**
Automotive Climate Control
This course covers the principles, theory of operation, diagnosis, service and repair of various automotive heating, air conditioning and air delivery systems. Includes preparation for federal certification. Prerequisite(s): AUTO2-151 and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-153 **Credits: 3**
Alignment, Suspension and Steering
This course covers the design, construction and operation of various steering and suspension systems used on late-model vehicles, including electronic ride control, electric steering and tire pressure monitoring systems. Alignments, diagnosis and repair procedures will be performed. Prerequisite(s): AUTO2-151 and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-154 **Credits: 2**
Fuel Management 1
This course covers basic engine operation, fuel systems and ignition systems. Diagnosis and repair of these systems also will be introduced. Prerequisite(s): Completion of or currently enrolled in AUTO2-147 and AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-155 **Credits: 4**
Fuel Management 2
This course builds on knowledge and skills gained in Fuel Management 1, with emphasis placed on engine sensors, computers and control devices used for electronic engine controls and emissions. Diagnosis and repair also will be covered. Prerequisite(s): Completion of or currently enrolled in AUTO2-151 and AUTO2-154, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-156 **Credits: 4**
Fuel Management 3
This course builds on the knowledge and skills gained in Fuel Management 2, with emphasis on diagnosing advanced engine performance concerns. Direct injection, turbos and variable cam timing will be included. Prerequisite(s): AUTO2-147, AUTO2-151, AUTO2-154, AUTO2-155, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-157 **Credits: 4**
Engine Concepts
This course covers the operating principles and construction of internal combustion engines. Disassembly, cleaning, inspection, measuring, and reassembly will be included. Prerequisite(s): Completion of or currently enrolled in AUTO2-151 and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-158 **Credits: 4**
Auto Transmissions
This course covers the theory and operation of automatic transmissions and transaxles. Instruction includes electronic, hydraulic and mechanical systems, diagnosis and repair. Prerequisite(s): AUTO2-147, AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-159 **Credits: 4**
Automotive Brakes
This course covers the design, construction and operation of various braking systems. Diagnosis, service and repair of disc, drum, power brakes, anti-lock, traction control and stability control are included. Prerequisite(s): AUTO2-151 and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-160 **Credits: 3**
Automotive Accessories
This course covers the design and operation of various automotive accessories found on today's vehicles. Diagnosis and repair of these systems also will be covered. Prerequisite(s): AUTO2-147, AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-161 **Credits: 3**
Express Service
This course introduces the student to the dealership as it relates to the technician. Use of electronic service manuals, service bulletins and online training will be covered. Students will perform quick-lane duties, wheel and tire services and predelivery procedures. Prerequisite(s): Must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-164 **Credits: 1**
Applied Automotive Experience 1
Provides the student an opportunity to reinforce newly acquired skills in an approved automotive repair environment and provides occupational experience in the automotive field. Prerequisite(s): Completion of or currently enrolled in AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-165 **Credits: 1**
Applied Automotive Experience 2
Provides the student an opportunity to reinforce newly acquired skills in an approved automotive repair environment and provides occupational experience in the automotive field. Prerequisite(s): Completion of or currently enrolled in AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-166 **Credits: 1**
Applied Automotive Experience 3
Provides the student an opportunity to reinforce newly acquired skills in an approved automotive repair environment and provides occupational experience in the automotive field. Prerequisite(s): Completion of or currently enrolled in AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTO2-167 **Credits: 1**
Applied Automotive Experience 4
Provides the student an opportunity to reinforce newly acquired skills in an approved automotive repair environment and provides occupational experience in the automotive field. Prerequisite(s): Completion of or currently enrolled in AUTO2-151, and must be admitted to the Automotive Technology – Comprehensive (10-602-6) program.

AUTOBY – Auto Collision Repair/ Refinish (Department: 405)

AUTOBY-300 **Credits: 3**
Introduction to Auto Body Fundamentals
The fundamentals of auto body safety regulations, damage analysis, unibody construction, and component alignment, plastic filler application, welding, and dinging sheet metal damage are studied. Discussion, lectures and demonstrations pertain to these areas of auto body repair. Prerequisite(s): Concurrently enrolled in AUTOBY-301, AUTOBY-302, AUTOBY-303 and AUTOBY-305.

AUTOBY-301 **Credits: 1**
Plastic and Composites Repair
The use of plastics is commonplace in vehicle construction. Plastics are commonly damaged during a collision, and repairs to the plastic and composites may be required. This course provides the learner with the knowledge, processes and skills required to identify the type of plastic, the possible repair options, the repair techniques, and the refinishing options for various types of plastics. Prerequisite(s): Concurrently enrolled in AUTOBY-300, AUTOBY-302, AUTOBY-303 and AUTOBY-305.

AUTOBY-302 **Credits: 2**
Estimating and Removal/Installation of Bolt-On Panels
This course provides the opportunity for the learner to develop skills in auto body construction, model identification, damage analysis, parts sources, handwritten damage reports, computerized damage reports, and removal/installation of bolted-on panels. Prerequisite(s): Concurrently enrolled in AUTOBY-300, AUTOBY-301, AUTOBY-303 and AUTOBY-305.

AUTOBY-303 **Credits: 1**
Masking, Prep and Detailing
In this course, learners prepare surfaces to be refinished by utilizing cleaning, sanding, and masking techniques while protecting non-refinish areas of the vehicle from overspray and component damage. Existing finish defect and substrate assessment along with primer product choices, buffing, polishing, and inspection for final delivery also are introduced. Prerequisite(s): Concurrently enrolled in AUTOBY-300, AUTOBY-301, AUTOBY-302 and AUTOBY-305.

AUTOBY-304 **Credits: 1**
Basic Auto Mechanical Systems
This 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 mockups or lab vehicles. Prerequisite(s): Concurrently enrolled in AUTOBY-300, AUTOBY-301, AUTOBY-302 and AUTOBY-303.

AUTOBY-310 **Credits: 4**
Auto Body Fundamentals
Instruction includes live shop repairs, body panel repair/replacement, and refinishing/blending on modern vehicles. Noncontinuing/current students will be required to schedule and pass a hands-on competency test before the start date of the semester. Schedule with a counselor. Prerequisite(s): AUTOBY-300, AUTOBY-301, AUTOBY-302, AUTOBY-303, AUTOBY-305.

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): Concurrently enrolled in AUTOBY-310, AUTOBY-313 and AUTOBY-315.

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-301, AUTOBY-302, AUTOBY-303, AUTOBY-305, and concurrently enrolled in AUTOBY-310, AUTOBY-311 and AUTOBY-315.

AUTOBY-314 **Credits: 1**
Front-End Alignment
This course 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.

AUTOBY-315 **Credits: 5**
Auto Body 2
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. Practical lab exercises are performed on appropriate vehicles. Prerequisite(s): AUTOBY-300, AUTOBY-301, AUTOBY-302, AUTOBY-303, AUTOBY-305, and concurrently enrolled in AUTOBY-310, AUTOBY-311 and AUTOBY-313.

AVITEC – Airframe and Aircraft Technology (Department: 486)

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 power plant 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. 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. They 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-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
The construction, operation and installation of the 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, is 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 also is spent on fluid lines and fittings.

AVITEC-383 **Credits: 1**
Aircraft Maintenance Publications, Records and Mechanics Regulations
The student studies 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.

BADM – Business Administration (Department: 102)

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 and BADM-106.

BADM-106 **Credits: 3**
MS Office for Business Applications
This course provides hands-on training in Microsoft Office. The focus will be on the business application for Windows, Excel, Word and PowerPoint. There will be a special emphasis on the use of Excel tools in business.

BADM-110 **Credits: 3**
Business Communications With Technology
This course is designed to prepare students to communicate effectively in the digital age. Students will learn the various digital tools that are being used in business communication and collaboration today. Students will demonstrate basic writing skills and grammar in the preparation of effective communications using the various digital communication tools available. Tools will include email, Facebook, instant messaging, internet resources, LinkedIn, and various other online communication tools. Students also will demonstrate effective presentation skills that utilize visual aids and digital tools.

BADM-120 **Credits: 3**
Business Analysis
An entry-level course designed to introduce students to the tools used in business for financial analysis. Business Analysis provides the students with the basics of ratio analysis, time value of money, risk analysis, capital budget evaluation and financial statement analysis. Prerequisite(s): BADM-106 and either ACCTG-110 or ACCTG-111.

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 also are covered. Prerequisite(s): ACCTG-110 or ACCTG-111 and BADM-106 or ACCTG-122.

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. The emphasis is on human relations, management, marketing, 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-104.

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-180 **Credits: 1**
Business Communication With Technology 1
In Business Communication With Technology 1, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

BADM-181 **Credits: 1**
Business Communication With Technology 2
In Business Communication With Technology 2, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

BADM-182 **Credits: 1**
Business Communication With Technology 3
In Business Communication With Technology 3, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

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 the types of business loss exposures and their management, with a primary emphasis on insurance, are discussed in an applied approach.

BADM-198 **Credits: 1**

Business Internship

This cooperative training program involves actual work experience. Students obtain a position at an approved work station and work a minimum of 144 hours under the supervision of a teacher-coordinator. Prerequisite(s): INTRN-796, and completion of three semesters in the student's field of study and consent of advisor.

BAKING
(Department: 314)

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. Prerequisite(s): BAKING-120, BAKING-122, BAKING-123, BAKING-124, CULMGT-112.

BAKING-107 **Credits: 5**

Cafe Operations

The Cafe Operations course is designed for students to learn techniques for the operation of a modern cafe/bistro in a hands-on working environment. Training will include the areas of barista, preparation of breakfast pastries, preparation of soups and stocks, front-of-the-house, operation of point-of-sale software system, cashier, and customer service. Emphasis will be on the complete operation of a business.

BAKING-108 **Credits: 2**

Hotel and Restaurant Dessert Production

This course covers the preparation and service of hot and cold desserts with 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, glazes, 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. Prerequisite(s): BAKING-101, BAKING-120, BAKING-122, BAKING-123, BAKING-124, BAKING-125, BAKING-129, BAKING-130, CULMGT-105, CULMGT-112.

BAKING-113 **Credits: 3**

Cake Decorating, Icing and Fondant

This course is designed to give students 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. There is extensive work in the use of gum paste for a variety of floral arrangements that are used for wedding and all-occasion cakes. Prerequisite(s): BAKING-101, BAKING-125, BAKING-129, BAKING-130, CULMGT-105, CULMGT-112.

BAKING-120 **Credits: 3**

Basic Baking Techniques

This course introduces students to the fundamental concepts, skills and techniques of basic baking and yeast dough production. Study of ingredient functions, product identification and weights. Training also is given in a retail store setting. Prerequisite(s): Completion of or currently enrolled in BAKING-124.

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 buttercream 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-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 also will be covered. Prerequisite(s): BAKING-101, BAKING-108, CULART-125, CULMGT-112.

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. Prerequisite(s): BAKING-120, BAKING-122, BAKING-123, BAKING-124, CULMGT-112.

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. Prerequisite(s): INTRN-796 (minimum grade of C or P).

BAKING-131 **Credits: 2**

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, Dobosh torte, Linzer torte and Sacher torte); glazed, iced, molded and cream-filled cakes; tortes; and bombes. Prerequisite(s): BAKING-101, BAKING-125, BAKING-129, BAKING-130, CULMGT-105, CULMGT-112.

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. Prerequisite(s): CULMGT-112.

BARCOS – Barbering and Cosmetology
(Department: 502)

BARCOS-101 **Credits: 2**
Introduction to Guest Services Professional Practices
This course introduces students to working on clients in a spa setting. Students schedule appointments, consult with clients, analyze various skin types, perform facial treatments including hair removal. Students incorporate the use of facial machines during treatments. Students recommend products and perform makeup applications. Prerequisite(s): BARCOS-108, BARCOS-355, and completion of or currently enrolled in BARCOS-104.

BARCOS-102 **Credits: 3**
Guest Services 2
Students continue to build on skills obtained in Introduction to Guest Services Professional Practices, while increasing speed and accuracy. Students begin offering back facials, chemical peels and microdermabrasion treatments, and incorporating the use of various facial machines. Prerequisite(s): BARCOS-101, BARCOS-104, BARCOS-108, BARCOS-355, and completion of or currently enrolled in BARCOS-106, BARCOS-107, BARCOS-109 and BARCOS-110.

BARCOS-104 **Credits: 3**
Spa Treatments
Students build on previous skills. Students are introduced to advanced techniques: deep cleansing facials, extractions, high frequency, microdermabrasion, chemical exfoliation. Students perform treatments on each other while developing skills. Prerequisite(s): BARCOS-101, and completion of or currently enrolled in BARCOS-102, BARCOS-106.

BARCOS-106 **Credits: 1**
Advanced Makeup Techniques
Students build on basic makeup theory and color analysis while embracing new techniques such as airbrush and theatrical makeup. Students practice on peers as they develop these advanced skills. Prerequisite(s): BARCOS-101.

BARCOS-107 **Credits: 1**
Advanced Spa Treatments
Students develop advanced spa treatments including use of HydraFacial MD® machine for advanced exfoliation, microcurrent, stones facial massage, lymphatic drainage, body treatments, aromatherapy, and reflexology techniques to relieve tension. Prerequisite(s): BARCOS-102, BARCOS-104, and completion of or currently enrolled in BARCOS-105.

BARCOS-108 **Credits: 3**
Facial Treatments
This course introduces the theory and practical skills of facials. Students study the histology of skin, skin analysis, massage manipulations, various products and mask applications. Basic makeup application is applied to enhance the client's appearance. Introduction to the benefits and application of facial machines.

BARCOS-109 **Credits: 1**
Hair Removal Techniques
This course introduces the theory and practical skills of hair removal techniques. Students learn how to remove hair on all areas such as the face, underarms, legs, bikini and back. Students perform treatments on each other while developing skills. Prerequisite(s): BARCOS-108 or BARCOS-306 and BARCOS-307.

BARCOS-110 **Credits: 2**
Aesthetician Board Prep
This course will prepare students in the Aesthetician program for their State Board Licensing Exam. Students will sign up for their board exam, pack, review and practice all required assessment tasks. Students will complete a Mock State Board Exam. Prerequisite(s): BARCOS-101, BARCOS-102, BARCOS-104, BARCOS-106, BARCOS-107, BARCOS-108, BARCOS-109, BARCOS-317, BARCOS-330, BARCOS-355.

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 haircutting techniques including use of haircutting razor, shears and clippers. Students practice cutting combination haircuts using 0, 45- and 90-degree angles to include tapers, fades, natural afros, and other haircuts on mannequins and available models. Prerequisite(s): BARCOS-300, BARCOS-302, BARCOS-304, BARCOS-314.

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 haircutting and thinning techniques on mannequins, available models and hair goods. Prerequisite(s): Must be admitted to the Cosmetology (31-502-1) program.

BARCOS-303 **Credits: 2**
Men's Haircut 2
This course offers advanced men's haircutting techniques and methods using shear-over-comb and clipper techniques. Students practice haircutting 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. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-305.

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 haircutting techniques and methods to create haircuts with varying types of guidelines, weight lines, bangs and fringes. Speed and efficiency are encouraged. Students practice haircutting 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. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-314, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-306 **Credits: 2**
Esthetics 1
This course introduces the theory and practical skill of facials. Students study skin histology, disorders and diseases, skin analysis including the use of facial machine, facial massage manipulations, application of skincare products, removal of superfluous hair, and an introduction to makeup application. Students practice skills on classmates.

BARCOS-307 **Credits: 1**
Esthetics 2
Students continue to build upon skills taught in Esthetics 1. Students practice advanced skills in facial treatments including facials for specific conditions – oily, mature and dehydrated; techniques and benefits of high frequency and galvanic current;

corrective makeup; and facial hair removal. Prerequisite(s): BARCOS-306 and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-308 **Credits: 2**
Nail Services
The course introduces the theoretical and practical skills of manicuring and pedicuring, including nail art, and massage of the hand/arm, foot/leg in addition to preparation for the Wisconsin State Board manicuring board exam. Students practice giving and receiving manicures and pedicures on classmates while demonstrating safety and sanitation procedures. This course includes some online assignments and tests in preparation for the online state board exam. BARCOS-308 kit is to be purchased from bookstore at the start of the semester. Prerequisite(s): Must be admitted to the Cosmetology (31-502-1) program.

BARCOS-309 **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. Prerequisite(s): BARCOS-300, BARCOS-304, BARCOS-314, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-310 **Credits: 2**
Hair Tinting
Introduces the theory of and basic application procedures of adding artificial hair color to natural hair using temporary, semi-permanent, demi-permanent and permanent products. Students practice applying professional hair coloring products on mannequins, available models and hair goods. Prerequisite(s): BARCOS-300, BARCOS-314, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-312 **Credits: 1**
Advanced Color
This course presents the advanced practical skills for removing natural hair color using hair lightening services. Students practice lightening techniques with cap and weaving lightening 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-313 **Credits: 1**
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. Prerequisite(s): BARCOS-300, BARCOS-310, BARCOS-312, BARCOS-314, BARCOS-315.

BARCOS-314 **Credits: 2**
Hairstyle 1
Introduces the artistic foundations in theory and practical wet hairstyling in roller placement, hair wrapping, blow drying, thermal pressing and thermal iron curling. Students practice developing skills on mannequins, hair goods and classmates.

BARCOS-315 **Credits: 2**
Hairstyle 2
Presents wet hairstyling theory and practical skills for finger-waving, pin-curling and blow-dry styling. Students practice various pin-curling, finger-waving patterns and blow-drying techniques on mannequins and available models. Speed and accuracy are developed in thermal curling. Prerequisite(s): BARCOS-300, BARCOS-302, BARCOS-304, BARCOS-314.

BARCOS-316 **Credits: 1**
Advanced Style
Offers advanced techniques in long hair design, such as up-dos and braids, including French twist, Gibson, French braids and inverted French braids. Students practice on mannequins, available long hair models and hair goods. Prerequisite(s): BARCOS-300, BARCOS-314, BARCOS-315, BARCOS-319, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-317 **Credits: 1**
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. Prerequisite(s): Must be admitted to Aesthetician (31-502-2), Cosmetology (31-502-1) or Barber (31-502-5) program.

BARCOS-318 **Credits: 1**
Barber Theory 3
This course presents the theory related to practical subjects: men's hair replacement methods and hair goods, electricity and light therapy. Students participate in small and large group activities, in class and internet assignments. Prerequisite(s): Must be enrolled in the Barber (31-502-5) diploma program.

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, blow dry/iron curl, thermal press, permanent wave, and relax client's hair under the direction of the classroom instructor. Students gain receptionist skills. Sanitation and safety are stressed. Prerequisite(s): Must be admitted to Aesthetician (30-502-3), Barber (31-502-5) or Cosmetology (31-502-1) program.

BARCOS-321 **Credits: 1**
Hair Extensions
Students learn how to add hair extensions to hair and to braided styles, and apply skills learned on manikins and available models. Prerequisite(s): BARCOS-300, BARCOS-314, BARCOS-315, BARCOS-319, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-323 **Credits: 1**
Client Services 2
This course offers opportunities for the professional practice of developing skills in a salon-like environment. Students shampoo, cut, condition, color, highlight, roller set, blow dry/iron curl, thermal press, permanent wave, and relax client's hair under the direction of the classroom instructor. Students gain receptionist skills. Sanitation and safety are stressed. Prerequisite(s): Must be admitted to Aesthetician (30-502-3), Barber (31-502-5) or Cosmetology (31-502-1) program and take BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-304, BARCOS-306, BARCOS-307, BARCOS-309, BARCOS-310, BARCOS-312, BARCOS-314, BARCOS-315.

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 opportunities for the professional practice of developing skills in a salon-like environment. Students shampoo, cut, condition, color, highlight, roller set, blow dry/iron curl, thermal press, permanent wave, and relax client's hair under the direction of the classroom instructor. Students gain receptionist skills. Sanitation and safety are stressed. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-304, BARCOS-306, BARCOS-307, BARCOS-309, BARCOS-310, BARCOS-312, BARCOS-314, BARCOS-315, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-327 **Credits: 1**
Client Services 4
This course offers opportunities for the professional practice of developing skills in a salon-like environment. Students shampoo, cut, condition, color, highlight, roller set, blow dry/iron curl, thermal press, permanent wave, and relax client's hair under the direction of the classroom instructor. Students gain receptionist skills. Sanitation and safety are stressed. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-304, BARCOS-306, BARCOSS-307, BARCOS-309, BARCOS-310, BARCOS-312, BARCOS-314, BARCOS-315, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-328 **Credits: 1**
Client Services 5
This course offers opportunities for the professional practice of developing skills in a salon-like environment. Students shampoo, cut, condition, color, highlight, roller set, blow dry/iron curl, thermal press, permanent wave, and relax client's hair under the direction of the classroom instructor or salon manager. Students gain receptionist skills. Sanitation and safety are stressed. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-304, BARCOS-306, BARCOS-307, BARCOS-309, BARCOS-310, BARCOS-312, BARCOS-314, BARCOS-315, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-329 **Credits: 1**
Basic Artificial Nail Concepts
This course provides the theoretical component of nail enhancements and practical skill development of artificial nail applications. Students observe and practice artificial nail applications including nail tips, nail wraps, acrylics, UV gel and UV gel polish on artificial nails. This course includes some online assignments and tests in preparation for the online state board exam. Prerequisite(s): BARCOS-308 and must be admitted to the Cosmetology (31-502-1) program.

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. Prerequisite(s): Must be admitted to Aesthetician (30-502-3), Barber (31-502-5) or Cosmetology (31-502-1) program.

BARCOS-331 **Credits: 3**
Business Management – Barber/Cosmetology Manager
This course offers Wisconsin-licensed practitioners, nail technicians and aestheticians basic human resource management and business economic concepts. 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. Prerequisite(s): BARCOS-331.

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.

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. Prerequisite(s): BARCOS-300, BARCOS-301, BARCOS-302, BARCOS-303, BARCOS-304, BARCOS-305, BARCOS-306, BARCOS-307, BARCOS-309, BARCOS-310, BARCOS-312, BARCOS-313, BARCOS-314, BARCOS-315, BARCOS-319, BARCOS-320, and must be admitted to the Cosmetology (31-502-1) program.

BARCOS-336 **Credits: 1**
Barber Theory 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): Must be admitted to the Barber (31-502-5) program.

BARCOS-337 **Credits: 2**
Barber Haircut 1
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 (31-502-5) program.

BARCOS-338 **Credits: 1**
Barber Chemical Services 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 (31-502-5) program.

BARCOS-340 **Credits: 4**
Manicuring Theory
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, pedicuring, nail enhancements, e-file, safety, sanitation, anatomy, physiology and business management. This course includes some online assignments and tests in preparation for the online state board exam.

BARCOS-341 **Credits: 2**
Shaving/Facials
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 (31-502-5) program.

BARCOS-342 **Credits: 4**
Manicuring Practicum 1
This course provides the theoretical and practical components related to manicuring, pedicuring, tip application, fabric wrap application, acrylic application, consultation, UV gel applications, nail art and electric filing. Students observe and practice the practical applications on artificial nails, classmates and models. Students must complete BARCOS-340 prior to taking BARCOS-342 or students can take BARCOS-340, BARCOS-342 and BARCOS-343 in conjunction or have equivalent coursework. This course includes some online assignments and tests in preparation for the online state board exam. BARCOS-342 kit is to be purchased from bookstore at the start of the semester. Prerequisite(s): Completion of or currently enrolled in BARCOS-340.

BARCOS-343 **Credits: 4**
Manicuring Practicum 2
This course offers professional skill development in basic and artificial nail application in a salon-like setting. Students practice manicuring, pedicuring, tip, fabric, acrylic, UV gel applications, nail art and

electric filing techniques on classmates and clients under the direct supervision of the classroom instructor. Students must complete BARCOS-340 prior to taking BARCOS-343 or students can take BARCOS-340, BARCOS-342 and BARCOS-343 in conjunction or have equivalent coursework. Prerequisite(s): Completion of or currently enrolled in BARCOS-340.

BARCOS-344 **Credits: 1**
Barber Theory 2
Presents theory related to wet and thermal styling, permanent waving, relaxing and tinting. Client consultation also is covered. Students participate in individual, group and online activities. Prerequisite(s): Must be admitted to the Barber (31-502-5) program.

BARCOS-345 **Credits: 2**
Barber Haircut 2
Students enhance skills learned in Barber Haircut 1. Beard trimming and razor haircutting are introduced, and speed and efficiency are encouraged. Students practice on mannequins and available models. Prerequisite(s): BARCOS-300, BARCOS-336, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-346 **Credits: 1**
Barber Chemical Services 2
Introduces wrapping and application procedures for the permanent wave service. Students practice sectioning and winding permanent rods on mannequins. Prerequisite(s): BARCOS-300, BARCOS-336, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-347 **Credits: 1**
Barber Hairstyling 1
Presents various techniques for basic thermal styling using the blow dryer, curling iron and flat iron. Proper parting and sectioning are stressed. Students practice on mannequins and available models. Prerequisite(s): Must be admitted to the Barber (31-502-5) diploma program.

BARCOS-348 **Credits: 2**
Introduction to Client Services
Introduces students to the barbering/stylist environment. Students practice barbering skills under the guidance of a licensed instructor. Receptionist duties, people skills and professionalism also are studied. Prerequisite(s): BARCOS-300, BARCOS-336, BARCOS-337, BARCOS-341, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-349 **Credits: 1**
Barber Haircut 3
Students hone skills previously learned in Barber Haircut courses. Clipper designs, afros, fauxhawks and current trends also are covered. Students practice on mannequins, classmates and available models. Prerequisite(s): BARCOS-300, BARCOS-336, BARCOS-345, BARCOS-347, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-350 **Credits: 2**
Barber Chemical Services 3
Introduces various application procedures for oxidative and non-oxidative tints. Highlighting and bleaching techniques also are covered. Students practice on mannequins and available models. Prerequisite(s): BARCOS-300, BARCOS-336, BARCOS-338, BARCOS-346, and must be admitted to the Barber (31-502-5) program.

BARCOS-351 **Credits: 1**
Barber Hairstyling 2
Students enhance skills learned in Barber Hairstyling 1. Wet styling techniques also are introduced. Students practice roller sets, pin curls and finger waves on mannequins. Prerequisite(s): BARCOS-336, BARCOS-347, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-352 **Credits: 2**
Barber State Board Review
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. Prerequisite(s): BARCOS-319, BARCOS-320, BARCOS-349, BARCOS-350, BARCOS-351, and must be admitted to the Barber (31-502-5) program.

BARCOS-353 **Credits: 2**
Barber Haircut 4
This course reviews haircutting techniques learned in previous Barber haircutting courses. Students prepare mannequins for the State Board Exam. Students practice skills on available models and manikins. Speed and efficiency are stressed. Prerequisite(s): BARCOS-300, BARCOS-336, BARCOS-345, BARCOS-347, BARCOS-349, and must be admitted to the Barber (31-502-5) diploma program.

BARCOS-355 **Credits: 3**
Spa Sciences
This course includes a full Aesthetician Program Orientation and introduces the science of aesthetic services including cosmetic chemistry, diseases and disorders, and electricity. Students identify the effects of product ingredients on the skin. Prerequisite(s): Completion of or currently enrolled in BARCOS-101, BARCOS-104, BARCOS-108, BARCOS-317, and instructor consent also is required.

BNLST – Business Analyst
(Department: 102)

BNLST-121 **Credits: 3**
Business Analyst Planning and Monitoring
Instruction in the multiple approaches used for performing business analysis, planning activities and ongoing communication, defining scopes, process improvements, assumptions, constraints and dependencies, and the management process.

BNLST-122 **Credits: 3**
Business Analyst Essentials
Provides insight into the business analyst role and profession. Examines career pathways, key concepts, and the underlying competencies describing the behaviors, characteristics, knowledge and personal qualities that support the practice of business analysis. Students also will be introduced to the Business Analysis Body of Knowledge (BABOK) Guide.

BNLST-123 **Credits: 3**
Requirements Life Cycle Management
Prioritize and trace requirements, organize large amounts of data, understand and model requirements using various analysis techniques; verify, validate and communicate the requirements.

BNLST-124 **Credits: 3**
Elicitation Techniques
Examines one of the five Business Analysis Perspectives (business intelligence) and the tasks associated with obtaining information from stakeholders (elicitation), confirming the results, and communicating business analysis information with stakeholders. Introduces the business analysis elicitation techniques of surveys, interviews, observation, workshops, benchmarking and market analysis.

BNLST-127 **Credits: 3**
Requirements Analysis and Design
Explores the key tasks of Requirements Analysis and Design that business analysts perform to structure and organize requirements discovered during the elicitation activity. Tasks include specifying and modeling requirements/designs, verifying and validating information, defining requirements architecture, defining solution options that meet business needs and estimating potential value for those solution options. Introduces techniques of use-cases, prototyping, nonfunctional requirements analysis and acceptance and evaluation criteria. Students also will explore the final perspective of Business Architecture.

BNLST-135 **Credits: 3**
Business Analyst Strategy Analysis
Identify and define business needs; understand business structure, strategy and impact of work efforts; define the importance of vision, strategy, goals and objectives; and define solution scope. Effectively facilitate change management.

BNLST-136 **Credits: 3**
Business Analyst Solution Evaluation
Students assess organizational readiness by facilitating testing and training of the solution. Emphasizes test plan creation, execution and facilitation, as well as the development of training plans. Prerequisite(s): BNLST-127.

BNLST-137 **Credits: 1**
Business Analyst Internship
A cooperative training program involving actual work experience. Students obtain a position at an approved work station and work under the supervision of a teacher/coordinator. Prerequisite(s): INTRN-796.

BNLST-138 **Credits: 3**
Business Analyst Capstone
This course provides business analyst students the opportunity to integrate the knowledge they have obtained throughout their curriculum by demonstrating their proficiency during the entire life cycle of a project.

BRHLTH – Business-Related Health (Department: 160)

BRHLTH-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, and completion of or currently enrolled in BRHLTH-125 and BRHLTH-170.

BRHLTH-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.

BRHLTH-125 **Credits: 3**
Medical Office Terminology 2
This course reinforces correct medical word spelling, pronunciation and definition as studied in BRHLTH-124. Additional terminology specific to various body systems is introduced. Prerequisite(s): BRHLTH-124 (minimum grade of C).

BRHLTH-135 **Credits: 3**
Medical Document Production
This course is designed to expand the student's medical vocabulary and develop skill in keyboarding, editing, storing and printing of medical documents on microcomputers. Emphasis is placed on speed building and accuracy improvement. Prerequisite(s): BRHLTH-125, OFTECH-122, OFTECH-133.

BRHLTH-140 **Credits: 3**
Electronic Health Records: Administrative Application
Students explore the content of the electronic health record through a variety of administrative applications including those related to collection of patient data, documentation, scheduling, coding, insurance claim creation, and billing. Medicolegal, ethical and professional use of the protected health information in the electronic health record is addressed. Prerequisite(s): BRHLTH-135, and completion of or currently enrolled in BRHLTH-170.

BRHLTH-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): BRHLTH-125, and completion of or currently enrolled in BRHLTH-135 and BRHLTH-170.

BRHLTH-170 **Credits: 3**
Medical Insurance Principles and Coding
This course presents common health insurance terminology and familiarizes students with basic principles of disease coding and procedural coding from the physician/provider perspective. This is not for experienced coders. Prerequisite(s): BRHLTH-125.

BRHLTH-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 BRHLTH-170.

BRHLTH-197 **Credits: 3**
Medical Office Career Investigation
This course provides students with in-depth exposure to employment in the healthcare office setting. Student will conduct interviews, research specific medical office careers, prepare a PowerPoint presentation, participate in group and individual work scenario case problems, and prepare an extensive portfolio. Prerequisite(s): ACCTG-102, BRHLTH-112, BRHLTH-125, BRHLTH-174, COMPSW-106, NATSCI-189, OFTECH-136, and completion of or currently enrolled in ENG-151.

CABMIL – Cabinetmaking and Millwork (Department: 409)

CABMIL-300 **Credits: 2**
Machine Maintenance/Jigs and Fixtures
This Machine Maintenance course consists of adjusting and maintaining woodworking machinery such as wide-belt sanders, planers, shapers, and band and circular saws.

CABMIL-303 **Credits: 5**
Woodworking 1
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 **Credits: 3**
Woodworking Fundamentals
This course is designed to provide students with woodworking fundamentals including safe operating procedures of woodworking machines, types of wood, adhesives, gluing techniques, and preparing wood for construction.

CABMIL-305 **Credits: 5**
Woodworking 2
Students are involved in advanced cabinetmaking and millwork techniques used to produce architectural millwork and cabinets. Metric units of measurement are used to fabricate 32mm system casework. Students learn to set up, run and troubleshoot equipment necessary to produce exacting work. This course prepares the student for an entry-level position in a modern architectural millwork or cabinet shop.

CABMIL-306 **Credits: 3**
Advanced Woodworking
This course is designed to provide students with the skills associated with advanced cabinetmaking techniques. Subjects covered include cabinet construction, case construction and 32mm construction. Setup and safe operation of woodworking equipment are emphasized.

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 (31-410-1) program.

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 cabinetmaking. 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. Planning, routing and cost estimate procedures are discussed.

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.

CARP – Carpentry (Department: 410)

CARP-301 **Credits: 5**
House Framing
House Framing 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 the Carpentry (31-410-1) program.

CARP-303 **Credits: 5**
Roof Framing
Roof Framing is designed to give 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 the Carpentry (31-410-1) program.

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 is practiced, along with the layout, fitting and assembly of various wood projects. Prerequisite(s): CARP-301.

CARP-315 **Credits: 1**
Energy Efficiency in Residential Construction
The course provides an overview of key areas that are important to energy efficiency in the construction trades. Topics include energy usage and efficiencies, testing protocols and diagnostic equipment, combustion air exchange, and roles of energy professionals.

CARP-351 **Credits: 1**
Building Materials
The characteristics, manufacture and uses of the essential materials and supplies employed in the 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 (31-410-1) program.

CARP-383 **Credits: 2**
Quantity Survey
An estimating course for students in the building trades. It deals with the "taking off" of such carpentry materials as 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 (31-410-1) program.

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.

CAS – Creative Advertising Strategist (Department: 201)

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). Additionally, students will experience the dynamic of the collaborative process through creative teams, and the creative studio environment.

CAS-126 **Credits: 3**
History of Advertising Media/Design
This course surveys the history of media forms and communication technologies, charting the historical trajectory from the alphabet to the internet. It explores media 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-127 **Credits: 3**
Creative Industry Business Practice
This course will examine the ever-shifting guidelines of copyright and ethics in the creative industry. Case studies and vibrant discussion exploring licensing and ownership of original composition and image content will be thoroughly covered.

CAS-137 **Credits: 3**
Concept Development 2: Advanced Concepts
Advanced project-based assignments. As continuance of Concept Development 1, Concept Development 2 is an advanced concept building environment, where the strategist further considers the various methods and media choices to communicate original concepts.

CAS-141 **Credits: 3**
New Media Strategies
This course will discuss new media concepts, including social media, seed marketing, email marketing, and search marketing.

CAS-142 **Credits: 3**
Brand and Media Strategies
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 will focus 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-146 **Credits: 3**
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 by students 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 also is required.

CAS-149 **Credits: 3**
Practical Application Workshop
Workshop working directly with real, live clients and deadlines, this course functions as a service learning experience for the student. Measured jointly by faculty and clients, all projects' outcomes are assessed on par with industry expectations.

CHEMT – Chemical Technology (Department: 603)

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): NATSCI-110, NATSCI-211, or both SCIHS-705 and SCIHS-706, or both SCIPH-705 and SCIPH-706 (minimum grade of C).

CHEMT-103 **Credits: 2**
Introduction to Chemical Technology
This course introduces students to chemical technology. Students learn to use the fundamental skills needed to work 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
Introduction to Instrumental Methods 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-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 (minimum grade of C).

CHEMT-109 **Credits: 3**
Chemical Processes
Chemical Processes focuses on the role, structure and operations of industrial chemical laboratories. The activities, responsibilities and functions of the various business activities are examined from the perspective of a technician working in research and development or technical service laboratory. Prerequisite(s): NATSCI-211.

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 (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 electrometric methods. The evaluation of analytical data is stressed. Laboratory work is included. Prerequisite(s): CHEMT-112 or NATSCI-212 (minimum grade of C).

CHEMT-116 **Credits: 5**
Instrumental Analysis
Instrumental Analysis examines the design, construction and use of modern chemical analytical instruments. Topics included are absorption and emission spectroscopy, gas and liquid chromatography, and electrochemical methods. Prerequisite(s): CHEMT-112 or NATSCI-212 (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 (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 (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-212 or CHEMT-112 (minimum grade of C).

CHILDD – Child Development (Department: 307)

CHILDD-108 **Credits: 3**
ECE: Early Language and Literacy
This course explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age. Learners will investigate the components of literacy including: literacy as a source of enjoyment, vocabulary and oral language, phonological awareness, knowledge of print, letters and words, comprehension and an understanding of books and other texts. Theories and philosophies regarding children's language and literacy development will be addressed. Dual language learning will be examined within the context of developmentally appropriate practices. Assessment tools for early language and literacy acquisition will be reviewed.

CHILDD-110 **Credits: 3**
ECE: Social Studies, Art and Music
This three-credit course will focus on beginning-level curriculum development in the specific integrated content areas of social studies, art, music and movement (SSAMM).

CHILDD-112 **Credits: 3**
ECE: STEM
This three-credit course will focus on beginning-level curriculum development in the specific integrated content areas of science, technology, engineering and mathematics.

CHILDD-115 **Credits: 3**
Infant Toddler Capstone
This course will culminate the first three courses of the Infant Toddler State Registry Credential. The course will examine the appropriateness of early childhood environments along with the developmental stages of children birth to 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-117 **Credits: 3**
ECE: Credit for Prior Learning
This three-credit course examines early childhood professional experience for the purpose of receiving credit for prior learning. 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 outcomes of the WTCS Early Childhood Education program, analyze performance assessment, compare professional experience with early childhood competencies, compile materials for performance assessment of course(s), determine plan of action for program completion. Two years in ECE field required. Prerequisite(s): Must be admitted to Early Childhood Education (10-307-1) or Child Care Services (31-307-1) program, and two years in ECE field and registry recipient.

CHILDD-135 **Credits: 3**
Family Child Care Capstone
Includes a review of principles and practices of budget planning, budget preparation and fiscal management. Must be a family child care provider, lead teacher or program director.

CHILDD-140 **Credits: 3**
Behavior and Emotional Challenges
This three-credit course prepares the student to: build rapport with children and their families; create supportive learning environments; demonstrate positive social-emotional teaching strategies; define specific discipline and guidance strategies; assess challenging behaviors; describe specific diagnoses typically related to challenging behaviors; develop individualized, positive guidance plans; and communicate the need for positive, consistent, team approaches to including children with challenging behaviors in typical community settings.

CHILDD-141 **Credits: 3**
Special Healthcare Needs
This course will have a medical focus and covers frequently encountered specialized healthcare needs of individuals with disabilities, preparing the student to examine altered body systems function, including sensory, gastrointestinal (tube feedings), bowel and bladder elimination, respiratory (allergies and asthma), cardiovascular/blood, musculoskeletal, neurological, skin/immune, and endocrine (diabetes) related issues. You will not be practicing medicine, but you will gain a better understanding of medical issues and professionals who can support you in establishing policies and procedures that assure safe, quality care for all.

CHILDD-142 **Credits: 3**
Inclusion Capstone Family and Team
During this course, you will be spending time with a child in the community settings that child experiences, such as their home, school, child care, grocery store, medical settings, parks, libraries and more! As you do so, you are offered the opportunity to deeply explore the perspectives of the various people involved in this child's life, as well as the service delivery systems available to the child and family. Prerequisite(s): CHILDD-140, CHILDD-141, CHILDD-187.

CHILDD-148 **Credits: 3**
ECE: Foundations of ECE
This three-credit course introduces you to the early childhood education profession. Course competencies include: integrate 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
In this three-credit course, you will study 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 and postnatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine culturally and developmentally appropriate environments for infants and toddlers, examine the role of brain development in early learning (conception through age 3), examine care giving routines as curriculum.

CHILDD-153 **Credits: 3**
Foundations of Afterschool and Youth Care
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-154 **Credits: 3**
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-155 **Credits: 3**
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-156 **Credits: 3**
Youth Site Program 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-167 **Credits: 3**
ECE: Health, Safety and Nutrition
This three-credit course 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; plan a safe, early childhood environment; plan a healthy, early childhood environment; plan nutritionally sound menus; examine Child Abuse and Neglect (CAN) issues and mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies, apply strategies to prevent the occurrence of Shaken Baby Syndrome (SBS); incorporate health, safety, and nutrition concepts into the children's curriculum.

CHILDD-169 **Credits: 3**
ECE: Infant Toddler Group Care
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: Introductory Practicum
In this three-credit practicum course, you will learn about and apply the course competencies in an actual early childhood setting. You will explore the standards for quality, early childhood education; demonstrate professional behaviors; and meet the requirements for training in the Wisconsin Model Early Learning Standards.

CHILDD-175 **Credits: 3**
ECE: Preschool Practicum
This course will apply as the capstone course in The Registry Preschool Credential. You will be placed or working in an early childhood setting with 3- to 5-year-old children and create a portfolio that prepares you for The Registry commission. In this course you will be implementing regulations and standards for quality, early childhood education; applying knowledge of child development and positive guidance; utilizing observation and assessment techniques; and assessing developmentally appropriate environments for preschoolers. Prerequisite(s): CHILDD-174 and must be admitted to Early Childhood Education (10-307-1) or Child Care Services diploma (31-307-1) program.

CHILDD-177 **Credits: 3**
ECE: Intermediate Practicum
In this three-credit course, you will be implementing regulations and standards for quality, early childhood education; applying knowledge of child development and positive guidance; utilizing observation and assessment techniques; and assessing developmentally appropriate environments for children. Prerequisite(s): CHILDD-174 and admission to the Early Childhood Education (10-307-1) program.

CHILDD-179 **Credits: 3**
ECE: Child Development
This course 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-181 **Credits: 3**
Child Care Operations Management
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-182 **Credits: 3**
Child Care Financial Management
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-184 **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, external evaluation, collaboration with community organizations and agencies, public policy issues in early care and education, advocacy and working for public policy changes.

CHILDD-185 **Credits: 3**
Child Care 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, multicultural and anti-bias approaches in curriculum, materials, activities, relationships, and space design and equipment.

CHILDD-186 **Credits: 3**
Child Care Administrative Capstone
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. The first five courses are primarily about mastering the necessary skills to be successful at managing quality, early childhood education programs. The strategies learned in this course build upon management skills and take students beyond management to incorporate leadership in their programs, communities, and profession. Through the development of a major project, students synthesize, integrate, and apply the concepts and skills acquired in the full series of courses. Prerequisite(s): CHILDD-181, CHILDD-182, CHILDD-184, CHILDD-185, CHILDD-204.

CHILDD-187 **Credits: 3**
ECE: Children With Differing Abilities
This three-credit course 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 not limited to, ADA and IDEA; work collaboratively through the consultation process to embed intervention in natural-based settings; 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 resources; utilize an individual educational plan (IEP/IFSP) for children with developmental 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
The course 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-195 **Credits: 3**

ECE: Family and Community Relationships

In this three-credit course, 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-199 **Credits: 3**

ECE: Advanced Practicum

In this final three-credit practicum course, you will demonstrate competence in supporting child development through observation, assessment and implementation of teaching strategies as you work in, learn about and apply the course competencies in an actual, early childhood setting. You will demonstrate a high level of skill in fostering relationships with children, families and early childhood professionals, and use skills learned in a lead teacher role to develop a career plan to transition from student to early childhood education professional. Prerequisite(s): CHILDD-175, CHILDD-177, and admission to the Early Childhood Education (10-307-1) program.

CHILDD-204 **Credits: 3**

Supervise/Administrate ECE Programs

This is the first of six courses designed to prepare participants as child care administrators. 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-301 **Credits: 3**

Introduction to Family Child Care

This introductory course is designed for family child care providers, or individuals seeking to become family child care providers. In this course, providers will fulfill the requirements for both Department of Children and Families entry-level courses, Fundamentals of Family Child Care and Introduction to the Child Care Profession. Through this course, providers will be introduced to important topics such as quality standards in family child care, health and wellness, child development, curriculum planning, guiding children's behavior, program wellness, and provider health and wellness. This course must be taken first in the Family Child Care Credential series and is aligned with the Wisconsin Model Early Learning Standards and the National Association for Family Child Care Quality Standards.

CHILDD-302 **Credits: 3**

Family Child Care: Responsive Programming

This second course of the Family Child Care Credential series focuses on creating responsive, family child care programming with an emphasis on building relationships and curriculum. Through this course, providers will be introduced to important topics such as quality standards for relationships, intentional relationships, diversity and anti-bias perspectives, family partnerships, mixed age curriculum, indoor learning environment, and outdoor learning environment. This course is aligned with the Wisconsin Model Early Learning Standards and the National Association for Family Child Care Quality Standards.

CHILDD-303 **Credits: 3**

FCC: Financial Management and Planning

This third course of the Family Child Care Credential series focuses on managing the finances of a family child care with an emphasis on principles and practices for budget planning, budget preparation and fiscal management. Through this course, providers will be introduced to important topics such as quality standards for financial management and planning, business management, financial planning, record keeping, business budgets, marketing and financial management tools and systems. This course is aligned with the National Association for Family Child Care Quality Standards. Prerequisite(s): CHILDD-133, CHILDD-134, CHILDD-135.

CIVIL – Civil Engineering Technology (Department: 607)

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 xrefs and advanced dimensioning. System variables and basic script files also are studied. Prerequisite(s): CIVIL-102.

CIVIL-107 **Credits: 2**

Introduction to MicroStation

The 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. Prerequisite(s): Completion of or currently enrolled in CABMIL-303.

CIVIL-110 **Credits: 2**

Introduction to Civil 3D

Civil 3D is an engineering software application used by civil engineers and other professionals to plan, design and manage civil engineering projects. Students will become familiar with the Civil 3D user interface and enhanced capabilities with respect to AutoCAD. Field collected survey points, Point file formats and Point Groups are discussed and used; Surfaces are created utilizing break lines, feature lines and Point Groups; alignments, annotation methods and geo-referenced digital orthophotography also are covered. Prerequisite(s): CIVIL-102.

CIVIL-111 **Credits: 2**

Advanced Civil 3D

Autodesk Civil 3D is a civil engineering design software used for civil design, drafting and documentation, collaboration, and Building Information Modeling (BIM) workflows. This course covers the advanced design functions and techniques of Civil 3D including alignments, surface grading and analysis, pipe networks and survey databases. Prerequisite(s): CIVIL-110.

CIVIL-135 **Credits: 3**
Public Works Engineering and Estimating
The 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
The 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 and MATH-115 or MATH-202.

CIVIL-147 **Credits: 3**
Soils and Materials Testing
The purpose of this course is to help 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. WisDOT Certification for PCCTec I/IA (Portland Cement Concrete Technician) also is available as part of this course. Prerequisite(s): Completion of or currently enrolled in MATH-115.

CIVIL-148 **Credits: 3**
Structural Detailing
The students will learn how to draw detailing drawings using AutoCAD and Autodesk Revit Structure. Autodesk Revit Structure is a 3D civil engineering design software used for civil design, drafting and documentation, collaboration, and Building Information Modeling (BIM) workflows. The students will learn how to draw a structural project and framing system and add structural elements such as concrete foundation, walls, beams in addition to steel beams, columns and connections. Prerequisite(s): CIVIL-106, CIVIL-141.

CIVIL-155 **Credits: 2**
Surveying 1
The 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 2
The 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 also are 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, super elevation, cross sections and earthwork, is studied. Also, a roadway plan and profile are prepared. Prerequisite(s): CIVIL-102, CIVIL-156.

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 also are 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
The principles and practice of boundary locations are presented. The public land system is covered in detail. Principles for performing surveys will be discussed. Prerequisite(s): CIVIL-156.

CIVIL-170 **Credits: 3**
Sewer and Water Systems
The 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 also are prepared. Prerequisite(s): CIVIL-102, CIVIL-135.

CIVIL-190 **Credits: 1**
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.

CIVIL-308 **Credits: 1**
Computer Applications for the Trades
This computer applications course is designed to provide students with word processing, spreadsheet, PowerPoint, email and internet skills. Additionally, the course gives students an opportunity to utilize these skills in a project and presentation.

CLABT – Clinical Laboratory Technology (Department: 513)

CLABT-109 **Credits: 4**
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 **Credits: 1**
Basic Lab Skills
This course 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 **Credits: 2**
Phlebotomy
This course provides opportunities for students to perform routine venipuncture, routine capillary puncture and special collection procedures. Prerequisite(s): Completion of or currently enrolled in CLABT-110.

CLABT-113 **Credits: 1**
QA Lab Math
Focuses on performing the mathematical calculations routinely used in laboratory settings. You will explore the concepts of quality control and quality assurance in the laboratory. You will review regulatory compliance requirements and certification and continuing education programs. Prerequisite(s): Admission to the Clinical Laboratory Technician (10-513-1) program.

CLABT-114 **Credits: 2**
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): Completion of or currently enrolled in CLABT-110 and CLABT-113.

CLABT-115 **Credits: 2**
Basic Immunology Concepts
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 (10-513-1) program.

CLABT-116 **Credits: 4**
Clinical Chemistry
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, lipids, proteins, renal function and blood gas analysis. Prerequisite(s): CLABT-113.

CLABT-120 **Credits: 3**
Basic Hematology
Covers the theory and principles of blood cell production and function, and introduces you to basic practices and procedures in the hematology laboratory. Prerequisite(s): Completion of or currently enrolled in CLABT-110, CLABT-111, CLABT-113, CLABT-115.

CLABT-121 **Credits: 1**
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): Completion of or currently enrolled in CLABT-113.

CLABT-130 **Credits: 2**
Advanced Hematology
Explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques used to diagnose disorders and monitor treatment. Prerequisite(s): CLABT-120.

CLABT-133 **Credits: 4**
Clinical Microbiology
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, also will be discussed. Prerequisite(s): CLABT-170.

CLABT-140 **Credits: 2**
Advanced Microbiology
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): Completion of or currently enrolled in CLABT-133.

CLABT-143 **Credits: 1**
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-170.

CLABT-151 **Credits: 3**
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): Completion of or currently enrolled in CLABT-130, CLABT-133, CLABT-140.

CLABT-152 **Credits: 4**
Clinical Experience 2
Provides continuing practice for the principles and procedures of laboratory medicine as an entry-level 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-151.

CLABT-170 **Credits: 2**
Introduction to Molecular Diagnostics
Introduces the principles and application of molecular diagnostics in the clinical laboratory. Prerequisite(s): CLABT-113.

CNC – Computer Numeric Control (Department: 444)

CNC-122 **Credits: 1**
Introduction to CNC Setup and Operation
Introduction to CNC Setup and Operation prepares the student to write basic programs for CNC turning and CNC vertical milling machines. Application of the Cartesian coordinate system is taught along with programming format. The CNC vertical milling center students will write basic programs using linear and rapid moves, circular interpolation, geometry offsets and a variety of canned cycles. The CNC turning portion of the course will require the student to write programs that include linear and rapid moves, circular interpolation with tool nose radius compensation. Student will learn tooling maintenance and machine maintenance, how to set up a loader program specific to a company's lathes, how to call up programs, complete prove out and run parts. Students will learn how to identify worn out inserts and install new ones.

CNC-302 **Credits: 1**
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.

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 parts 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/Prove Out 1
This course is for those who already understand the basic concept of CNC machining center operations. Students will be taught to operate tech-specific CNC machines. Basic concepts of manual CNC programming including linear and circular interpolation, Z axis canned cycles, and cutter diameter compensation are covered. All CNC programs that the student writes will then be proved out on a full-sized industrial CNC machine center. Prerequisite(s): Take either MACHTL-320 and MACHTL-322 or MACHTL-373.

CNC-325 **Credits: 3**
CNC Machine Programming/Prove Out 2
This course is for those who already understand the basic concepts of CNC machining center operations and CNC programming. The course will cover additional CNC programming techniques such as polar coordinates, metric programming, subroutine programming, zero shift, and multiple work zero programs. Also covered are advanced CNC machining center operational procedures. Prerequisite(s): CNC-324.

CNC-326 **Credits: 3**
Machining Center CAD/CAM Programming 1
This course is for those who already understand the basic concepts of CNC machining center operations and CNC programming. The course will cover additional CNC programming techniques including an introduction to CAD/CAM. Also covered are advanced CNC machine center operational procedures. All of the jobs that the student programs will be run on a CNC machining center. Prerequisite(s): CNC-325.

CNC-327 **Credits: 3**
Machining Center CAD/CAM Programming 2
This course is for those who already understand the basic concepts of CNC machining center operations and CNC programming. The course will cover additional CNC programming techniques including CAD/CAM, which was introduced in the previous course. This course will start with a review of the basic process of creating a CNC program using a CAD/CAM system. Students will then advance through all of the different features of today's CAD/CAM systems as they relate to CNC programming for machining centers. Prerequisite(s): CNC-326.

CNC-332 **Credits: 3**
CNC Turning Programming/Prove Out 1
This course is for those who already understand the basic operations of a CNC turning center. Students will be taught how to safely prove out a CNC program on the machines in the lab. Then students will be taught the basics of manual CNC programming for a turning center. All programs the student writes will be proved out on the machine with emphasis on tooling, speeds and feeds for metal cutting. Prerequisite(s): Take either MACHTL-320 and MACHTL-322 or MACHTL-373.

CNC-333 **Credits: 3**
CNC Turning Programming/Prove Out 2
This course will build on the concepts learned in Programming/Prove Out 1. Additional operational procedures for CNC turning centers will be covered. Also, additional programming techniques such as threading, TNR compensation, and metric programming will be covered. All programs the student writes will be proved out on the machine with emphasis on tooling, speeds and feeds for metal cutting. Prerequisite(s): CNC-332.

CNC-334 **Credits: 3**
Turning Center CAD/CAM Programming 1
This course will build on the concepts learned in Programming/Prove Out 2. Additional procedures for CNC turning centers will be covered. Also, additional programming techniques such as internal boring, internal threading and canned cycles will be covered. All programs the student writes will be proved out on the machines with emphasis on tooling, speeds and feeds for metal cutting. Also, an introduction to CAD/CAM programming will be covered. Prerequisite(s): CNC-333.

CNC-335 **Credits: 3**
Turning Center CAD/CAM Programming 2
This course covers CAD/CAM programming for CNC turning centers using PC-based master CAM software. All programs the student writes will be proved out on the machine with emphasis on tooling speeds and feeds for metal cutting. Prerequisite(s): CNC-334.

CNC-340 **Credits: 3**
Introduction to 5-Axis Programming/Operation
This course is for those who already understand the concepts of CNC machining center operations and CNC programming. First the student will be introduced to basic concepts of 5-axis machining, then the student will be taught programming procedures of a 5-axis machining center, including process planning, tool selection, speed/feed calculations, and setup planning. The student will be taught 3D drawing techniques and how to generate tool paths using Mastercam software. Then the student also will be taught programming/operation for the CNC 5-axis machining center at MATC including start up, workholding, tool mounting, offset setting and program management. Then a specific prove out procedure is covered. All of the programs that the students create are proved out on full-size machines like the ones used in industry today.

COMPSW – Computer Software (Department: 103)

COMPSW-106 **Credits: 3**
Introduction to MS Office
This introductory course provides a hands-on overview of Microsoft software applications including units of instruction in MS Word, Excel, PowerPoint and Access. Combined with COMPSW-107, this course can help the student prepare for various MS Office Specialist (MOS) exams.

COMPSW-137 **Credits: 1**
MS Excel – Part 1
Students will cover the basics in creating and managing Excel worksheets and workbooks. This course includes creating cells, ranges, tables, charts and objects; formatting and printing reports; and applying formulas and functions. Excel Part 1 is designed for students at a beginner level in spreadsheet applications and provides good background material to help the student prepare for the beginning Microsoft Office Specialist (MOS) certification in Excel.

COMPSW-138 **Credits: 1**
MS Excel – Part 2
Excel Part 2 helps students develop skills in managing multiple worksheets and workbooks. This includes using advanced table features, creating Pivot Tables and Pivot Charts, developing Excel applications, examining advanced logical functions, interpreting error values, and summarizing data. COMPSW-138 and COMPSW-139 provide good background material to help the student prepare for Microsoft Office Specialist (MOS) certification in Excel at the expert level. It is recommended that students complete COMPSW-137 or have a working knowledge of Excel essentials before taking this course. Prerequisite(s): COMPSW-137.

COMPSW-139 **Credits: 1**
MS Excel – Part 3
Excel Part 3 covers financial tools and functions, what-if analyses, Scenario Manager, Solver, database and web queries, data imports and exports, and collaboration on shared workbooks. This course, along with COMPSW-138, provides good background material to help the student prepare for the Microsoft Office Specialist (MOS) certification in Excel at the expert level. It is recommended that students have a working knowledge of the content covered in COMPSW-137 and COMPSW-138 before taking this course. Prerequisite(s): COMPSW-138.

CONSTR – Construction Trades General (Department: 476)

CONSTR-302 **Credits: 1**
OSHA Safety/CPR for the Trades
First Aid according to the Red Cross and the U.S. Occupational Safety and Health Administration guidelines will be covered in the construction trade courses in carpentry, masonry and cabinet making. Prerequisites(s): Admission into the construction trades.

CONSTR-380 **Credits: 1**
Mathematics for Construction Trades
Through practical problems of the carpentry, masonry and cabinetmaking trades, students review addition; subtraction; fundamentals of fractions and decimals; percentages, weights and measures and the application of formulas; along with linear, board, square root used in practical math in the construction trades for estimating and recording materials and supplies.

CSG – Computer Simulation and Gaming (Department: 153)

CSG-100 **Credits: 1**
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. Those who do not think that this is a great fit will have advising provided to discuss options in similar areas that may better suit their skills.

CSG-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.

CSG-114 **Credits: 3**
Introduction to Game Development/Programming
This course focuses on object-oriented logic and programming skills as it applies to simulation and game development. Students will learn the fundamentals of applying sequences, decisions, loops, variables, and basic data structures in a game engine. They also will learn the importance of optimization and how to debug simulation and game software. Proper program design, documentation and testing also will be emphasized.

CSG-115 **Credits: 3**
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 and compete against each other for bragging rights and notoriety. The focus of this class is to perform rapid prototyping of ideas in a challenging environment while developing collaboration skills.

CSG-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.

CSG-118 **Credits: 3**
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 the introductory course 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, application of algorithm design techniques to a game mod project. Prerequisite(s): CSG-117.

CSG-119 **Credits: 3**
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. We also will 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 on a real project for a real client. Prerequisite(s): ANIM-106 or CSG-118.

CSG-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.

CSG-121 **Credits: 1**
Interactive Display Production 2
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.

CSG-122 **Credits: 1**
Interactive Display Production 3
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.

CSG-127 **Credits: 3**
Agile Project Management
This course offers training in a wide variety of Agile project management techniques. Topics covered are Scrum, XP-Pair, Lean, Kanban and Feature Driven Development methods just to name a few. Agile provides the framework in which to apply these other methodologies for product development. Students taking this course will obtain the working knowledge required to pass industry-standard certifications through the Scrum Alliance. Some of the Certifications covered are Scrum Master, Product Owner, Scrum Trainer, Scrum Professional and Scrum Coach. This is done through project-based learning methods where teams will form and plan out several new-product paper prototypes. Agile is quickly becoming the industry standard for self-managing teams to come together and successfully release new products and redirect old ones.

CSG-128 **Credits: 3**
Intermediate Game Development Programming
This course expands upon object-oriented logic and programming skills as it applies to simulation and game development. Concepts such as formulas, algorithms, inheritance, polymorphism, and data hiding as they relate to simulation and game development programming will be the main focus. Students also will learn the principles of proper version control in a team-based setting. Pair programming, understanding and implementing features and tasks, and collaborative development also will be emphasized. Prerequisite(s): CSG-114.

CSG-129 **Credits: 2**
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): CSG-110, CSG-115.

CSG-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 also will be discussed. Prerequisite(s): CSG-110, CSG-115.

CSG-131 **Credits: 3**
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 will be emphasized.

CSG-132 **Credits: 3**
Artificial Intelligence
This course provides students with an introduction to artificial intelligence 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): CSG-179.

CSG-133 **Credits: 3**
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 economies. These courses are intended for game designer-focused students. Prerequisite(s): CSG-115, CSG-117.

CSG-137 **Credits: 3**
Innovation Lifecycle Management
This course provides students the opportunity to learn more mature Agile methods revolving around a focused Lean approach to new product development and business practices. Innovation Lifecycle Management is the blend of these methodologies that engage potential customers early and often while staying focused on the innovation process. Some of the core methods covered in this course are Kanban, Scrum Ban, Lean Startup, Complexity Thinking, Business Value Estimating, and Product Development Flow.

CSG-138 **Credits: 3**
Advanced Game Design
This course is designed to teach students how to create a unique game world with characters, environments, advanced combat systems and economy systems. This is intended to prepare game designers for creating unique game mechanics for all types of games. Focuses will be world design, level design, character design, enemy AI, combat design, puzzle design, and game economies. This course is intended for game designer-focused students or students who want to broaden their creative design skills to support another focus. Prerequisite(s): CSG-133.

CSG-147 **Credits: 3**
Game Studio Management
This course provides students the opportunity to learn about how to effectively build and manage a technical games software-development studio. Curriculum will revolve around building an employee handbook that reinforces a strong culture required to run a diverse Agile and Lean business successfully. Students also will build a three-year strategic business plan that focuses on researching and building products within emerging markets. This course also will help students to design, build and manage information systems; as well as identify DevOps opportunities that will effectively help them to successfully deliver winning software. This course builds on learning gained from the Agile Project Management and Innovation Lifecycle.

CSG-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 also will be creating their own object classes to put into the game mechanics. The final project focuses on team programming and testing. Prerequisite(s): CSG-118.

CSG-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): CSG-181.

CSG-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): CSG-129, CSG-130.

CSG-185 **Credits: 3**
Data Structures for Game Developers
This course focuses on advanced data structures used in programming simulations and games. Students will solve problems by using advanced data structures such as trees, queues, stacks and linked lists. The integration of these data structures into game engines, as well as the fundamental concepts on their efficient use, will be the main focuses of the course. Prerequisite(s): CSG-128.

CSTECH – Central Service Technician (Department: 534)

CSTECH-302 **Credits: 3**
Central Service Fundamentals
This course provides the fundamentals and theories of central services related to disinfection, decontamination, packaging, sterilization, biological monitoring, identification, handling, and assembly of surgical instruments, medical equipment and supplies. Storage, inventory, distribution and record keeping will be introduced in this course. Prerequisite(s): Must be admitted to the Central Service Technician (30-534-1) program.

CSTECH-303 **Credits: 2**
Central Service Clinical Practice
This course provides the applications of central service theory and fundamentals into the clinical setting. Clinical experience will include time in the central processing department and in the operating room. Prerequisite(s): Must be admitted to the Central Service Technician (30-534-1) program.

CULART – Culinary Arts (Department: 316)

CULART-100 **Credits: 1**
Introduction to Food Service/Hospitality Industry
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. Prerequisite(s): Must be admitted to one of the following programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1) or Food and Beverage Management (31-317-2).

CULART-105 **Credits: 2**
Dining Room Service
An orientation to acceptable hospitality standards essential to professional, dining room service. Types of service, dining room functions, staff training, using current technology, guest service/customer relations, workflow, and sales techniques are covered. Prerequisite(s): CULART-115, CULMGT-112, and completion of or currently enrolled in CULART-138.

CULART-106 **Credits: 4**
Contemporary Restaurant Cooking
In a practical restaurant kitchen, students plan, organize and prepare contemporary cuisines. To train students for this environment, this course emphasizes universal culinary techniques, intuitive cooking and cross-cultural flavor profiles. Students will learn about locally sourced

ingredients and sustainable kitchen practices. Prerequisite(s): CULART-115, CULMGT-112, and completion of or currently enrolled in CULART-105 and CULART-138.

CULART-107 **Credits: 1**

Field Experience in Food Service/Hospitality Industry

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. Prerequisite(s): INTRN-796 (minimum grade of C or P).

CULART-109 **Credits: 1**

Garde Manger 1

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. Forcemeats 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 CULART-122, CULART-124, CULART-126, CULART-127, CULART-128 and CULMGT-105.

CULART-111 **Credits: 1**

Garde Manger 2

This course includes three modules: salads, sandwiches and barista. Students will produce five major salad types including classic salads as well as modern-day favorites. They will develop an efficient method of producing salads in quantity. Students will learn the fundamental skills of sandwich making, set up a sandwich station, and develop methods for efficient sandwich production. The barista module offers students the opportunity to learn how to brew coffee and teas, and prepare cappuccino, latte, cafe au lait, macchiato, Americano, breve and mocha. Prerequisite(s): CULART-109, CULMGT-112.

CULART-114 **Credits: 4**

Business/Industry Food Service/Catering 1

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-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and must be admitted to one of the following programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1) or Food and Beverage Management (31-317-2).

CULART-115 **Credits: 2**

Culinary Arts Practicum

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): CULART-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and completion of or currently enrolled in CULART-114, CULART-134, CULART-135, CULART-136 and CULART-137.

CULART-116 **Credits: 2**

Mise en Place/Culinary Fundamentals

Students learn basic kitchen principles of food safety, kitchen organization, knife skills, egg cookery, recipe proficiency, equipment and smallwares identification and usage. Prerequisite(s): Must be admitted to one of the following programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1) or Food and Beverage Management (31-317-2).

CULART-117 **Credits: 1**

Nutrition for Culinary Arts

The course introduces the basic principles of scientific nutrition. Students will be introduced to nutritional guidelines, basic nutrients, and promotion of healthy cooking and eating. The course will show how the foods we eat contribute to our health and to the enjoyment of our lives.

CULART-118 **Credits: 1**

Sustainable Food Communities

A study of the food service industry's environmental impact on natural resources, and issues related to sustainable practices such as renewable energy, waste reduction, local food sourcing and food production methods.

CULART-119 **Credits: 1**

Culinary Science

Basic food science principles as related to cookery are the foci of study 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): Must be admitted to one of the following programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1) or Food and Beverage Management (31-317-2).

CULART-121 **Credits: 1**

Mise en place/Culinary Fundamentals

Students learn basic kitchen principles of food safety, kitchen organization, knife skills, egg cookery, recipe proficiency, equipment and smallwares identification and usage. Prerequisite(s): Must be admitted to one of the following programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1) or Food and Beverage Management (31-317-2).

CULART-122 **Credits: 1**

Stocks, Soups and Sauces

This course will have students discuss and prepare consommé, cream, clear, puree and bisque soups. Students will prepare a variety of stocks including white, vegetable, beef, brown and chicken. Students will make a variety of sauces including the mother sauces and several small sauces. Prerequisite(s): CULART-121, CULMGT-112.

CULART-124 **Credits: 1**

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 butchery equipment with sanitation and safety standards stressed throughout. Current HACCP procedures and methods are used. Prerequisite(s): CULART-121, CULMGT-112, and completion of or currently enrolled in CULART-122, CULART-126, CULART-127 and CULART-128.

CULART-125 **Credits: 5**

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. Prerequisite(s): CULMGT-112.

CULART-126 **Credits: 1**
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 freshwater fish, farm-raised fish and seafood from the oceans around the world. Prerequisite(s): Completion of or currently enrolled in CULART-122, CULART-124, CULART-127 and CULART-128.

CULART-127 **Credits: 2**
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): CULART-121, CULMGT-112, and completion of or currently enrolled in CULART-122, CULART-124, CULART-126 and CULART-128.

CULART-128 **Credits: 1**
Vegetables, Starches and Grains
Basic principles of vegetables, 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-116, CULMGT-112, and completion of or currently enrolled in CULART-122, CULART-124, CULART-126 and CULART-127.

CULART-139 **Credits: 1**
Food Truck Operations
The Food Truck Operations course will expose students to the daily operating functions of running a food truck. Students will have lecture covering the legalities, menu planning, logistics, marketing; preparing the food and serving from the truck for the lab portion of the course. The locations of the truck may vary and the planned menu will change based on the clientele. Each student will rotate through the stations of the truck to experience all aspects of running the business.

CULART-134 **Credits: 1**
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): CULART-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and completion of or currently enrolled in CULART-114, CULART-115, CULART-135, CULART-136 and CULART-137.

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): CULART-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and completion of or currently enrolled in CULART-114, CULART-115, CULART-134, CULART-136 and 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): CULART-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and completion of or currently enrolled in CULART-114, CULART-115, CULART-134, CULART-135 and CULART-137.

CULART-137 **Credits: 1**
South and Latin American Cuisine
Students discuss the history of the Latin American region and prepare dishes from that cuisine, using specific ingredients, equipment and tools needed, while adhering to basic kitchen principles of food safety. Prerequisite(s): CULART-122, CULART-124, CULART-126, CULART-127, CULART-128, CULMGT-105, CULMGT-112, and completion of or currently enrolled in CULART-114, CULART-115, CULART-134, CULART-135 and CULART-136.

CULART-138 **Credits: 2**
Restaurant Operations
This course focuses on the concepts of managing a restaurant operation. Roles of management, quality service, cash handling, technology trends, food and beverage pairing, and beverage management are studied in this course. Prerequisite(s): CULART-115, CULMGT-112, and completion of or currently enrolled in CULART-105.

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, vegetable, and starch cookery at an introductory level.

CULMGT – Culinary Management (Department: 317)

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 are studied with emphasis on sourcing, writing specifications and controlling costs.

CULMGT-105 **Credits: 3**
Culinary Math and Cost Control
Emphasis is placed on methods used to solve mathematical problems that relate to food service operations. Topics covered include operations with decimals, percentages, weights and measures, recipe conversion, menu pricing, food costs, inventories, break-even analysis and financial statements. Prerequisite(s): Must be admitted to one of these programs: Culinary Arts (10-316-1), Culinary Management (10-317-1), Culinary Assistant (31-316-1), Food and Beverage Management (31-317-2), Baking and Pastry Arts (10-314-1) or Baking Production (31-314-2).

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-113, CULART-114.

CULMGT-112 **Credits: 2**
Food Service Sanitation
Professional standards and practices in the prevention of foodborne illnesses are presented. Students prepare for the National Restaurant Association ServSafe Certification exam.

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): CULART-119, CULMGT-102, CULMGT-112, CULMGT-117, and INTRN-796 (minimum grade of C or P).

CULMGT-116 **Credits: 2**
Culinary Management Practicum
This is a capstone course in which 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. Prerequisite(s): CULART-113, CULART-114.

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. A basic understanding of the principles of food production and service management, sanitation, menu planning, labor and cost controls, and purchasing is emphasized.

CVTECH – Cardiovascular Technology (Department: 521)

CVTECH-102 **Credits: 2**
Introduction to CVT
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, medical ethics, emergent situations and non-patient related emergencies. Research papers on a variety of related topics and a group project will be required. Guest speakers and site visits to local healthcare/diagnostic facilities may be scheduled. Prerequisite(s): Admission to the Cardiovascular Technology (10-521-1) or EKG certificate (61-521-1) program.

CVTECH-110 **Credits: 2**
EKG Analysis
This course will explain the electrical activity of the heart and the various techniques for recording them. The differences between 3- and 12-lead electrocardiograms (EKGs) will be covered. Students will identify waveforms and rhythms, correlate them to the cardiac events, and troubleshoot and calibrate equipment. Prerequisite(s): Admission to the Anesthesia Technology (10-541-1) or the Cardiovascular Technology (10-521-1) program.

CVTECH-115 **Credits: 4**
Essentials of Cardiac Care 1
This course will concentrate on the cardiovascular system. The focus will be 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 the Cardiovascular Technology (10-521-1) or the EKG certificate (61-521-1) program.

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. The student will learn the typical daily duties of an invasive cardiovascular technologist through didactic and laboratory instruction. Competencies will be demonstrated through written examinations, verbal explanations and demonstrations of clinical technique. Prerequisite(s): Admission to the Cardiovascular Technology (10-521-1) program.

CVTECH-118 **Credits: 3**
Echocardiography Basics
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 the Cardiovascular Technology (10-521-1) program.

CVTECH-120 **Credits: 2**
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 cardiac catheterization laboratory 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-102, CVTECH-110, CVTECH-115, CVTECH-117, CVTECH-118.

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 an 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-102, CVTECH-110, CVTECH-115, CVTECH-117, CVTECH-118.

CVTECH-132 **Credits: 3**
Physics of Medicine
This course introduces the theoretical and practical aspects of the physical sciences. The dependence of medical diagnostics and the analogous relationship of the human body to the sciences are emphasized. Topics include flow, pressure, resistance, electronic circuit analysis and Ohm's Law. Prerequisite(s): ANTECH-120 or CVTECH-120. Admission to the Anesthesia Technology (10-541-1) or the Cardiovascular Technology (10-521-1) program.

CVTECH-133 **Credits: 3**
Cardiovascular Agents
The clinical importance of drug delivery is presented with an emphasis on the most commonly administered cardiovascular drugs, as well as other prophylactic medications. Additionally, the federal drug approval processes, various delivery methods, dose calculations and a review of the nervous system are presented. Prerequisite(s): CVTECH-120.

CVTECH-134 **Credits: 3**
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-135 **Credits: 4**
Essentials of Cardiac Care 2
The structure and function of the major systems of the body are surveyed, with a focus on their interaction and reliance on the cardiovascular system. Lecture studies utilizing models will include cellular, cerebral and nervous, renal, hepatic, pulmonary, lymphatic, endocrine, digestive, muscular and skeletal systems. Prerequisite(s): CVTECH-115 and admission to the Cardiovascular Technology (10-521-1) program.

CVTECH-137 **Credits: 4**
Invasive CVT Fundamentals 2
This course further exposes the student into the profession of the cardiovascular technologist (CVT). Through the utilization of lectures and hands-on laboratory instruction, the student will expand their working knowledge of diagnostic and interventional procedures, hemodynamic monitoring, sterile technique, radiation and personal safety, radiographic imaging principles, specialized technologies, electrophysiology, implantable devices, radiographic image panning. Prerequisite(s): CVTECH-120.

CVTECH-139 **Credits: 2**
Invasive CVT Clinical 1
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-140 **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-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 anomalies 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-140, CVTECH-144, CVTECH-145, CVTECH-149.

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, bio-effects 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 anomalies 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, as well as how various pathologies and congenital anomalies are demonstrated and evaluated by echocardiography. Students learn how to assess clinical abnormalities of the human heart as it is 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 CVT Clinical Seminar
Students will 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, which lead to credentialing in their chosen specialty. Guest speakers may be scheduled. Résumé writing and interview skills will be covered. Prerequisite(s): CVTECH-139.

CVTECH-186 **Credits: 4**
Invasive CVT 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 CVT 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 will help 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.

DENAST – Dental Assistant
(Department: 508)

DENAST-302 **Credits: 5**

Dental Chairside

This course prepares dental assistant students to chart oral cavity structures, dental pathology and restorations, and to assist a dentist with basic dental procedures including examinations, pain control and restorative and cosmetic procedures. Students also will develop the ability to educate patients about preventive dentistry, brushing and flossing techniques and dental procedures using lay terminology. Throughout the course, students will apply decoding strategies to the correct use and interpretation of dental terminology. Prerequisite(s): Admission to the Dental Assistant (30-508-2) program. Completion of or currently enrolled in DENAST-304, DENAST-305, DENAST-307 and DENHYG-101.

DENAST-304 **Credits: 2**

Dental and General Anatomy

This course prepares dental assisting students to apply fundamentals of general and dental anatomy to informed decision-making and to professional communication with colleagues and patients. Prerequisite(s): Admission to the Dental Assistant (30-508-2) program.

DENAST-305 **Credits: 2**

Applied Dental Radiography

Students develop skill in operation of X-ray units and in exposing bitewing, periapical, extra oral and occlusal radiographs. Emphasis is placed on protection against X-ray hazards. Students also will process, mount and evaluate radiographs for diagnostic value. In this course, students demonstrate competency on a mannequin. In addition, students will expose bitewing radiographs on an adult patient. Prerequisite(s): Completion of or currently enrolled in DENAST-304, DENHYG-101.

DENAST-306 **Credits: 3**

Dental Assistant Clinical

Students apply skills developed in Dental and General Anatomy, Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography, and Professionalism in a clinical setting with patients. Emphasizes integration of Career Essentials and basic occupational skills. Prerequisite(s): Completion of or currently enrolled in DENAST-302, DENAST-304, DENAST-307, DENHYG-101, DENHYG-113, and either DENHYG-103 or DENAST-305.

DENAST-307 **Credits: 1**

Dental Assistant Professional

This course prepares dental assistant students for professional success in a dental practice or other dental healthcare environment. Students develop a professional appearance and image. More importantly, they learn to work within ethical guidelines and legal frameworks. In preparation for entering 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) program.

DENHYG – Dental Hygiene
(Department: 508)

DENHYG-101 **Credits: 1**

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. CPR certification is a prerequisite; students will be required to show proof of certification before beginning the course. This course is a WTCS-aligned course required in both the Dental Hygienist and Dental Assisting programs.

DENHYG-102 **Credits: 4**

Oral Anatomy, Embryology, Histology

Prepares dental hygiene 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 (with minimum grade of B-). You also will have to complete DENHYG-101, and completion of or currently enrolled in DENHYG-105.

DENHYG-103 **Credits: 2**

Dental Radiography

Prepares dental auxiliary students to operate X-ray units and expose bitewing, periapical, extra oral, and occlusal images. Emphasis is placed on protection against X-ray hazards. Students also scan, process, mount, and evaluate dental images for diagnostic value, and interpret radiographic information. In this course, students demonstrate competency on a manikin and perform image receptor placement on a peer. In addition, students expose a full mouth series and double bitewing images on a patient. This course also provides the background in radiographic theory required for students to make informed decisions, adjustments, and to communicate this information to faculty, staff and patients. Prerequisite(s): Completion of or currently enrolled in DENHYG-102.

DENHYG-105 **Credits: 4**

Dental Hygiene Process 1

Introduces dental hygiene 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): Completion of or currently enrolled in DENHYG-103. Admission to Dental Hygiene (10-508-1) program.

DENHYG-106 **Credits: 4**

Dental Hygiene Process 2

This clinical course builds on and expands the technical/clinical skills student dental hygienists began developing in Dental Hygiene Process 1. 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, DENHYG-105.

DENHYG-107 **Credits: 1**

Dental Hygiene Ethics and Professionalism

Helps student dental hygienists develop and apply high professionalism 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 enhance their ability to present a professional appearance. Prerequisite(s): DENHYG-101, and completion of or currently enrolled in DENHYG-105.

DENHYG-108 **Credits: 3**

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 **Credits: 1**
Cariology
This course focuses on the characteristics and contributing factors of dental decay. Dental hygiene 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 **Credits: 2**
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-103.

DENHYG-111 **Credits: 3**
General and Oral Pathology
This course prepares the student dental hygienist to determine when to consult, treat or refer clients with various disease, infection or physiological conditions. Students learn to recognize the signs, causes and implications of common pathological conditions including inflammatory responses, immune disorders, genetic disorders, developmental disorders of tissues and cysts, oral tissue trauma, and neoplasm of the oral cavity. Prerequisite(s): DENHYG-102, DENHYG-103, DENHYG-105. Must be enrolled in a Dental Hygiene program in an accredited technical, community or four-year college, or with instructor's permission.

DENHYG-112 **Credits: 5**
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 case type 0, I, II and III patients. Dental Hygiene Process 3 introduces root detoxification using hand- and ultrasonic-instruments, laser bacterial reduction, selection of dental implant prophylaxis treatment options, and administration of chemotherapeutic agents. Students also adapt care plans to accommodate patients with special needs. Prerequisite(s): DENHYG-106, DENHYG-108, DENHYG-109, DENHYG-110, and completion of or currently enrolled in DENHYG-111.

DENHYG-113 **Credits: 2**
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 manikins and peers, and to clean removable appliances. Prerequisite(s): Completion of or currently enrolled in DENHYG-102 or DENAST-302.

DENHYG-114 **Credits: 2**
Dental Pharmacology
Prepares student dental hygienists to select safe and effective patient premedication, local anesthetic, chemotherapeutic and antimicrobial agents within the scope of dental hygiene practice. Students also will learn to recognize 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 **Credits: 2**
Community Dental Health
This course prepares the dental hygienist 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-117 **Credits: 4**
Dental Hygiene Process 4
This clinical 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 maximization of clinical efficiency and effectiveness. Prepares student dental hygienists to demonstrate their clinical skills in a formal examination situation. Prerequisite(s): Completion of or currently enrolled in DENHYG-113, DENHYG-114, DENHYG-118.

DENHYG-118 **Credits: 2**
Dental Anxiety and Pain Management
This course prepares the student dental hygienist to work within the scope of dental hygiene practice to manage anxiety and pain for dental patients. Students learn to prepare and administer local anesthesia and nitrous oxide safely. 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-130 **Credits: 1**
Dental Hygiene: Transition Into Practice
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, critically evaluate dental hygiene publications, 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 **Credits: 1**
Clinical Dental Hygiene Practicum
This skills laboratory will offer students the opportunity to enhance patient treatment skills developed during DENHYG-105, DENHYG-106 and DENHYG-112. Instruction will be tailored to individual student skills and abilities along with patient treatment needs. Prerequisite(s): DENHYG-102, DENHYG-103, DENHYG-105. Must be admitted to the Dental Hygiene (10-508-1) program.

DIESEL – Diesel/Powertrain Servicing (Department: 412)

DIESEL-300 **Credits: 2**
Introduction to Transportation
This class is designed to help the entry-level technician for transportation classes (automotive, collision repair and diesel) transition into the classrooms. An emphasis will be placed on how to work safely in an industrial environment. The course also focuses on soft skills to help the student obtain and keep employment.

DIESEL-301 **Credits: 2**
Diesel Fuel Systems
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 **Credits: 5**
Engine Construction and Installation
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, DIESEL-307.

DIESEL-307 **Credits: 5**
Electrical/Electronic Shop
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-308 **Credits: 1**
CNG Engine Operations Heavy-Duty Application
This course covers the principles of operation, maintenance and diagnosis of heavy-duty CNG engines. It utilizes the

Cummins ISL-G engine as the basis for the instruction. Prerequisite(s): DIESEL-301, DIESEL-307.

DIESEL-319 **Credits: 5**
Driveline Components
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, DIESEL-345.

DIESEL-333 **Credits: 2**
Heavy Truck HVAC Systems
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 **Credits: 2**
Emission Control Systems
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-301, DIESEL-307.

DIESEL-341 **Credits: 5**
Front-End, Brake and Suspension Systems
Students will perform diagnosis, testing and repair procedures of various types of steering and suspension systems, wheel alignment and heavy truck brake systems. Course content includes ABS (anti-lock brake systems) diagnosis, testing and repair. Prerequisite(s): DIESEL-307.

DIESEL-345 **Credits: 2**
Preventive Maintenance
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.

DIETNT – Dietetic Technician (Department: 313)

DIETNT-106 **Credits: 2**
Food Service Sanitation
Professional standards and practices in the prevention of foodborne illnesses are presented. Students prepare for the National Restaurant Association ServSafe Certification exam. FDA food code is reviewed. Prerequisite(s): Must be enrolled in the Dietetic Technician (10-313-1) program.

DIETNT-108 **Credits: 3**
Food Service Management 1
Basic principles of procurement, production, distribution and service, as well as applied management principles required to deliver food and nutrition programs are studied. Prerequisite(s): Completion of or currently enrolled in DIETNT-106 or CULMGT-112 or ServSafe certification.

DIETNT-109 **Credits: 3**
Food Science
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. Prerequisite(s): Must be admitted to the Dietetic Technician (10-313-1) program.

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): Completion of or currently enrolled in DIETNT-106.

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 lifecycle.

DIETNT-123 **Credits: 1**
Dietetic Technician Orientation
The policies of MATC, Healthcare Services Pathway, Dietetic Technician Program and The Academy of Nutrition and Dietetics 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 assessment are introduced. Prerequisite(s): Must be admitted to the Dietetic Technician (10-313-1) program.

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): DIETNT-123, DIETNT-151, and completion of or currently enrolled in DIETNT-152 and DIETNT-160. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-125 **Credits: 4**
Medical Nutrition Therapy 2
A continuation of Medical Nutrition Therapy (MNT) 1, 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, DIETNT-134. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-134 **Credits: 1**
Medical Nutrition Therapy 1 Coordinated Practice
Students learn through clinic activities to assess, plan, implement and evaluate the medical nutrition therapy (MNT) for conditions in adults at low to moderate risk in acute healthcare facilities. Prerequisite(s): DIETNT-123 and DIETNT-151, (minimum grade of C). Completion of or currently enrolled in DIETNT-152 and DIETNT-160. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-135 **Credits: 2**
Medical Nutrition Therapy 2 Coordinated Practice
Students obtain clinical experiences in coordination with DIETNT-125 didactic learning activities in the classroom. Students learn, through clinic activities, to assess, plan, implement and evaluate the medical nutrition therapy (MNT) of patients in acute care, long-term care, and outpatient settings. Prerequisite(s): DIETNT-123, DIETNT-124, DIETNT-151, DIETNT-152, and completion of or currently enrolled in DIETNT-125. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-136 **Credits: 3**
Medical Nutrition Therapy Field Experience
Through clinical experiences, 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): DIETNT-106, DIETNT-108, DIETNT-109, DIETNT-118, DIETNT-123, DIETNT-124, DIETNT-125, DIETNT-134, DIETNT-135, DIETNT-151, DIETNT-152, DIETNT-155, DIETNT-156, DIETNT-157, DIETNT-160, DIETNT-166, DIETNT-167.

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-106, DIETNT-108, DIETNT-109, DIETNT-118, DIETNT-123, DIETNT-124, DIETNT-125, DIETNT-134, DIETNT-135, DIETNT-151, DIETNT-152, DIETNT-156, DIETNT-157, DIETNT-160, DIETNT-166.

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. Prerequisite(s): Must be admitted to the Dietetic Technician (10-313-1) 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, musculoskeletal, endocrine, nervous, sensory, lymphatic, respiratory and cardiovascular. Prerequisite(s): Completion of or currently registered for DIETNT-160. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-155 **Credits: 3**
Community Nutrition
This course exposes the student to the available nutrition and health resources in the community including the utilization of local, state and federal nutrition education and food supplement programs. It prepares the student to identify the nutritional and educational needs of community groups to plan and develop culturally appropriate nutrition interventions that involve health promotion and disease prevention. The student learns through material discussions, service learning projects, guest speakers, skill-building activities and field trips. Prerequisite(s): DIETNT-124, DIETNT-156. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-156 **Credits: 2**
Nutrition in the Life Cycle
The nutrient and nutritional counseling needs for normal growth and optimal health throughout the life cycle are explored. Prerequisite(s): Completion of or currently enrolled in DIETNT-151. Must be admitted to the Dietetic Technician (10-313-1) program.

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-108, DIETNT-118 and DIETNT-106 or ServSafe certification. Must be admitted to the Dietetic Technician (10-313-1) program.

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. Prerequisite(s): Must be admitted to the Dietetic Technician (10-313-1) program.

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): Completion of or currently enrolled in DIETNT-156. Must be admitted to the Dietetic Technician (10-313-1) program.

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-108, DIETNT-118 and DIETNT-106 or ServSafe certification. Completion of or currently enrolled in DIETNT-157. Must be admitted to the Dietetic Technician (10-313-1) program.

DIETNT-170 **Credits: 2**
Nutritional Counseling Skills
The role of the nutrition therapist is studied to develop counseling relationships with clients in order to achieve behavior change for improved nutritional health. Prerequisite(s): DIETNT-125, DIETNT-156.

DLABT – Dental Laboratory Technician (Department: 507)

DLABT-102 **Credits: 5**
Dental Anatomy
This course is a study of the development of 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.

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 also will 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 laboratory techniques required to design and fabricate cast metal dental crowns, bridges and porcelain-fused-to-metal restorations. Lecture topics include the theories of model and die production, pattern design, pattern waxing, investing, casting, porcelain application, finishing and polishing metal crowns and bridges and porcelain-fused-to-metal restorations. In the laboratory sessions, a variety of metal crowns, bridges and porcelain laminated dental restorations are completed. Prerequisite(s): DLABT-102.

DLABT-128 **Credits: 4**
All Ceramic Techniques
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 also are studied. Laboratory projects include model and die production, substructure fabrication, porcelain application, and finishing and polishing procedures.

EBUS – eBusiness (Department: 135)

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, and ebusiness also will be discussed including Electronic Data Interchange (EDI) security, application development and web 2.0.

ECON – Economics (Department: 809)

ECON-195 **Credits: 3**
Economics
This course is designed to give an overview of how market-oriented economic systems operate, and it surveys the factors which influence national economic policies. Basic concept and analysis are illustrated by reference to a variety of contemporary problems and public issues. Concepts include scarcity, alternative economic system, growth, supply and demand, monetary and fiscal policy, inflation, unemployment, ecological, and global economic issues.

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 versus deregulation, international trade and economic development also will be discussed.

ECON-202 **Credits: 3**
Principles of Macroeconomics
This course covers national income and product analysis, financial institutions and the Federal Reserve System, and 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.

ECON-215 **Credits: 3**
Economics of Discrimination
Economic theory is used to examine discrimination with an emphasis on the labor market and inequality in the U.S. Topics include: fundamental economic theory, the labor market, the basis and measurement of discrimination, inequality, and the laws and policies relating to discrimination.

ECON-216 **Credits: 3**
Urban Economics
Urban Economics provides research about the built environment. Using the tools of economic analysis, Urban Economics describes the outcomes of public and private decision-making with regard to land use and clusters of populations and their transportation.

ECON-218 **Credits: 3**
International Economics
Explores theories of trade, barriers and benefits to trade, exchange rate systems, the role of central banks, trade deficits and surpluses, and balance of payments.

ECON-219 **Credits: 3**
Personal Finance and Consumer Economics
This course is designed to provide the necessary knowledge to make the student more informed about personal finances and to help develop life-long habits in planning, spending, saving and consumption decision-making.

ECON-223 **Credits: 3**
Ecological Economics
This course explores basic economic principles in the market-oriented global economy, including the limits to growth resulting from limited natural resources. Analyzes the mixed economy, which is a combination of private enterprise and government actions. Explains how an economy can achieve both a comfortable standard of living and ecological sustainability.

ECON-225 **Credits: 3**
Healthcare Economics
Healthcare Economics is a basic course in economics with an emphasis in healthcare. Topics include supply and demand, cost/benefit, resource allocation and production, as well as the conditions under which healthcare is provided by government.

EDF – Educational Foundations (Department: 809)

EDF-249 **Credits: 2**
Orientation to Urban Teaching
This course is designed for students who are interested in exploring a career in urban K-12 teaching. Students learn about themselves in relationship to the children they may teach. Students explore different licensure areas and the pathways toward becoming a teacher. Readings and topics are chosen in order to explore how race, class and ethnicity affect the dynamics of teaching-learning relationships in schools.

EDF-253 **Credits: 3**
Issues in Urban Teaching
This course is designed to expose you to issues in urban education. Some of you may have already spent considerable time in classrooms as teacher aides or paraprofessionals, or maybe even as teachers. The majority of us spent time in schools as students. Now we are preparing to enter the vital and rewarding field of teaching. As we prepare for this role reversal, we must have a deeper understanding of schooling, particularly in urban settings, so that we can begin to tackle the challenges we will face both within and outside of the classroom. Throughout this course, we will challenge one another to grow not only in our understanding of the issues that affect urban education, but also insofar as our own personal philosophies of teaching are constantly evolving. Service learning is a vehicle we will use to get hands-on experience tackling issues impacting urban education. Prerequisite(s): EDF-249 or SOCSCI-249 (minimum grade of C).

EDF-254 **Credits: 2**
Field Experience in Urban K-12 Classrooms
This is a field experience, service learning course which provides students who are completing the Teacher Education Track to (1) deepen their understanding of how race, language and socioeconomic status impact teaching and learning, (2) observe and participate in classroom management strategies, (3) become familiar with the organization, culture and curriculum of schools and classrooms in the Milwaukee Public Schools system. Students complete 40+ hours of observation, which is accepted toward fieldwork requirements at several Schools of Education. Prerequisite(s): EDF-253 or SOCSCI-253. Also, TB test and criminal background check are required for school placement.

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.

ELCTEC – Electronics Technology (Department: 605)

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 by the MATC co-op coordinator. Prerequisite(s): ELCTEC-119 or ELCTEC-140.

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 prepare technical reports. Prerequisite(s): ELCTEC-108, and completion of or currently enrolled in MATH-115.

ELCTEC-110 **Credits: 4**
DC/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, MATH-202, MATH-230, MATH-231 or MATH-232.

ELCTEC-111 **Credits: 3**
DC/AC Electronics 2
An extension of and enhancement to 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-112 **Credits: 3**
DC/AC Electronics 3
This course covers the advanced circuit analysis concepts and techniques used by electronic engineering technologists. After reviewing Kirchhoff's laws, phasors, and impedance, focus is placed on superposition nodal analysis, Thevenin's and Norton's theorems, complex power, and ideal transformers. Computer simulations will be used to reinforce theoretical analyses. Applications of KVL and KCL are examined with transistor bias networks. Students will perform laboratory experiments and prepare technical reports. Prerequisite(s): ELCTEC-111 or ELCTEC-116 and ELCTEC-120 or ELCTEC-118 and MATH-197 or MATH-230, and completion of or currently enrolled in ELCTEC-121.

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-111. 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 – 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**
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
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-121 **Credits: 3**
Electronic Devices Advanced
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 prepare technical reports. Prerequisite(s): ELCTEC-112, ELCTEC-121.

ELCTEC-130 **Credits: 3**
Digital Electronics
This is an introductory course in digital logic devices and circuits. Students 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 MATGEN-110, MATH-115, MATH-202, MATH-230 or MATH-231.

ELCTEC-131 **Credits: 3**
Advanced Digital Electronics
This is a continuation of 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-177, 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-111 or ELCTEC-116 and ELCTEC-120 or ELCTEC-118 and NATSCI-177 and ENG-197, and completion of or currently enrolled in ELCTEC-140.

ELCTEC-137 **Credits: 2**
Biomedical Electronics Technician Practicum I
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 Practicum 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): Either ELCTEC-110 or ELCTEC-115 and ELCTEC-130 or ELCTEC-117.

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-119 or ELCTEC-140.

ELCTEC-150 **Credits: 3**
Data Communications and Networking
This course extends the concepts of digital and analog signals to data communication and networking applications. Conceptual topics include network topology, the principles of signaling on physical links, transmission media, data formatting, Analog-to-Digital (A-to-D) conversion, multiplexing, modulation using digital data, error control, flow control, local area networks, and Ethernet protocols. The laboratory includes experiments on A-to-D conversion, data communication signaling, and error control. Prerequisite(s): ELCTEC-111, ELCTEC-120.

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. Prerequisite(s): ELCTEC-154.

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 also is used to obtain drivers and current computer technical documentation. Prerequisite(s): Completion of or currently enrolled in MATGEN-109, MATGEN-110, MATH-115, MATH-202 or MATH-230. Must be admitted to one of the following Electronics programs: (10-605-1, 10-605-3, 10-605-6, 10-605-7).

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, 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-119 or ELCTEC-140, and completion of or currently enrolled in MATH-115, MATH-202 or MATH-230.

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-119 or ELCTEC-140.

ELCTEC-176 **Credits: 3**
Computer 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 are studied. Prerequisite(s): 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 also are 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): ELCTEC-119 or ELCTEC-140.

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): Completion of currently enrolled in MATGEN-109. Must be admitted to one of the following Electronics programs: (10-605-1, 10-605-3, 10-605-6, 10-605-7).

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**
Fluid Power
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-119 or ELCTEC-140.

ELCTEC-195 **Credits: 4**
Motor Controls
This course covers the operational characteristics of DC and AC motors and generators, motor drives, transformers, PLC integration, and servo drives with particular emphasis on applications. A short study of renewable energy systems is included. Prerequisite(s): ELCTEC-111.

ELCTEC-196 **Credits: 3**
PLC Systems Basic
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, ELCTEC-130.

ELCTEC-198 **Credits: 3**
PLC Systems Advanced
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 applies 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.

ELECTY – Electricity
(Department: 413)

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-390 or ELECTY-392. Must be admitted to the Electricity (31-413-1) or the Manufacturing Maintenance (32-462-1) program.

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. Must be admitted to the Electricity (31-413-1) program.

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. Must be admitted to the Electricity (31-413-1) diploma program.

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 service requirements and code rules applicable to service installations. Prerequisite(s): ELECTY-308, ELECTY-340, ELECTY-392.

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 the Electrical Power Distribution (31-413-2) program.

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 work on in-class mocks-ups and on real-height, outdoor setups. Safety is emphasized. Prerequisite(s): ELECTY-318.

ELECTY-320 **Credits: 4**
Electrical Principles and Applied Math 1
An 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): Completion of or currently enrolled in ELECTY-319. Admission to the Electrical Power Distribution (31-413-2) program.

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): Completion of or currently enrolled in ELECTY-319. Admission to the Electrical Power Distribution (31-413-2) program.

ELECTY-322 **Credits: 5**
Electrical Power Distribution 2A
This course is a continuation of 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 chainsaws are covered. Prerequisite(s): ELECTY-319.

ELECTY-323 **Credits: 4**
Electrical Power Distribution 2B
This course is a continuation of ELECTY-322 and features underground (URD) and street lighting systems. Prerequisite(s): ELECTY-322.

ELECTY-324 **Credits: 4**
Electrical Principles and Applied Math 2
This course continues and concludes the study of DC circuits. This is followed by an introduction to trigonometry with applications to AC circuits and devices. Prerequisite(s): Completion of or currently enrolled in ELECTY-323. Admission to the Electrical Power Distribution (31-413-2) program.

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-308, ELECTY-340, ELECTY-392.

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. Methods for locating topics in the NEC are studied. The learner performs various types of calculations. Prerequisite(s): Completion of or currently enrolled in ELECTY-392 or ELECTY-390 and ELECTY-391; or be an electrician with a working knowledge of electricity. Student must be admitted to the Electricity (31-413-1) diploma program.

ELECTY-341 **Credits: 1**
Electrical Code Fundamentals 2
The learner will perform a comprehensive review of the NEC® and Wisconsin SPS 316 and will further develop skill in code interpretations and code calculations, as applied to all phases of electrical work. Prerequisite(s): ELECTY-340 or other code-related experience, or be an electrician currently working in the field.

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. Must be admitted to the Electricity (31-413-1) diploma program.

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-391 or ELECTY-392.

ELECTY-384 **Credits: 1**
Electrical Design and Estimating
The student will draw on their knowledge from previous wiring courses to design and estimate several typical residential installations. Municipal electrical licensing requirements and applicable code articles are studied. Prerequisite(s): ELECTY-310, ELECTY-312.

ELECTY-386 **Credits: 2**
Solid State Devices
This course presents a comprehensive overview of solid state devices. Emphasis is on the practical applications of solid state power control. All lectures are backed up by a lab to assure understanding of concepts. Prerequisite(s): ELECTY-391 or ELECTY-392.

ELECTY-390 **Credits: 3**
Principles of Electricity 1
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 **Credits: 2**
Principles of Electricity 2
This course is a continuation of 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 **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. Required math topics are presented during the course. Prerequisite(s): Must be admitted to the Electricity (31-413-1) program.

ELECTY-394 **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-391 or ELECTY-392.

ELECTY-396 **Credits: 2**
HVAC/R Electrical Systems
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 **Credits: 1**
Electrical Wiring Methods for Air Conditioning and Refrigeration
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.

ELECTY-398 **Credits: 3**
Electronic Circuits/Controls for HVAC/R
This course provides a practical knowledge of electricity, its measurement, and the circuits used in the field of heating, air conditioning and refrigeration. This is a theory course that covers the functions of electronic circuits and controls, and explains servicing techniques and troubleshooting procedures.

EMS – Emergency Medical Services (Department: 531)

EMS-192 **Credits: 5**
EMT
The Emergency Medical Technician course 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 the 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-311 **Credits: 4**
AEMT – Advanced Emergency Technician
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-192 or State of Wisconsin approved EMT class.

EMS-911 **Credits: 2**
EMS Fundamentals
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 related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations will foster the development of effective written and oral communications with colleagues and other healthcare professionals. Prerequisite(s): Must be admitted to the Emergency Medical Technician – Paramedic (31-531-1) program.

EMS-912 **Credits: 4**
Paramedic Medical Principles
This course addresses the complex depth of anatomy, physiology, and pathophysiology of major human systems while also introducing the paramedic students to the topics of shock, immunology, and bleeding. Prerequisite(s): Completion of or currently registered for EMS-911. Admitted to the Emergency Medical Technician – Paramedic (31-531-1) program.

EMS-913 **Credits: 3**
Advanced Patient Assessment Principles
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. Admitted to the Emergency Medical Technician – Paramedic (31-531-1) program.

EMS-914 **Credits: 3**
Advanced Pre-Hospital Pharmacology
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. Admitted to the Emergency Medical Technician – Paramedic (31-531-1) program.

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 also is 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

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and healthcare environment experiences with actual patients under the supervision of instructors or approved preceptor. Students also may 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 on early intervention to prevent respiratory and/or cardiac arrest if possible. Prerequisite(s): EMS-917, and completion of or currently enrolled in EMS-916.

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): EMS-916.

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-916 and 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, also are included within this course. Prerequisite(s): Completion of or currently enrolled in EMS-916 and EMS-920.

EMS-922 **Credits: 1**

EMS Operations

This course provides 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 their 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

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and healthcare environment experiences with actual patients under the supervision of instructors or approved preceptors. Students also may 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 Wisconsin DHS EMS. Prerequisite(s): Completion of or currently enrolled in EMS-919.

ENG – English
(Department: 801)

ENG-195 **Credits: 3**

Written Communication

Develops writing skills which include prewriting, drafting, revising and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

ENG-196 **Credits: 3**

Oral/Interpersonal Communication

Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.

ENG-197 **Credits: 3**

Technical Reporting

Prepare and present written, oral, and visual communication products, including instructions, proposals, informal and formal reports. Produce clear, usable communication by incorporating information design principles, arranging content to satisfy diverse audience needs, and presenting visuals for various contexts. Designed as an advanced course to develop collaborative communication practices, information literacy skills, and ethically responsible professional communication strategies.

ENG-200 **Credits: 3**

College Reading and Writing

This course is for all students who wish to strengthen their college-level reading and writing skills. This is a reading- and writing-intensive course that prepares students to succeed in ENG-201. This course focuses on college-level reading and writing skills with an emphasis on critical thinking and analysis. ENG-200 does not meet the English writing or communications skills requirement of any degree program, but may be applied as elective credits. Prerequisite(s): (Accuplacer Reading score >= 55 or an ACT Reading score >= 13) and an (Accuplacer Sentence score >= 60 or an ACT English score >=13).

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 which emphasize finding, evaluating, and incorporating appropriate secondary sources into students' written work. Prerequisite(s): ((ACT Reading score >=18) and ACT English score >= 18)) or (ENG-196, ENG-197 or ENG-200 with a minimum grade of C).

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 (minimum grade of C).

ENG-205 **Credits: 3**

Journalism 1

An introductory course in the principles and practices of news writing and reporting. It aims to develop the student's ability and sense of responsibility in evaluating, gathering and writing news stories. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-206 **Credits: 3**

Journalism 2

The student progresses to reporting and writing stories of a more specialized type. Students learn to find factual data, to assess its validity and to arrange it logically. Reporting assignments within the community provide additional experience in gathering news. Prerequisite(s): ENG-205.

ENG-207 **Credits: 3**

Creative Writing

The course will introduce students to the theory and practice of creative writing. Students will develop their reading and writing skills by working in a variety of literary genres, and by participating in small-group writing workshops. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-208 **Credits: 3**

Technical Communications

This course introduces techniques and practices for writing, editing, and developing technical communications. Students generate a number of documents, including but not limited to technical reports, proposals and instructions using a variety of formats, styles, strategies and visuals. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-213 **Credits: 3**

American Literature to 1865

This course is an introduction to American writing from the age of exploration to the Civil War. Students will examine early literary sources and consider how literature reflects and influences the lives of those who have lived in what is now the United States. Approaches vary with instructor; materials studied are likely to include early Native American oral traditions and works by authors such as Adams, Bradstreet, Child, Dickinson, Douglass, Emerson, Franklin, Hawthorne, Jacobs, Melville, Murray, Poe, Rowlandson, Stowe, Thoreau, Wheatley and Whitman. Major attention also is given to the preparation and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-214 **Credits: 3**

American Literature Since 1865

This course is a survey of the American literary tradition from post-Civil War writers to the present. Students will read a range of major American authors in order to trace the development, influence, and practice of American literature. Authors may include Alexie, Baldwin, Cather, Chopin, Ellison, Erdrich, Faulkner, Frost, Gilman, Hemingway, Tan, Updike and Walker. Major attention also is given to the preparation and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-215 **Credits: 3**

Contemporary Literature

Students study diverse contemporary authors and their work, which includes poetry, short stories, the novel, drama, and nonfiction, both creative nonfiction and literary criticism. Historical, cultural, social, and political contexts of contemporary literature are considered. The main objectives of the course are to introduce techniques and practices for interpreting, appreciating, discussing, writing, and researching about contemporary literature and to help students improve existing skills for composing and revising written work. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-218 **Credits: 3**

African-American Literature 1

African American literature written during the period from 1760 to 1940 is studied, including slave narratives, poetry, short stories, speeches, and essays. Students will consider the literature within a sociohistorical context, including such topics as the background of the African-American Renaissance, the Talented Tenth, double consciousness, the rise of the Black Intelligentsia, and the Harlem school. This course will prepare students for critical thinking and academic writing about literature. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-219 **Credits: 3**

African-American Literature 2

This course covers literature written after the Harlem Renaissance to the present. Students will consider the literature within a sociohistorical context and will discuss such topics as the Wright school, protest writers, raceless novels, novels and plays of African-American life, the Black Arts Movement, and existentialism in African-American letters. This course will prepare students for critical thinking and academic writing about literature. Students do not need to have completed ENG-218 in order to enroll. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-220 **Credits: 3**

Native American Literature

Students examine literary works by contemporary and traditional Native American writers and oral tradition storytellers. Wisconsin Indian history, culture, tribal sovereignty, and treaty rights will be covered within the context of literary analysis and critique. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-221 **Credits: 3**

Native American Women in Literature

This course is a study of literature written by and about Native American women from throughout North America. Literature by Wisconsin Indian women will be covered specifically to explore and understand Wisconsin Indian history, culture, tribal sovereignty, and treaty rights. Students will explore, analyze, and interpret Native women's literature from various genres and times: oral traditional tales to contemporary short stories, novels, poetry, plays, histories, and essays. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-222 **Credits: 3**

Images of Women in Literature

The course provides examples of images of women in literature as a creative reflection of, description of, and reaction to their social, economic, familial, legal, and personal status both in the past and in the present. Students in the course will read and analyze literature to better understand the reasons and motivations for the portrayal of women in literary works that reflect cultural and historical values. Through literary analysis, students will strengthen their understanding of how women's roles, and the perception of these roles, have or have not changed. Students in the course will demonstrate appreciation for the literature and reflect on the perceptions of women in literature and society. Major attention also is given to the preparation and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-223 **Credits: 3**

African American Literature By and About Black Women

This course provides a reflection of women's social, economic and legal status, both 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-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-224 **Credits: 3**

Introduction to U.S. Latino Literature

This course examines contemporary fiction, creative nonfiction, drama and poetry written by authors of Latin American descent. Students will learn about the contemporary sociocultural concerns experienced by the U.S. Latino population. Major attention also is given to literary analysis and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-235 **Credits: 3**

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 also is given to the preparation and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENG-240 **Credits: 3**

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 also is given to the preparation and writing of the research paper. Prerequisite(s): ENG-195 and ENG-196 or ENG-197 with a grade of C or better; ENG-201 with a grade of C or better.

ENTREP – Entrepreneurship (Department: 145)

ENTREP-101 **Credits: 3**

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.

ENTREP-102 **Credits: 3**

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.

ENTREP-103 **Credits: 3**

Strategic Business Communication

This course develops the integrated marketing message via electronic and traditional methods. Once a product or service is designed, the next step is to build awareness through consistent means, mixing techniques to adapt and reach intended markets. Students will use a variety of different media to understand the potential of the tools. Students will explore the positioning of various products to utilize multiple channels to get the intended message to the proper segments. Students will create a media supportive strategy for the business by utilizing and exploring current trends in marketing.

ENTREP-104 **Credits: 3**

Business Plan

This course covers writing, in detail, the aspects of the business. 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.

ENTREP-105 **Credits: 3**

Strategic Business Communication 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.

ENVHEL – Environmental Health (Department: 506)

ENVHEL-101 **Credits: 3**

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 many career paths of the environmental practitioner include water quality, food safety, air quality, global environmental health, sustainability, energy conservation and related fields.

ENVHEL-102 **Credits: 4**

Environmental Biology

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 streams). Various organisms are studied as indicators of environmental quality or degradation.

ENVHEL-104 **Credits: 4**

Industrial Hygiene Technology

This course deals with the recognition, evaluation and control of environmental factors in the workplace that affect the health, comfort, safety and well-being of the workers. Types of hazards (gases, vapors, particulates and diseases) are studied. Prerequisite(s): ENVHEL-101, ENVHEL-109, and MATH-107 or any 200-level MATH course.

ENVHEL-105 **Credits: 4**

Fundamentals of Hazardous Materials Control

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, handling and disposal of those materials in the workplace are studied. Course includes the preparation and sitting for the Wisconsin DATCP Structural Pest Control 7.1 certification exam. Successful completion of required coursework and hours will result in the 40-HR OSHA HAZWOPER Certification per 29 CFR 1910.120. 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
A student in this course will perform sampling, measurement and interpretation both in the field and laboratory settings for the analysis of water resources. Water is treated and used in our daily lives for drinking water, municipal reclamation, manufacturing, industry, food, beverage, medical use, and survival of aquatic ecosystems. The course will provide students with a better understanding of water quality monitoring, water treatment and analyses through real-world practical quantitative water chemistry applications. This course will include chemical safety, approved methodology, instrumentation use, regulations, quality assurance and quality control concerns. Prerequisite(s): ENVHEL-101, ENVHEL-102, ENVHEL-109, and MATH-107 or any 200-level MATH.

ENVHEL-115 **Credits: 4**
Air Quality
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, ENVHEL-109.

ENVHEL-119 **Credits: 3**
Food and Dairy Safety
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 food-borne diseases; food code compliance, and milk pasteurization and testing. Prerequisite(s): ENVHEL-101, 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 an optional internship. Prerequisite(s): ENVHEL-111, ENVHEL-115.

ENVHEL-127 **Credits: 3**
Environmental Field Projects
The goals of this course are to give participants advanced training in field techniques important to environmental health and water quality assessment and research. This course emphasizes field applications through lectures and field practices. Students will deal with actual environmental issues and complete projects associated with job-readiness, professionalism on the job, oral and written communication skills. Prerequisite(s): ENVHEL-111, ENVHEL-115.

ENVHEL-142 **Credits: 3**
Principles of Water Resources
This course is the study of water and its uses which includes: the history; types of surface water and groundwater sources; water quality; federal, state and local legislation; water conservation; and emerging water issues affecting 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, ENVHEL-115.

ENVHEL-145 **Credits: 3**
Water/Wastewater Operations – Municipal
Operational procedures and facilities used in public water supply treatment and wastewater/water reclamation treatment are studied. Methods of establishing and maintaining hydraulic flow and techniques for chemical treatment, nutrient removal and an overview of applicable regulations are integrated into the course. Field trips to local facilities are during class time in order to demonstrate various procedures and treatment process methods. Laboratory work may include demonstrations or hands-on testing.

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 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. Interpretations of laboratory results are based on applicable standards.

EPROD – eProduction
(Department: 701)

EPROD-150 **Credits: 3**
Introduction to eProduction
This survey course provides an introduction to eproduction – the process of creating content for emerging multiplatform 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-screen versus 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 multiplatform digital authoring.

EPROD-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 codecs and resolution, and transcoding and consolidation techniques.

EPROD-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 appropriate video cameras, digital SLRs, lighting techniques, audio acquisition and nonlinear editing. Students will produce and post-produce several productions of increasing complexity for multiplatform delivery as it pertains to eproduction.

EPROD-153 **Credits: 3**
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 also are discussed. MPTV's "College Place" initiative will serve as a practical lab for students whenever possible. Prerequisite(s): EPROD-150, EPROD-151, EPROD-152.

EPROD-154 **Credits: 3**
eProduction Integration
As new media and technology evolve, students will need to not only problem-solve with current electronic tools, but 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 emultiplatform presence using those current tools. Additionally, students will be challenged to anticipate the next wave of potential content distributors and plan for seamless multiversioned 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. Multiversioning of content is emphasized, permitting the student producer to understand how to take concept to creation via air, web, podcasting, social media, etc. Students produce a selected multimedia project and deliver it via these various media outlets. An eye toward future technologies and techniques is emphasized, encouraging students to challenge existing views and develop innovative new solutions.

FIN – Finance (Department: 114)

FIN-110 **Credits: 3**
Principles of Banking
An entry-level course designed to provide students who are new to banking a general understanding of the industry. Principles of Banking introduces fundamental banking concepts and principles, the basics of how banks operate as service providers and businesses, their obligation to operate in a safe and sound manner and manage risks, and the responsibilities of bank employees in a customer-focused financial services environment.

FIN-112 **Credits: 3**
Introduction to Banking
This course provides students with introductory knowledge of the business of the banking industry and the various products and services provided. Students will be able to explain the context, structure and operation of banks. Students will learn about the evolution of banking, from its history to electronic banking systems. They will learn about the various roles in the organization. Key financial statements used within the industry are introduced as well as the various instruments that construe negotiable instruments, types of endorsements, payment process, and fraud schemes. Personal financial planning will be emphasized for all individuals with it being a priority for anyone working in the field.

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. Prerequisite(s): FIN-110 or ACCTG-111 and ECON-195 or any 200-level ECON course.

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
Financial Statement Analysis is a capstone course for the Banking and Financial Services program. Emphasis is placed on interpreting and analyzing financial statements under different business structures and financing decisions. Course takes an analytical approach around balance sheet and the impact business decisions have on it. Prerequisite(s): ACCTG-111 or BADM-126.

FIRE – Fire Protection Technician (Department: 503)

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, EMS-301 or EMS-192.

FIRE-114 **Credits: 3**
Employability Skills
Employability Skills is a course designed to fine tune the student's skills, knowledge and abilities, and apply them to the application or promotion process within the fire service. Prerequisite(s): FIRE-142, FIRE-143, FIRE-153, FIRE-191, FIRE-192, FIRE-193.

FIRE-142 **Credits: 4**
Firefighting 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 Fire Fighter Level 1 certification with the State of Wisconsin. Prerequisite(s): FIRE-143, FIRE-191, FIRE-192, FIRE-193, and completion of or currently enrolled in FIRE-153.

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 also are covered.

FIRE-144 **Credits: 2**
Advanced Firefighting Principles
This course builds on Fire Fighter Level 1 skills with multiple practical sessions including structural firefighting, vehicle extrication, natural gas fire emergencies, firefighting foam and more. Students will learn communications, incident reporting and the Incident Management System. Students will be put in command roles and coordinate on-scene operations for multiple fire and rescue companies during live fire attack sessions. This course meets all requirements of Fire Fighter Level II State of Wisconsin certification. Prerequisite(s): FIRE-142, FIRE-153.

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 Fire Inspector I certification with the State of Wisconsin. Prerequisite(s): FIRE-143, FIRE-191, FIRE-192, FIRE-193.

FIRE-153 **Credits: 1**
Hazmat Awareness and Operations
Examines characteristics relating to hazardous materials including problems of recognition and mitigation. Prepares students to Hazardous Materials Awareness and Operations Level. Prerequisite(s): FIRE-143, FIRE-191, FIRE-192, FIRE-193.

FIRE-154 **Credits: 2**
Hazmat Chemistry
This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services.

FIRE-156 **Credits: 3**
Strategies, Tactics and Incident Management
Provides an in-depth analysis of the principles of emergency response through utilization of an Incident Management System. Prepares students to pursue current national ICS training requirements. Prerequisite(s): FIRE-142, FIRE-143, FIRE-153, FIRE-191, FIRE-192, FIRE-193.

FIRE-157 **Credits: 3**
Fire Investigation
Provides students with the fundamentals and technical knowledge needed for proper fire scene investigations. Many topics will be covered including: arson detection, conducting a fire investigation, determining whether the fire is accidental or incendiary, fire cause and origin. Prerequisite(s): FIRE-142, FIRE-143, FIRE-153, FIRE-191, FIRE-192, FIRE-193.

FIRE-191 **Credits: 2**
Principles of Emergency Services
This course will provide an overview of the fire protection and emergency services field. Topics include career opportunities, the history of fire and emergency services, chemistry and physics of fire, organization and function of public and private fire protection services, fire departments as part of local government, fire prevention, laws and ordinances affecting the fire service, and fire service nomenclature.

FIRE-192 **Credits: 3**
Principles of Emergency Services Safety and Survival
This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.

FIRE-193 **Credits: 3**
Fire Protection Systems
This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

FIRE-194 **Credits: 3**
Fire Protection Hydraulics
This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection, and to apply hydraulic principles to analyze and to solve water supply problems. Prerequisite(s): FIRE-193.

FIRE-195 **Credits: 3**
Fire Behavior and Combustion
This course explores the theories and fundamentals of how and why fires start, spread and are controlled.

FLANG – Foreign Language
(Department: 802)

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 patient's fear of hospital settings and understand Hispanic health belief systems.

FLANG-107 **Credits: 1**
Survival Spanish – Work and Travel America
This introductory approach to conversation presents everyday situations encountered in work and travel situations where Spanish is spoken. This course provides students with the basic vocabulary and cultural understanding needed when communicating in Spanish.

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; compliment people, food and drink; 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-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 busing staff; communicate general rules and safety issues.

FLANG-116 **Credits: 3**
Spanish for Child Care Professionals
This introductory approach to conversation provides students with the basic vocabulary and cultural understanding needed for talking with Spanish-speakers both in the community and abroad. Specifically related to child care, 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, communicate with children, and teach basic songs and nursery rhymes.

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 both 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 Educators
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. It also includes extensive training for non-Spanish-speaking classroom teachers who have Spanish-speaking children in their classroom.

FLANG-123 **Credits: 3**
Intermediate Spanish
This course is designed to help students build language proficiency and gain cultural awareness by discussing in the target language a variety of practical topics related to the Spanish-speaking community. One hour of language lab attendance per week is required.

FLANG-125 **Credits: 1**
Survival French – Work/Travel
Upon completion, participants will be able to use French to greet people, count and tell time, make telephone calls, communicate basic needs in business and travel situations, describe health issues, and order food and beverages at restaurants. They also will be able to identify and cope with common cross-cultural barriers.

FLANG-126 **Credits: 1**
French for the Culinary Arts
This course focuses on the acquisition of basic skills in French within the context of culinary arts. It emphasizes pronunciation, use of basic French in restaurants and food critique, study of French regional gastronomic specialties, and identification of values driving French culture.

FLANG-200 **Credits: 2**
Spanish 1A
For beginning students who feel they need more time to complete Spanish 1. This course is the first half of a curriculum that divides Spanish 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 the cultures of the Spanish-speaking world. The course is college transferable as Spanish 1 only upon completion of both semesters.

FLANG-201 **Credits: 2**
Spanish 1B
A continuation of Spanish 1, first semester. This slower-paced 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 the culture of the Spanish-speaking world. Upon completion of this course and FLANG-200, students have the equivalent of Spanish 1. Prerequisite(s): FLANG-200 or MATC placement test score.

FLANG-202 **Credits: 4**
Spanish 1
This Spanish course is designed to give you a strong base in the language and an increased awareness of the cultural perspectives offered. Part of learning Spanish is developing perspectives offered through the many Spanish-speaking cultures. The text will be used as a resource to help guide us; however, we will be expanding beyond the text when necessary.

FLANG-203 **Credits: 2**
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 **Credits: 2**
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 **Credits: 4**
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 score.

FLANG-213 **Credits: 3**
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-214 **Credits: 3**
Spanish 4
This course is continuation of FLANG-213. Students will continue to study cultural topics. Students will increase vocabulary, refine communicative skills and develop cultural insights. One hour of language lab attendance per week is required. Prerequisite(s): FLANG-213 or satisfactory MATC placement test score.

FLANG-215 **Credits: 2**
Intermediate Spanish Grammar and Conversation 1
A composition/conversation course that presents a comprehensive review of grammatical principles, verbs and idioms while promoting the four basic language skills of listening, speaking, reading and writing. Language lab attendance of one period per week is mandatory. Prerequisite(s): FLANG-205.

FLANG-216 **Credits: 2**
Intermediate Spanish Grammar and Conversation 2
A continuation of FLANG-215. Principles of grammar are systematically reviewed with emphasis on the use of the subjunctive and audiolingual practice, as well as the development of speaking, listening and writing skills. Language lab attendance one period per week is mandatory. Prerequisite(s): FLANG-215.

FLANG-218 **Credits: 3**
Spanish 5: Conversation, Grammar and Current Topics
This course focuses on developing accuracy and proficiency in spoken communication. Building on their experience in Spanish 4, students study the Spanish language in greater depth and breadth. Students continue to refine their language abilities through the study of the Hispanic culture. Current topics, cultural norms and a "tour" of the Hispanic world will offer students the opportunity to study the target culture while using the target language. Prerequisite(s): FLANG-214 or satisfactory MATC placement test score.

FLANG-219 **Credits: 1**
Spanish Immersion/Special Topics
Spanish immersion: music and culture in Mexico is for students at beginning proficiency (completion of at least one semester of college-level Spanish or the equivalent). Students at higher levels also can benefit. With 16 hours of immersion, your Spanish will improve through conversation, games and activities.

FLANG-221 **Credits: 4**
French 1
A conversational approach to French introduces the student to the four language skills – listening, speaking, reading and writing. Elementary rules of grammar and exercises are presented at the appropriate time. 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 or satisfactory placement test score.

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- to mid-level of written and spoken Spanish. Prerequisite(s): FLANG-213 or satisfactory placement test score.

FLANG-262 **Credits: 4**
Arabic I
This Arabic course is designed to give you a strong base in the language and an increased awareness of the cultural perspectives offered. Part of learning Arabic is developing perspectives offered through the many Arabic-speaking cultures. The text will be used as a resource to help guide us; however, we will be expanding beyond the text when necessary.

FLANG-263 **Credits: 4**
Arabic 2
In this continuation of FLANG-262, students develop additional communicative skills in real-life situations and gain a better understanding of the Arabic-speaking cultures of the world in relationship to their own. One hour of language lab attendance per week is required. Prerequisite(s): FLANG-262 or consent of instructor.

FUNERL – Funeral Service
(Department: 528)

FUNERL-104 **Credits: 2**
Funeral Service Field Experience I
Students currently enrolled in Semester I of the Funeral Service program will be placed in a participating funeral home establishment for a total of 8 hours per week to gain hands-on experience in all facets of funeral directing. Required tasks will include embalming under the supervision of a licensed funeral director, cosmetizing, observing arrangement conferences, assisting with conducting services, and any other related tasks in funeral service. Report submissions will be required of students throughout the term of the class documenting their tasks and progress. Prerequisite(s): Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-105 **Credits: 2**
Funeral Service Field Experience II
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. On-site meetings, assigned readings, independent research and case reports are included. Prerequisite(s): FUNERL-104, FUNERL-110, FUNERL-112, FUNERL-114, FUNERL-116. Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-106 **Credits: 3**
Thanatochemistry
This course will offer an in-depth study of the basic principles of chemistry as they relate to funeral service. In particular, this course will stress the chemical principles and precautions involved in sanitation, disinfection, public health as related to the embalming application. Emphases are placed on selected aspects of general chemistry, organic chemistry and biochemistry as they relate to decomposition, disinfection, and the process of embalming and treatment of the dead human body.

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. Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-112 **Credits: 3**
Laws, Rules and Regulations of Funeral Service
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 or BADM-165, and must be admitted to the Funeral Service (10-528-1) program.

FUNERL-114 **Credits: 2**
Pathology of Funeral Service
General disease processes, specific diseases and causative factors are presented. Clinical features are correlated with pathologic changes and necropsies are discussed. Particular emphasis is placed on diseases that tend to create embalming problems and situations with medicolegal implications. Prerequisite(s): Must be admitted to the Funeral Service (10-528-1) program.

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. Prerequisite(s): Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-117 **Credits: 4**
Funeral Service Management
The funeral director as an effective managerial person is presented. Coverage includes small business management concepts, 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, FUNERL-116.

FUNERL-120 **Credits: 4**
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 practice restorative art in laboratories provided by the college. Prerequisite(s): NATSCI-138 or NATSCI-177. Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-121 **Credits: 1**
National Funeral Board Prep I
This course will be a weekly guided review and testing practice of all National Board Exam content while identifying students' personal learning preferences and reinforcing test-taking strategies. Prerequisite(s): Completion of or currently enrolled in FUNERL-104, FUNERL-110, FUNERL-112, FUNERL-114, FUNERL-116 and FUNERL-131, or graduate of the program.

FUNERL-122 **Credits: 1**
National Funeral Board Prep II
This course is a continuation of National Funeral Board Prep I for guided review and testing practice of all National Board Exam content. It will include several testing simulations experiences. Prerequisite(s): Completion of or currently enrolled in FUNERL-105, FUNERL-117, FUNERL-120, FUNERL-132 and FUNERL-153, or graduate of the program.

FUNERL-131 **Credits: 4**
Embalming Theory
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 by or approved by the college. Prerequisite(s): NATSCI-138 or NATSCI-177. Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-132 **Credits: 3**
Funeral Service Science
Building off of Embalming 1, students will go more in depth in their learning about embalming. The course will examine procedures and treatments for handling and embalming difficulties encountered due to disease and pathological changes, autopsied and procurement cases, organ and tissue donation cases and various conditions encountered in the dead human body. The course also will tie in basic principles of chemistry, microbiology and pathology as they relate to funeral service and the embalming process. Students will practice embalming in laboratories provided by or approved by the college. Prerequisite(s): FUNERL-131. Must be admitted to the Funeral Service (10-528-1) program.

FUNERL-140 **Credits: 2**
National Board Exam Review
This course will be offered online as an accelerated review of course material that will be covered on the National Board Exam for Funeral Directors. It is intended for students who have successfully completed the Funeral Service program at Milwaukee Area Technical College or from any other accredited program for funeral service. Emphasis will be placed on reviewing either the arts or science portion of the National Board Exam, based on the needs of the student.

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 also is placed on the application and purpose of sociology in funeral service. Prerequisite(s): PSYCH-199 or PSYCH-231.

GENENG – English PLI
(Department: 831)

GENENG-103 **Credits: 3**
Introduction to College Writing
This course will help you prepare for your required English course. This course introduces basic principles of composition, including development, unity, and coherence in paragraphs and multiparagraph documents. A further goal of this course is to assist students in demonstrating the correlation between paragraphs and an essay. Prerequisite(s): ACT English Score >=13 or ENGPH-771 (minimum grade of C or Pass).

GENREA – Reading PLI
(Department: 851)

GENREA-105 **Credits: 3**
Introduction to Reading and Study Skills
This course provides learners with opportunities to develop study skills and expand reading skills including comprehension, fluency and vocabulary skills. Learners apply reading skills to academic tasks and read to acquire information from a variety of sources.

GENST – General Studies
(Department: 890)

GENST-204 **Credits: 3**
College Success Seminar
This course provides learners with strategies to develop tools for success in college and life. Students will learn academic and research skills. Students will develop strategies, behaviors and habits that lead to success in personal responsibility, goal setting, self-motivation, self-management, interdependence, and multicultural awareness. Learners will apply self-management techniques, explore financial management strategies, practice study skills, and apply methods to improve personal effectiveness.

GLOBAL – Global Studies
(Department: 140)

GLOBAL-113 **Credits: 1**
International Field Studies - 1
Emphasizes the importance of integrating international awareness in the student's program. Students explore the facets of the international environment, examining ethical, cultural, social and organizational similarities and differences.

GLOBAL-115 **Credits: 3**
International Field Studies
Emphasizes the importance of integrating international awareness in the student's program. Students explore the facets of the international environment, examining ethical, cultural, social and organizational similarities and differences.

GRDS – Graphic Design
(Department: 201)

GRDS-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 also will learn how to utilize the available media and work within design constraints.

GRDS-104 **Credits: 3**
Researching and Concepting
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): GRDS-103.

GRDS-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 composing 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.

GRDS-110 **Credits: 3**
Layout and Publishing: 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): GRDS-115.

GRDS-111 **Credits: 3**
Advertising Design
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): GRDS-107.

GRDS-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): GRDS-121.

GRDS-113 **Credits: 3**
Digital Media Preparation
An advanced layout and production course addressing the present advertising market. Students prepare concepts through campaign for digital distribution. Topics covered include digital advertising, email marketing, basic web design, layout and coding as well as interactive and social media design and considerations. Prerequisite(s): GRDS-116.

GRDS-115 **Credits: 3**
Typographic Fundamentals
This course introduces typography history, vocabulary and basic skills. Students will learn the type anatomy and the absolute and relative measurement system. Creative projects include both editorial and illustrative typography with proper typeface selection, composition, legibility, aesthetics and hierarchy. Students will learn basic tools in Fontographer in understanding the structure of digital type.

GRDS-116 **Credits: 3**
Integrated Design Thinking
Through examining experiences of using personal computers, hand-held devices, and physical tools, environments and processes, this course introduces the fundamental concepts of interaction and interface design, including information structure, perceived affordance, icon, label, page layout, metaphor, navigation and orientation. Students will learn user-centered design methodology. The course also briefly surveys social, cultural, behavioral, cognitive and emotional human factors pertaining to complex design issues. Prerequisite(s): GRDS-110.

GRDS-117 **Credits: 3**
Packaging Design
This course focuses on seeing and designing in three dimensions for product packaging, point-of-purchase (POP) display, and environmental graphics. Graphic continuity, content, client/customer research and aesthetic issues are dealt with at length. Students also will learn simple model-making techniques and choosing appropriate materials. Prerequisite(s): GRDS-122.

GRDS-121 **Credits: 3**
Exhibition Design
This course focuses on designing in three dimensions for larger-scale exhibit and display applications. Client research, exhibit functionality, technical file preparation, and aesthetic issues are dealt with at length. Students will refine model-making techniques and learn methods of reproduction. Prerequisite(s): GRDS-117.

GRDS-122 **Credits: 3**
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.

GRDS-128 **Credits: 1**
Portfolio Pathway
Exit course for pathway students, and portfolio checkpoint for program students. This course will help students evaluate their current portfolio, existing work, and modifications and improvements based on critique. Students will develop an online portfolio of work using Behance, WordPress or any blog platform. Prerequisite(s): GRDS-103.

GRDS-129 **Credits: 3**
Motion Graphic Design
An advanced layout and production course addressing motion graphic design. Students prepare concepts to finished pieces for digital distribution. Topics covered include design technique for time-based media through a variety of mediums. Prerequisite(s): GRDS-115.

GRDS-153 **Credits: 3**
Portfolio Assessment
In this course, students will learn portfolio preparation and presentation, networking and establishing contacts, job interviewing skills, résumé-writing, completing job applications and follow-up. Guest speakers will add professional insight. Prerequisite(s): GRDS-116.

HEALTH (Department: 501)

HEALTH-101 **Credits: 3**
Medical Terminology
Focuses on the component parts of medical terms: prefixes, suffixes and word roots. You will practice formation, analysis and reconstruction of terms. This course's emphasis is on spelling, definition and pronunciation. It provides an introduction to operative, diagnostics, therapeutic and symptomatic terminology of all body systems as well as systemic and surgical terminology.

HEALTH-104 **Credits: 2**
Culture of Healthcare
An introduction to the culture of healthcare for students interested in working in various healthcare settings. Learners examine professionalism, interpersonal and written communication skills, problem-solving skills, and patient privacy and confidentiality issues as they relate to healthcare.

HEALTH-107 **Credits: 2**
Digital Literacy for Healthcare
The focus of this course is the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

HEALTH-109 **Credits: 1**
Advanced Nutrition for Health Professionals
The Advanced Nutrition for Health Professionals course is designed to provide students with a background in the healthcare profession and in nutrition that will allow them to discuss nutrition with their patients in relationship to prevention, health promotion and wellness.

HEALTH-110 **Credits: 1**
Basic Nutrition for Health Professionals
The Basic Nutrition for Health Professionals course is designed to provide students with a baseline understanding of how diets are recommended for patients.

HEALTH-160 **Credits: 2**
Study Strategies for Health Occupations
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 **Credits: 2**
Pharmacology for Allied Health
Introduces student 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 the major body systems. Prerequisite(s): HEALTH-101, MEDAST-302.

HIST – History (Department: 803)

HIST-203 **Credits: 3**
Western Civilization From Ancient Times to 1776
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 **Credits: 3**
Western Civilization From 1776
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-206 **Credits: 3**
America Since 1945
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-210 **Credits: 3**
Women in American History
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 **Credits: 3**
America Through 1877
A survey of the history of the United States from 1500 to 1877. Emphasis is placed on colonial development, the movement for independence, and the establishment of government under the Constitution. Special attention is devoted to the evolution of political democracy, economic developments, the emergence of the sectional controversy leading to the Civil War, and the period of Reconstruction that followed.

HIST-212 **Credits: 3**
America Since 1877
The major developments in United States history from the 1870s to the present are traced. Attention is focused on industrialization, urbanization, development of the West, reform movements, and the emergence of the United States as a world power.

HIST-213 **Credits: 3**
America: 1921-1945
This course focuses on America 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 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 BC 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 other 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 instruction 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 presenting the history of Wisconsin Indians is 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-226 **Credits: 3**
African History 1 Before 1800 C.E.
This course discusses African history from human origins to the start of European expansion into tropical Africa in the 19th century. It examines pre-colonial African civilizations such as the kingdoms and empires developed in northeast, west, central and southern Africa. It examines the early contact of Africans with the outside world, for example, through the spread of Islam and Christianity, and the migration of the major African ethnic groups. It explores the internal African slave trade; the political, economic and sociocultural institutions; and the regional diversity of Africa at the eve of colonial rule.

HIST-227 **Credits: 3**
African History 2 Since 1800 C.E.
This course explores the major political, economic and sociocultural transformations taking place in Africa from the start of European territorial expansion in the early 19th century to the present. It examines the implementation and challenges of colonial rule, the decolonization process, the rise of African nationalism, and the diverse conditions facing independent African countries. It explores the challenges of African governments at nation building and the different strategies adopted in that effort.

HIST-228 **Credits: 3**
World History to 1500
This course examines global history for antiquity to 1500 C.E. It explores from the first river valley civilizations through the Bronze Age, to the development of writing, the depiction of the human form and the creation of new communities in the Middle East. It examines 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 embodies written and material culture and activities carried out by people all over the world.

HIST-229 **Credits: 3**
World History Since 1500
World History Since 1500 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-231 **Credits: 3**
Latin American History
This course is subdivided into the following topics: precolonial 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-232 **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 the rich and diverse multiethnic and multicultural heritage in the backdrop of Wisconsin's seasonal array of natural beauty, wonderlands, and festivals.

HIST-236 **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.

HIT – Health Information Technology (Department: 530)

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-163.

HIT-162 **Credits: 3**
Foundations of HIM
Introduces learners to the healthcare delivery system, and the external forces that influence healthcare delivery. Sets an understanding for the expectations and standards related to professional ethics, confidentiality and security of health information. Differentiates the use and structure of healthcare data elements, data standards, and the relationships between them. Prepares learners to collect and maintain health data to ensure a complete and accurate health record. Prerequisite(s): HEALTH-101, and completion of or currently enrolled in HEALTH-107.

HIT-163 **Credits: 3**
Healthcare Stats and Analytics
Explores the management of medical data for statistical purposes, focusing on descriptive and inferential statistics including definition, collection, calculation and compilation of numerical data. Examines data analytics, retrieval, presentation and research methodologies. Prerequisite(s): HEALTH-107, HIT-162.

HIT-164 **Credits: 3**
Introduction to Health 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 enterprise information management, and database architecture design and implementation. Prerequisite(s): HEALTH-107, HIT-162.

HIT-165 **Credits: 3**
Intermediate Coding
Prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation and official coding guidance to support appropriate reimbursement. Students will participate in CDI activities, including preparation of appropriate physician queries in accordance with compliance guidelines. Prerequisite(s): HIT-197, HIT-199, and completion of or currently enrolled in HIT-159 and HIT-184.

HIT-166 **Credits: 1**
HIT Capstone
Explore technical skills and professional attributes desired for the HIM profession, and conduct activities to assess one's own readiness to enter the health information industry. Prerequisite(s): Completion of or currently enrolled in HIT-196.

HIT-167 **Credits: 3**
Management of HIM 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): HIT-162, HIT-165.

HIT-178 **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 is addressed. Prerequisite(s): HIT-162.

HIT-182 **Credits: 3**
Human Disease for the 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, NATSCI-189 or both NATSCI-201 and NATSCI-202, and HEALTH-101 (minimum grade of C).

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): HEALTH-101, HEALTH-107 (minimum grade of C) and take either NATSCI-177, NATSCI-189 or NATSCI-201 and NATSCI-202 (minimum grade of C). Must be admitted to the Medical Coding (30-530-2) or the Health Information Technology (10-530-1) program.

HIT-196 **Credits: 3**
Professional Practice
Applies previously acquired skills and knowledge by means of clinical experiences in the technical procedures of health record systems and discussion of clinical situations. Student may participate in a supervised clinical experience in healthcare facilities. Prerequisite(s): HIT-165 and completion of or currently enrolled in HIT-161, HIT-164 and HIT-166. Must be admitted to Health Information Technology (10-530-1) or Medical Coding (31-530-2) program.

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, NATSCI-189 or NATSCI-201 and NATSCI-202. HEALTH-101 and HEALTH-107 (minimum grade of C). Completion of or currently enrolled in HIT-182. Must be admitted to the Medical Coding (31-530-2) or the Health Information Technology (10-530-1) program.

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, NATSCI-189, or NATSCI-201 and NATSCI-202. HEALTH-101 and HEALTH-104 (minimum grade of C). Completion of or currently enrolled in HIT-182. Must be admitted to the Medical Coding (31-530-2) or the Health Information Technology (10-530-1) program.

HORT – Horticulture
(Department: 001)

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 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 healthcare 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 also are 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**
Survey of 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.

HORT-117 **Credits: 3**
Landscape Equipment II
This course covers advanced operation and safety skills involved in using landscape construction equipment. Grading, drainage and sculpting, and materials handling are emphasized using specialized equipment attachments and implements. Skills learned contribute toward passing the Certified Landscape Technician test administered at MATC by the Professional Landcare Network (PLANET).

HORT-118 **Credits: 3**
Landscape Business Principles
This course outlines the processes involved in running a business that are unique to landscaping. This includes finding property, boundaries and determining restrictions on what can be done to land. Landscaping contracts and the process of expediting work on land are included. The landscape business is approached from the standpoint of financial management, human resource management and project management.

HORT-119 **Credits: 3**
Landscape Construction 1
This course provides an overview of the installation of hardscape features of the landscape. Included are basic construction techniques for retaining walls, outdoor steps, paving (patios, walks and drives), decks and fences. Limitations in executing hardscape designs are discussed.

HORT-120 **Credits: 3**
Landscape Construction II
This course focuses on developing proficiency in landscape installation. Students practice skill development with specialized landscape construction equipment that enhances labor efficiency in completing projects.

HORT-121 **Credits: 3**
Irrigation, Lighting and Ponds
These landscape accessories augment both the greenscape and the rest of the hardscape. They are increasingly popular add-ons to commercial, as well as residential, projects. As part of a national trend, irrigation, low-voltage lighting and water features contribute to more sophisticated, outdoor living areas.

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
Learn to draw landscape graphics and understand what makes them readable. Review and practice design processes, including planting design and its basic elements. Practice planting design developed first 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 will be class collaboration and class presentations to clients. Students are encouraged to review each other's work. Color projects also are 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 1: Tree Care Fundamentals
Students will learn tree establishment, pruning, bracing and cabling, problem treatments, fertilization, rigging and removal, avoidance and treatment of construction damage, tree risk and decay detection, rope and harness tree climbing, and knot tying. Brush chippers, stump cutters, aerial lifts, root excavators, and chainsaws are demonstrated and operated. The current Safety Requirement Standards (ANSI Z133) 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, practical rigging and tree removal as opportunities present themselves. Knowledge of safe tree care operations and tree pruning standards are stressed, and students 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-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 are 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 (LandCAD) 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-152 **Credits: 3**
Greenhouse Production – Spring
Students will grow spring greenhouse crops from propagation, transplanting, fertilization, and 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 herbaceous annuals, perennials and bulb plants are studied with an emphasis on identifying flower and foliage characteristics, and their use in the landscape.

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-114 or HORT-158.

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-114 or HORT-158.

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-171 **Credits: 2**
Exterior Plant Pests
The animal, insect and disease pests and abiotic disorders of woody landscape plants are studied, along with control methods specific to each. Emphasis is on correct diagnosis and use of a plant health care system of control.

HORT-193 **Credits: 3**
Native Plants – Spring
This course teaches landscaping with native plants through on-site 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.

HOTEL – Hotel/Hospitality
(Department: 109)

HOTEL-105 **Credits: 3**
Hospitality Marketing, Sales and Revenue Strategy
This course takes a practical perspective in introducing students to marketing, sales, and revenue management of hotels and restaurants. The course identifies trends, market segmentations in the industry, and the concept of revenue management.

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 relations 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
Provides an overview of the informational needs of lodging properties and food service establishments; addresses essential aspects of computer systems, such as hardware, software, and generic applications. The course focuses on computer-based property management systems for both front office and back office functions and examines features of computerized restaurant management systems. Describes hotel sales computer applications, revenue management strategies, and accounting applications. The course also focuses on managing information systems and examines the impact of the internet and private intranets on the hospitality industry. Students also learn basic tasks on a mock reservation system such as making a reservation, group reservation, travel agent reservation, and looking up availability. Students will learn the basic operation of Cvent and also become Cvent certified.

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.

HOTEL-127 **Credits: 3**
Fundamentals of Meetings and Special Events
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: 1**
Internship – Hotel/Meeting 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. Prerequisite(s): INTRN-796 (minimum grade of C or P).

HOTEL-133 **Credits: 3**
Supervision in the Hospitality Industry
The course is designed to provide students with the principles of supervision as they apply specifically to the hospitality industry: To identify the role of the supervisor in hospitality operations; to describe the communication skills essential for effective leadership; to understand the effect of labor shortage, Equal Employment Opportunity laws, sexual harassment, cultural diversity, substance abuse, and working with employee unions.

HOTEL-135 **Credits: 3**
Hospitality Professional Service and Development
In this course, students will be able to identify the difference between excellent and poor customer service, along with how to anticipate guest needs in order to provide exceptional service and build rapport. Students will be able to define and demonstrate what professionalism means in the hospitality industry. After the completion of this course, students will have the opportunity to become Guest Service Gold Certified from the American Hotel and Lodging Association.

HOTEL-150 **Credits: 2**
Housekeeping Operations
This course investigates 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.

HRMGT – Human Resources Management
(Department: 116)

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 assessing the current extent of diversity in the workplace; analyzes the effect of perceptions, attitudes, biases and organization culture on diversity; deals with barriers; changes management strategy; and processes reactions, measures progress, and celebrates success.

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

Strategic Management focuses on understanding the operation of the total business enterprise. This course 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 chosen strategy successfully. This courses aims to equip the student with the core concepts, frameworks and techniques of strategic management, which will allow you to understand what managers must do to make an organization achieve superior performance.

HRMGT-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.

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-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 internal company policies.

HRMGT-197 **Credits: 3**

Employee Training and Development

Students will learn the fundamentals of training and development coordination. Emphasis will be placed on terminology, the systems approach to training (needs assessments, design, implementation and evaluation), learning principles, training methodology, and evaluation criteria as well as various employee development initiatives. Students will be able to effectively report return-on-investment and value added of training initiatives and the impact on overall strategic goal achievement. Prerequisite(s): HRMGT-196.

HRMGT-198 **Credits: 3**

Business Ethics

Through this course, students will explore business ethics and corporate social responsibility in management practices and business activities. Students will review and examine ethical responsibilities and relationships between organizational departments, divisions, business management, and the public. Through analysis of case studies, practical application projects and discussion groups, students will determine and evaluate specific strategies and courses of action that affect the individual and the organization.

HRMGT-199 **Credits: 1**

Human Resources Information Systems

Students learn to use the integrated human resource information components of available software systems to perform human resource database tasks related to administration, performance management, compensation, recruitment and more. In a series of exercises, students process HR information related to groups of employees as these employees move through the application, selection, promotion and retirement phases of employment. Prerequisite(s): HRMGT-193 (minimum grade of C).

HSM – Healthcare Services Management
(Department: 530)

HSM-139 **Credits: 4**

Bioethics, Human Research Practices and Compliance

Learners investigate the Human Research Protection Program (HRPP) to ensure the rights, welfare and privacy of all individuals participating in biomedical and/or behavioral studies. Topics include: foundations and concepts of Institutional Research Board (IRB) practices, legal constructs, operational functions, and documentation practices. Students also will be introduced to quantitative and interpretive research methods, as well as bioethical applications and case studies. Prerequisite(s): Instructor consent required.

HSM-140 **Credits: 3**

Health Unit Coordinator Procedures 1

This course is an introduction to the HUC profession. The course will introduce the student to the environment, communication, management of client information, order, process and transcription of physician's orders in healthcare. Prerequisite(s): Must be admitted to the Healthcare Services

Management (10-530-3.A) or Health Unit Coordinator (30-510-2) program, and instructor consent required.

HSM-141 **Credits: 3**

Health Unit Coordinator Procedures 2

This is a more advanced course that introduces the student to transcription of laboratory and diagnostic orders, interdisciplinary treatment orders and specialty unit orders. Prerequisite(s): Must be admitted to the Healthcare Services Management (10-530-3.A) or Health Unit Coordinator (30-510-2) program, and instructor consent required.

HSM-142 **Credits: 3**

Health Unit Coordinator Clinical

In this course you will apply the concepts and skills of the Health Unit Coordinator in a clinical setting. Prerequisite(s): Must be admitted to the Healthcare Services Management (10-530-3.A) or Health Unit Coordinator (30-510-2) program, and instructor consent required.

HSM-143 **Credits: 3**

Healthcare Quality Management

This course investigates various quality improvement methodology utilized within healthcare organizations to increase patient care outcomes, safety, and satisfaction. Students will explore benchmarking, outcome measures such as Continuous Quality Improvement, Deming's models, Six Sigma, and Lean initiatives. Prerequisite(s): Completion of or currently enrolled in HSM-146. Must be admitted to Healthcare Services Management program (10-530-3, any track) and instructor consent required.

HSM-144 **Credits: 3**

Introduction to the Business of Healthcare

Students are introduced to the business aspects of healthcare through case study/project-based learning. Topics include: organizational culture, leadership styles, managed care, patient education, documentation practices, and reimbursement systems. Prerequisite(s): Admitted to the Healthcare Services Management (10-530-3.A, 10-530-3.B or 10-530-3.C) program, and instructor consent is required.

HSM-145 **Credits: 3**

Healthcare Law, Ethics and Professional Standards

Student will investigate federal/local health-related legislation, HIPAA, Patient Bill of Rights, EMTALA, the Informed Consent process, ethical and professionalism scenarios, as well as service-centered delivery standards and other related topics. Prerequisite(s): Admitted to the Healthcare Services Management (10-530-3) program and instructor consent is required.

HSM-146 **Credits: 4**

Leadership in Healthcare Organizations

This course prepares student to investigate healthcare service leadership within various healthcare organization environments. Topics include leadership styles, policies and procedures, motivation, team work, strategy, organizational behavior, diversity, and effective communication in the workplace. Prerequisite(s): Instructor consent is required to register and must be admitted to the Healthcare Services Management program, any track (10-530-3.A, 10-530-3.B or 10-530-3.C), and completion of or currently enrolled in HSM-143.

HUMSVC – Human Services
(Department: 520)

HUMSVC-101 **Credits: 3**

Introduction to Human Services

The primary focus is to introduce the beginning student to human service concepts and the broad range of occupations, professions and training requirements within the field. Field experiences and volunteer work are required. Prerequisite(s): Completion of or currently enrolled in HUMSVC-144, and admission to the Human Service Associate (10-520-3) program.

HUMSVC-102 **Credits: 3**

Interviewing Skills

Students will practice and refine mastery of effective interviewing skills relevant to a wide range of human service practices. Prerequisite(s): HUMSVC-101, HUMSVC-144.

HUMSVC-103 **Credits: 3**

Group Work Skills

This is a practice-oriented course with a primary focus on developing skills, techniques and strategies utilized in a broad range of human service practice settings. A key component is to develop and demonstrate a workable knowledge base and awareness of the complexity of human behavior in groups. Prerequisite(s): HUMSVC-101, HUMSVC-144.

HUMSVC-104 **Credits: 1**

Field Preparation

Students make formal preparations for their field experience assignment, as well as prepare to secure employment after graduation. Students develop a professional portfolio, practice interview skills, and reinforce their overall employment/work skills. Prerequisite(s): HUMSVC-101, HUMSVC-102, HUMSVC-103, HUMSVC-113, HUMSVC-144, and completion of or currently enrolled in HUMSVC-115.

HUMSVC-106 **Credits: 4**

Advanced Field Experience

Advanced Field Experience must be taken concurrently with HUMSVC-107, Field Experience Seminar. Students are assigned to a community human service agency where they work 20 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-101, HUMSVC-102, HUMSVC-103, HUMSVC-104, HUMSVC-113, HUMSVC-115, and completion of or currently enrolled in HUMSVC-107.

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): HUMSVC-101, HUMSVC-102, HUMSVC-103, HUMSVC-104, HUMSVC-113, HUMSVC-115, HUMSVC-144, and completion of or currently enrolled in HUMSVC-106.

HUMSVC-113 **Credits: 3**

Documentation and Recordkeeping

Students will practice techniques involved with maintaining clinical records, documentation of referrals, staffing and consultations. Prerequisite(s): HUMSVC-101, 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, HUMSVC-113, and completion of or currently enrolled in HUMSVC-104.

HUMSVC-118 **Credits: 3**

Introduction to Gerontology

This introductory course includes a demographic, cultural and ethnic profile of older adults. Major theories about aging are explored, as well as the interrelationships of biological, psychological and social aspects of aging.

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 emphasis 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 Profession
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.

HUMSVC-144 **Credits: 3**
Ethics in the Human Service Professions
This is a survey course for the Human Service Associate major. 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): Completion of or currently enrolled in HUMSVC-101, and admission to the Human Service Associate (10-520-3) program.

HVAC1 – Air Conditioning, Refrigeration, Heating
(Department: 401)

HVAC1-300 **Credits: 4**
Basic Refrigeration/System Operations
Theory and principles of refrigeration, and includes 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 is designed to help the student understand types of compressor, 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 that 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 of 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 that 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 sustainable solar energy in residential hydronic heating. Prerequisite(s): HVAC1-325.

HVAC1-332 **Credits: 2**
Math for Heating, Ventilation, Air Conditioning and Refrigeration Service Technician
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 Technology
(Department: 601)

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.

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
The 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 also are 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, 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.

HVAC2-120 **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, 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
This course is designed to give students 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, 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, 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 together 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 also are explored. Prerequisite(s): HVAC2-114.

HVAC2-148 **Credits: 3**
Heat Pumps
This course is aimed at the servicing and installation of heat pumps. The curriculum provides instruction on equipment and procedures needed to check the heating and cooling performance of the heat pump system. Calculating heat gains and the use of a psychrometric chart are included in this course. 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.

HVAC2-149 **Credits: 1**
HVAC Summer Internship
This course is designed to place students with active HVAC/R contractors in Wisconsin in temporary, summer hire positions. This provides students with the opportunity to apply learned skills to actual jobsite situations. This course is open only to associate degree program students and is subject to prerequisites. A total of 192 hours of on-the-job experience is required to complete this course. Prerequisite(s): HVAC2-109, HVAC2-110, HVAC2-113, HVAC2-114, HVAC2-115, HVAC2-120, and consent of instructor is required.

HVAC2-150 **Credits: 2**
Wiring Diagram Interpretation for HVAC/R
This course is designed to enhance the student's ability to interpret modern wiring diagrams for HVAC/R. The curriculum provides instruction on the usage, design and interpretation of wiring diagrams such as the schematic, pictorial, installation and hybrid. Instruction will include the interpretation of actual equipment wiring diagrams, as well as designing wiring diagrams. Prerequisite(s): HVAC-114 or ELECTY-396 and ELECTY-398.

HYDPNU – Hydraulics Pneumatics
(Department: 419)

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 their 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-336 **Credits: 4**
Fluid Power Circuits
This course begins with instilling an understanding of hydraulic/pneumatic circuits and their schematic symbols. Building on those skills, students then explore electrically/electronically relay logic circuits and their components. Students build skills through written and hands-on lab assignments designed to simulate real-world systems and the skills to install and troubleshoot them.

HYDPNU-338 **Credits: 4**
Mechanical Systems
This course teaches the fundamentals of mechanical transmission systems and allows for the practice of industry-relevant skills including how to operate, install, maintain, troubleshoot and design basic mechanical transmission systems using chains, V-belts, spur gears, bearings and couplings. The installation, operation and applications of laser shaft alignment will be taught.

INDSGN – Interior Design
(Department: 304)

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 the 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. Student 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 will build on the Basic Architectural Drawing coursework and further develop student skills in both manual and computer-aided drawing techniques for interior design. Computer-aided three-dimensional modeling also will be introduced and explored as a method of communicating design. Prerequisite(s): INDSGN-102.

INDSGN-113 **Credits: 3**
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, and create lighting and switching plans. Prerequisite(s): INDSGN-100.

INDSGN-116 **Credits: 3**
Kitchen and Bathroom Design
This course will cover the 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 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 will explore the contract design industry and expose students to basic planning conditions, including planning guides and the ADA. Emphasis will be placed on furniture and material selection and specification. Students will explore industry-specific software. Prerequisite(s): INDSGN-102.

INDSGN-120 **Credits: 1**
Interior Design Internship
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-110 and INTRN-796 (minimum grade of C or P).

INDSGN-122 **Credits: 3**
Styles of Furniture and Architecture
This course will explore the evolution of interior design and the applied arts, including art and architecture. Students will relate political, socioeconomic and demographic influences of each period from antiquity to contemporary style.

INDSGN-124 **Credits: 3**
Advanced Commercial Studio
Course will continue to establish the important role of code compliancy 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 reflected 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
This course will emphasize current issues and topics of concern as it relates to the field of interior design. 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-131 **Credits: 3**
Portfolio Development and Application
This course will prepare 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 works and will participate in a series of mock interviews. Prerequisite(s): INDSGN-110.

INDVTS – Individualized Technical Studies
(Department: 825)

INDVTS-102 **Credits: 3**
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, and 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.

INTP – Interpreter Technician
(Department: 533)

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. This course will be taught in American Sign Language with some additional use of written English rather than spoken English. Five hours of participation in Deaf community events are required outside of class time. Students enrolled in programs other than Interpreter Technician may be able to use this course (and INTP-127) to satisfy elective 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. This course will be taught in American Sign Language with some additional use of written English rather than spoken English. Ten hours of participation in Deaf community events are required outside of class time. Prerequisite(s): INTP-126 (minimum grade of C) or instructor consent.

INTP-128 **Credits: 3**
American Sign Language 3
This course is a continuation of American Sign Language 2. It is designed to build daily conversational skills and to increase cultural awareness and sensitivity. Students will refine grammatical skills and practice sentence types in guided ASL conversations and formal presentations. This course will be taught in American Sign Language with some additional use of written English rather than spoken English. Fifteen hours of participation in Deaf community events are required outside of class time. Prerequisite(s): INTP-127 (minimum grade of C) or instructor consent.

INTP-129 **Credits: 3**
American Sign Language 4
This course is a continuation of American Sign Language 3 and is designed to broaden the topics students are able to discuss in ASL. News events, daily lives and social activities will be discussed and formal presentations will be made. Conversational proficiency is expected by the end of this course. This course will be taught in American Sign Language with some additional use of written English rather than spoken English. Twenty hours of participation in Deaf community events are required outside of class time. Prerequisite(s): INTP-128 (minimum grade of C) or instructor consent.

IT – Information Technology (Department: 107)

IT-107 **Credits: 3**

Social Networking and Business

This course is an introduction to social media, communication and collaboration tools utilized professionally in a business environment. Students will learn to set up, use, and support these tools. Emphasis will be placed on proper business communication, development of a personal résumé, and the implementation of a professional persona using social media that supports work within the information technology field.

ITDEV – IT Programming/ Development (Department: 152)

ITDEV-110 **Credits: 3**

Introduction to Object-Oriented Programming Using C#

This course introduces the fundamental concepts of programming from an object-oriented perspective. Topics include class design, simple data types, control structures, storage allocation, scope, and simple data structures (arrays). Students will develop algorithms to solve programming problems and use debugging techniques to test their solutions. The course emphasizes good software engineering principles while developing fundamental programming skills in the context of a language that supports the object-oriented paradigm. Emphasis will be placed on class design, implementation and problem-solving. MATC strongly recommends that students take this course concurrently with ITDEV-117 Logic and Problem-Solving. Prerequisite(s): ITDEV-117.

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. Prerequisite(s): ITDEV-110.

ITDEV-117 **Credits: 3**

Logic and Problem-Solving

This course presents a formal approach to logical thinking and problem-solving using mathematical and programming logic 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. This course will teach these mathematical and programming logic structures in context with fundamental object-oriented programming principles. MATC strongly recommends that students take this course concurrently with ITDEV-110 Introduction to Object-Oriented Programming.

ITDEV-140 **Credits: 3**

Programming With Java

Using the latest Java SE Development Kit, students will learn and apply Java programming language to create both console and graphical user interface applications. Topics explored include data types, decisions, loops, methods, data structures, I/O, exceptions, object-oriented skills, user interfaces, and the use of relational databases. Successful completion of ITDEV-110 prior to enrollment in the class is required or instructor's permission. Prerequisite(s): ITDEV-110.

ITDEV-149 **Credits: 3**

Data Reporting

Introduces database querying and reporting using leading tools and frameworks. Learners will design, create and publish reports that access diverse datasets using a variety of tools including Crystal Reports and Microsoft SQL Reporting Services. Additional topics include SQL, report distribution, data analysis, data security and ethical handling of sensitive data.

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).

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-115, or have the equivalent skills, prior to enrollment in this course. Prerequisite(s): ITDEV-121, ITDEV-140 or ITDEV-185.

ITDEV-160 **Credits: 3**

Web Programming With Scripts (JavaScript)

This course teaches students how to build websites that interact with the user by means of client-side scripts. HTML and CSS techniques are used for page formatting. Programming in JavaScript with jQuery is used to create interactive webpages.

ITDEV-161 **Credits: 3**

Web Programming 1

This course covers interactive web programming using AJAX, APIs, PHP, MySQL and Angular JS. Students publish their pages to a web server. Prerequisite(s): ITDEV-160.

ITDEV-162 **Credits: 3**

Client/Server and eCommerce 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-177, or have the equivalent skills, prior to enrollment in this course.

ITDEV-164 **Credits: 3**

Web Programming 2

The student will create websites that use more advanced properties of the ASP.NET tools used in ITDEV-162. The student will learn how to deploy and set up websites using the Internet Information Server. Advanced material in PHP also will be covered. Prerequisite(s): ITDEV-161.

ITDEV-177 **Credits: 3**

Systems Analysis and Design

This course will teach techniques and approaches to develop new software systems efficiently and effectively. It will introduce the phases that a project must undergo from inception to completion as well as the various methodologies that can be employed to properly manage a project. It also will identify the skills and team members required to successfully develop and launch the new system. Prerequisite(s): ITDEV-150.

ITDEV-181 **Credits: 3**

Mobile Application Development

Students will learn how to create applications for mobile devices expanding upon 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. Prerequisite(s): ITDEV-140.

ITDEV-182 **Credits: 3**

Hybrid Mobile App Development

This course continues to focus on Android Mobile technologies introduced in ITDEV-181. Students will create a mobile app from the conceptual idea to publishing on the Google Play store. They will design, using an appropriate design pattern, code and publish the mobile app. Advanced mobile technologies such as multi-threading, accessibility, localization, camera, Google maps and cloud-base services will be explored. Prerequisite(s): ITDEV-181.

ITDEV-184 **Credits: 3**
iPhone and iOS Mobile App Development
Students will learn the basics of the iPhone SKD including user interface design, multiview applications, table views, navigation controllers, data persistence, drawing, taps and touches, using libraries and localization. Students will develop several basic iPhone applications that provide the foundations of developing more advanced applications. Students will learn Objective-C and Swift programming languages while creating applications for Mac OS interfaces. MATC strongly recommends that students complete ITDEV-185, or have prior Mac OS experience, before enrolling in this course.

ITDEV-185 **Credits: 3**
Advanced OO Programming
This course is the third of four-course sequence focusing on the object-oriented programming paradigm. The focus of this course will be the C programming languages (C, C++ and Objective-C). Students see the similarities and differences of popular procedural and OOP languages while problem-solving. Emphasis is on algorithms, data structure and software engineering. Topics include header files, pointer data types, encapsulation, abstraction, inheritance and polymorphism as well as introduction to design patterns. Prerequisite(s): ITDEV-115.

ITDEV-198 **Credits: 1**
Internship
A cooperative training program involving actual work experience. Students obtain a position at an approved work station and work under the supervision of a teacher-coordinator. Prerequisite(s): INTRN-796.

ITDEV-199 **Credits: 2**
Integrated Project
The Integrated Project course is a capstone project that reflects the student's culminating experience in the program. In this course, students 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 own discipline through the implementation, demonstration and documentation of the capstone project. Students evaluate their learning based on the program's specific learning outcomes. MATC strongly recommends that students take this course concurrently with ITDEV-I98.

ITNET – IT Networking
(Department: 150)

ITNET-101 **Credits: 3**
Network Communications (Network+)
Network Communications 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 some hands-on exercises, demonstration and discussion, students will develop an understanding of what is involved in basic network design, network management, security and troubleshooting.

ITNET-110 **Credits: 3**
Managing Windows Desktop (Client) Operating System
This course provides preparation for the Microsoft Certified Solutions Associate (MCSA) Windows 10 certification (70-697 Configuring Windows Devices and 70-698 Installing and Configuring Windows 10). Students are introduced to the Microsoft Windows 10 operating system through lectures, demonstrations, discussions and hands-on lab activities. Topics include: installation, configuration, hardware and application management, troubleshooting, networking, and securing Windows 10.

ITNET-111 **Credits: 3**
Microsoft Server Administration 2
This course provides certification exam preparation for Windows Server 2016 (70-742). Topics include: installation, configuration, management and maintenance of Active Directory Domain Services (AD OS); management of group policies; and various other Active Directory and server services. Through discussions, demonstrations and hands-on labs, ITNET-111 advances the content presented in ITNET-110 and ITNET-112. MATC strongly recommends that students complete ITNET-112, or have equivalent skills, prior to enrollment in this course.

ITNET-112 **Credits: 3**
Microsoft Server Administration 1
This course provides certification exam preparation for Windows Server 2016 (70-740). Topics include: server installation, storage, configuration and management; file and share access; print and document services; Active Directory; Group Policy; DNS; DHCP; and various OS features available in Windows Server 2016. Through discussions, demonstrations and hands-on labs, ITNET-112 advances the content presented in ITNET-110. MATC strongly recommends that students complete ITNET-110, or have equivalent skills, prior to enrollment in this course.

ITNET-131 **Credits: 3**
Introduction to Networks (Cisco 1)
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.

ITNET-132 **Credits: 3**
Routing and Switching Essentials (Cisco 2)
This is the second of four classes designed to provide students with classroom and laboratory experience in networking technology. Instruction includes Ethernet, TCP/IP, EIGRP, OSPF and the Cisco lOS. Emphasis is placed on router and switch configuration. MATC strongly recommends that students complete ITNET-131, or have the equivalent skills, prior to enrollment in this course. Prerequisite(s): ITNET-131.

ITNET-133 **Credits: 3**
Scaling Networks (Cisco 3)
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 VLSM, EIGRP, OSPF, Ethernet Switching, VLANs and Rapid Spanning Tree Protocol (STP). Prerequisite(s): ITNET-132.

ITNET-134 **Credits: 3**
Connecting Networks (Cisco 4)
This is the fourth and final in a series of classes designed to provide students with classroom and laboratory experience in networking technology. The focus of this course continues with objectives from the CCNA exam. Subjects include Virtual Private Network (VPN), Broadband technologies, PPP and WAN concepts. MATC strongly recommends that students complete ITNET-133, or have the equivalent skills, prior to enrollment in this course.

ITNET-157 **Credits: 3**
Emerging Network Technologies
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. This course is required to sit for the VMware Certified Professional (VCP) examination. Students should be concurrently enrolled in (or have completed) ITNET-111 and ITNET-134 prior to taking this course.

ITNET-159 **Credits: 3**
Cloud Infrastructure Services
Cloud Infrastructure Services 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.

ITNET-161 **Credits: 2**
Linux Overview
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.

ITNET-198 **Credits: 1**
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 student complete or enroll in ITNET-134, or have the equivalent skills, prior to enrollment in this course. Prerequisite(s): INTRN-796 (minimum grade of C or P).

ITNET-199 **Credits: 2**
Integrated Project – Network Specialist
The Integrated Project course is a capstone project that reflects the student's culminating experience in their program. In this course, students 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 through the implementation, demonstration and documentation of a capstone project; 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 in this course.

ITSEC – IT Information System Security (Department: 150)

ITSEC-106 **Credits: 1**
Securing Windows Client
Through hands-on activities, students will cover how to enhance security protection on Windows clients. This includes creating security policies and templates, auditing, authentication, software restrictions, encryption, and best practices on hardening the Windows client operating system. This class provides good background material for the security content of Microsoft's client certification exam. It is recommended that students enrolling in this class have either completed ITNET-104 Windows OS Fundamentals or have a working knowledge of the Windows client operating system.

ITSEC-120 **Credits: 3**
Security Policies and Procedures
In this course, students learn how to develop a security vision and effective polices to protect information, people and property. Ethics versus law issues in information systems are addressed. Examining emerging technologies, such as loS, cloud technologies, security containers, and smart-building security devices, are also covered in this class. MATC strongly recommends that students take ITNET-131 (or ITNET-101) and ITSEC-124 before taking this course, 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-124, or have the equivalent skills, prior to 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-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 Cisco Secure ACS and TACACS+ and RADIUS. Basic firewall configuration and IDS/IPS concepts also are covered. MATC strongly recommends that students complete ITSEC-124, or have the equivalent skills, prior to enrollment in this course.

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 also is 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 also is 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 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 Air connect and 3Com AirConnect 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-151 **Credits: 3**
IT – Auditing
In this course, all six domains of the Certified Information Systems Auditor (CISA) exam is 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 students complete ITSEC-114, or have the equivalent skills, prior to 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-156 **Credits: 3**
Mobile Devices Forensics
In this course, 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 use in cellular evidence. Students will learn the ability to utilize forensics tools to conduct analysis of mobile devices; in addition, to be able to create evidence case report. Prerequisite(s): ITSEC-126.

ITSEC-164 **Credits: 1**
Packet Analysis (Wireshark/Nmap)
In this course, students will be introduced to Wireshark and Nmap. Wireshark is a tool used for troubleshooting network problems, where 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 also will 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. Addresses topics such as data hiding, encryption, advanced Windows registry, steganography and password recovery. Prerequisite(s): ITSEC-126.

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-191 **Credits: 1**
Information Systems Security Internship 2
Students will explore the field of professional computing, information technology, and information systems security by working in a real work environment and applying the skills gained from previously taken courses from the information systems security program. The practical work experience will be gained under the supervision of an information technology professional supervisor in day-to-day, onsite technical work. Prerequisite(s): INTRN-796 (minimum grade of C or P).

ITSEC-194 **Credits: 1**
Security Project Implementation
This course helps students gain in-demand skills. 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.

ITSUP – IT Support
(Department: 154)

ITSUP-101 **Credits: 3**
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 the latest release of Microsoft Windows and Office will introduce you to exciting, new features of next-generation consumer and enterprise software. The course is a combination of lecture discussion and hands-on lab assignments.

ITSUP-102 **Credits: 3**
CompTIA A+ Essentials and IT Technician
This course prepares students for the CompTIA A+ Certification exam. Students will work on 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 multithreading, UEFI, disk and memory management, virtualization, mobile devices, laptops, OS software updates and optimization, managing device drivers and virus protection.

ITSUP-103 **Credits: 1**
IT Documentation
Designing effective documents and visuals in the IT world is a key objective of this course. Whether it is Microsoft, Google or other cloud resources, students will determine the best tool to produce quality, technical support documentation. Establishing the purpose of the communication, identifying the audience, and then creating a well-written and illustrated response will be addressed.

ITSUP-108 **Credits: 3**
Enterprise Desktop Support Technician
This course prepares students for Microsoft Enterprise Desktop Support Technician (MCITP 70-65) 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-109 **Credits: 3**
Microsoft Office for IT Professionals
This course prepares students to effectively utilize Microsoft Office in IT organization. Students will learn features of the latest version of Microsoft Excel, Microsoft Word,

Microsoft Access, OneNote and PowerPoint through hands-on labs, comprehensive projects and business scenarios.

ITSUP-110 **Credits: 3**
Supporting Microsoft Windows
This course prepares students to pass Microsoft MCP, MCSA and MCSE Certification Exam 70-688. Students learn how to effectively manage and maintain current version of Microsoft Windows enterprise system. Through hands-on labs, students work on OS installation, configuration, remote access, authentication, authorization and security configuration, support of desktop apps and much more.

ITSUP-111 **Credits: 3**
CompTIA A+ Software Support
This course prepares students for the CompTIA A+ Software Certification exam. Students will work on hands-on labs to install and configure operating systems including Windows, iOS, Android, Apple OS X and Linux. They also will learn security, the fundamentals of cloud computing and operational procedures.

ITSUP-140 **Credits: 3**
Support Center Analyst (HDI-SCA, HDI-DST, ITIL)
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 customer interactions.

ITSUP-150 **Credits: 3**
Mobile Device Repair and Maintenance
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, replace batteries, LCD, broken lens, cameras and touch screens. Course also teaches students the concepts of data transfer and recovery, jailbreaking and cellphone locking and unlocking.

ITSUP-152 **Credits: 3**
Apple OSX Certified Support Professional (ACSP)
This hands-on course provides an in-depth exploration of troubleshooting of the Apple OS X 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 OS X Operating system. Course covers labs on installation, setup and configuration, OS X Recovery, software updates, file system, File Vault, 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**
Mobile Device Administration
This hands-on course prepares students for the CompTIA 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 also will learn how 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-155 **Credits: 3**
IT Career Skills
This course prepares students for careers in information technology. Students learn about a variety of positions available in IT computer support, different career paths in IT, how to prepare a quality résumé, search for the job and apply for a position, go through the interview process, complete a background check and secure the employment. Students participate in mock interviews and learn how to use social media to increase their chances to get hired.

ITSUP-177 **Credits: 3**
Introduction to IT Projects, Teamwork and Self-Management
This course prepares students for teamwork and working on IT projects. Students learn about a variety of project concepts and learn how to work with colleagues, team members and stakeholders. Concept of self-management will be introduced to help students organize their work and improve their soft skills. Students will learn the concept of "return on investment" and "value delivery" for the organization. Students participate in group exercises, create and execute project plans, and work together on team activities.

ITSUP-197 **Credits: 3**
Business Data Analytics
Through labs and hands-on exercises, students will learn about business data analytics. Students will learn to report, inspect, clean, transform and model business data with the goal of discovering useful information, suggesting conclusions, and supporting organizational decision-making.

ITSUP-198 **Credits: 1**
Computer Support Specialist Internship
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 specialist support activities, configure and install new software, and troubleshoot and solve issues with hardware, OS and applications, networks and virtual setups and configurations. Prerequisite(s): INTRN-796 (minimum grade of C or P).

ITSUP-199 **Credits: 1**
Integrated Project – Computer Support Specialist
The integrated project course is a capstone project that reflects student's culminating experience in the IT Computer Support Specialist program. In this course, students integrate their knowledge and skills in IT by working on the final project, demonstrating core ability skills and displaying overall comprehension of the discipline.

LOGMGT – Logistics Transportation/Materials Management
(Department: 182)

LOGMGT-105 **Credits: 3**
Enterprise Resource Planning
This course will provide the fundamentals of enterprise resource planning (ERP) systems concepts, and the importance of integrated information systems in an organization. The focus of this course is on illustrating procurement, production, and sales business processes using ERP software. Students will receive application experience utilizing an SAP (Systems, Applications and Products) database.

LOGMGT-106 **Credits: 3**
eCommerce Logistics
The continued double-digit growth of ecommerce is not solely a matter of retailers readjusting and getting smarter about their products and last-mile shipping strategies. In fact, the impact of digital commerce and the subsequent challenge of omni-channel fulfillment cuts across every part of the organization. This course will observe supply chain management through the lens of retail and ecommerce. Students will investigate emerging logistics strategies, tools and technologies that enable order fulfillment in the rapidly evolving ecommerce space. Because satisfied customers lead to return visits and increased sales, the fundamental lesson of this course will reveal how choices at the beginning of the retail value chain affect service aspects at the end of the logistics chain.

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 encountered in manufacturing management. Tools and techniques for solving production process problems are presented with an emphasis on quality and productivity.

LOGMGT-164 **Credits: 3**
Supply Chain Management
This course provides the student with an overview to supply chain management. Topics covered in the course include transportation, distribution, customer relationship management, supplier management, forecasting, Just In Time, inventory management, Total Quality Management, and facilities management.

LOGMGT-170 **Credits: 3**
Procurement
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.

LOGMGT-184 **Credits: 3**
International Logistics
In the management of international logistics, both import and export are studied. Attention is given to the data necessary for accurate preparation of export documentations. Management and selection of international transportation modes and associated regulations are explained.

LOGMGT-190 **Credits: 3**
Logistics
This course provides an understanding of the key logistics concepts and the issues affecting the movement and storage of goods. Particular emphasis will be placed on providing a broad and general exposure to business logistics. This will include the development of a basic understanding of the concepts and techniques important to analyzing business logistics problems. The course also will examine how the various logistics activities are related to each other and other functional areas within an organization. Finally, the course will introduce management and control techniques that are critical in the area of logistics. The course is designed for students who have had little or no previous coursework or professional experience in logistics.

LOGMGT-191 **Credits: 3**
Integrated Supply Chain Management Capstone
This course will provide the student with hands-on, cumulative application experience. Students will use the knowledge gained in the previous six courses within the Supply Chain Management associate degree program to develop operational strategies for business applications. Simulations and industry projects will be utilized in this capstone course. Prerequisite(s): LOGMGT-105, LOGMGT-144, LOGMGT-146, LOGMGT-164, LOGMGT-170, LOGMGT-184, LOGMGT-190.

MACHTL – Machine Tool
(Department: 420)

MACHTL-300 **Credits: 3**
Engine Lathe 1 (Turning)
This course offers basic instruction for turning operations on an engine lathe. Instruction is based on Machining Level 1 skill standards established by the National Institute for Metalworking Skills. Instruction includes using basic hand tools, layout, performing bench work, part inspection, safety and job organization. Detailed information will be given on lathe setup, controls, tooling, workholding and general operational guidelines. Upon completion of the course, the student will be able to set up and operate an engine lathe and produce parts that require basic turning operations in a chuck, as well as basic turning between centers.

MACHTL-301 **Credits: 3**
Engine Lathe 2 (Turning)
This course offers more advanced instruction for performing chucking operations on an engine lathe. 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 turning procedures will be presented. The student will learn to set up and operate an engine lathe and produce parts that are more advanced. Instruction also will be provided for using basic hand tools, performing bench work and off-hand grinding on a pedestal grinder. Prerequisite(s): MACHTL-300.

MACHTL-304 **Credits: 1**
Introduction to CNC Programming
Introduction to CNC Programming prepares the student to write basic programs for CNC turning and CNC vertical milling machines. Application of the Cartesian coordinates system is taught along with programming format. The CNC vertical milling center students will write basic programs using linear and rapid moves, circular interpolation, geometry offsets and a variety of canned cycles. CNC turning portion of the course will require the student to write programs that include linear and rapid moves, circular interpolation with tool nose radius compensation, canned cycles and threading cycles. Prerequisite(s): Completion of or currently enrolled in MACHTL-320 and MACHTL-322.

MACHTL-309 **Credits: 3**
Manual Vertical Milling Machine 1
This course offers basic instruction for machine operations on a manual vertical milling machine. Instruction is based on Machining Level 1 skill standards established by the National Institute for Metalworking Skills. Items of instruction will include using basic hand tools, part layout, part inspection, bench work, safety and job organization. Detailed information will be given on milling machine setup, controls, tooling, workholding and general operational guidelines. Upon completion of the course, the student will be able to set up and operate a manual vertical milling machine producing square parts with drilled and tapped holes. Students also will learn how to set up and operate a vertical band saw and a cut off saw. Additionally, students will perform off-hand grinding on a pedestal grinder.

MACHTL-310 **Credits: 3**
Manual Vertical Milling Machine 2
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 also will learn how to set up and perform multiple operations on a drill press. Prerequisite(s): MACHTL-309.

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-301.

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 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 workholding. The student will learn a variety of methods for squaring blocks. Slot grinding and angular grinding also will 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. Detailed information will be given on the screw machine setup, controls, tooling, workholding and general 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 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 box milling, knurling internal and external threading 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. Prerequisite(s): MACHTL-347.

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 provides the student with criteria for proper instrument selection based on part print requirements.

MACHTL-361 **Credits: 3**
Multiple Spindle Automatic Screw Machine 1
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, workholding, 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-348.

MACHTL-362 **Credits: 3**
Multiple Spindle Automatic Screw Machine 2
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.

MACHTL-367 **Credits: 1**
Machine Tool Technology
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 workholding are discussed. The student also will learn about different materials, machine ability and cutting tool selection.

MACHTL-371 **Credits: 4**
CNC Swiss Turning Center 1
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, workholding 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.

MACHTL-372 **Credits: 4**
CNC Swiss Turning Center 2
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, set up and operate a CNC automatic turning machine and produce parts that have complex operations such as boring, grooving and canned cycles. Prerequisite(s): MACHTL-371.

MACHTL-373 **Credits: 4**
CNC Swiss Turning Center 3
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. Prerequisite(s): MACHTL-372.

MACHTL-384 **Credits: 1**
Machine Trades Mathematics 1
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.

MACHTL-385 **Credits: 1**
Machine Trades Mathematics 2
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.

MACHTL-386 **Credits: 1**
Machine Trades Mathematics 3
This course presents an introduction to the trigonometric solution of shop problems. The basic right triangle functions and oblique triangle laws of sine and cosine are used to solve problems. Prerequisite(s): MACHTL-385.

MACHTL-387 **Credits: 1**
Machine Trades Mathematics 4
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.

MACHTL-391 **Credits: 1**
Quality Control
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) also is presented. Prerequisite(s): MACHTL-360.

MASON – Bricklaying and Masonry (Department: 408)

MASON-190 **Credits: 1**
Current Topics in Masonry
This course explores current topics and trends in the masonry and bricklaying fields. Students may participate in hands-on demonstration of new technology, site visits to manufacturers and suppliers to the trade, and other topics that provide the student a well-rounded view of the masonry and bricklaying trade and innovative construction methods.

MASON-300 **Credits: 5**
Fundamental Bricklaying
This course provides training in laying bricks 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. Prerequisite(s): Must be admitted to the Bricklaying and Masonry (30-408-2) program.

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 on developing masonry skills to accepted trade standards. Prerequisite(s): Completion of or currently enrolled in MASON-300, and admitted to the Bricklaying and Masonry (30-408-2) program.

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 is practiced. 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 taught as it relates to masonry. Prerequisite(s): Must be admitted to the Bricklaying and Masonry (30-408-2) program.

MASON-310 **Credits: 5**
Advanced Masonry Techniques 2
A hands-on course covering construction of arches, brick panels and stonework for various bonds and arches. Practical work is given in layout for arches, panels and stonework. The cutting of brick and stone is practiced. Glass block and thin veneer techniques are taught. Prerequisite(s): MASON-306.

MASON-356 **Credits: 2**
Methods 1 – Fundamentals
This is a basic technical course in the practice and methods of the masonry trade. Through analysis, demonstration and discussion, various operations used in the trade are studied. Prerequisite(s): Completion of or currently enrolled in MASON-300, and must be admitted to the Bricklaying and Masonry (30-408-2) program.

MASON-357 **Credits: 2**
Methods 2 – Advanced
Through analysis, demonstration and discussion, various phases of work, which are part of the masonry trade, are studied to understand the entire scope of masonry. Arches, fireplaces, grouting and flashing techniques, along with hot- and cold-weather masonry construction, are studied. Prerequisite(s): MASON-356.

MASON-381 **Credits: 1**
Mathematics for Bricklayers 2
Prepared specifically for bricklayers and masons, this course includes mathematics of linear, square and cubic measurements; weights; application of formulas; and organizing procedures in determining qualities of materials. Prerequisite(s): CONSTR-380.

MASON-387 **Credits: 2**
Blueprint Reading for Masons
Students are trained to visualize and interpret evaluations, plan views, sections and details from blueprints, and translate them into practical situations. Interpretations of symbols, conventions and abbreviations are taught.

MATH – Mathematics (Department: 804)

MATH-107 **Credits: 3**
College Mathematics
This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include: finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between U.S. customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. Prerequisite(s): MATGEN-109 (minimum grade of C) or satisfactory Math placement test score.

MATH-113 **Credits: 3**
College Technical Mathematics 1A (Applied Algebra)
Topics include: solving linear, quadratic and rational equations; graphing; formula rearrangement; solving systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on 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. Prerequisite(s): MATGEN-110 (minimum grade of C) or satisfactory placement test score.

MATH-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-113 (minimum grade of C).

MATH-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; trigonometric functions on the unit circle; and operations on polynomials. Emphasis will be on the application of skills to technical problems. This course is the equivalent of successful completion of College Technical Mathematics 1A and College Technical Mathematics 1B. 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 (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 (minimum grade of C).

MATH-123 **Credits: 3**

Math With Business Applications

This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes. Prerequisite(s): MATGEN-109 (minimum grade of C) or satisfactory MATC placement test score.

MATH-134 **Credits: 3**

Mathematical Reasoning

All college students, regardless of their college major, need to be able to make reasonable decisions about fiscal, environmental, and health issues that require quantitative reasoning skills. An activity-based approach is used to explore numerical relationships, graphs, proportional relationships, algebraic reasoning, and problem solving using linear, exponential and other mathematical models. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of contexts. This course may be used as the first of a two-part sequence that ends with Quantitative Reasoning as the capstone general education math requirement.

MATH-135 **Credits: 3**

Quantitative Reasoning

This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction and interpretation of graphs; descriptive statistics; geometry and spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.

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, combinatories and the binomial theorem. Prerequisite(s): MATH-116 or MATH-200 (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 (minimum grade of 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, nonlinear systems, sequences, series and probability. Course includes use of a graphing calculator. Prerequisite(s): MATH-200 (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 (minimum grade of C).

MATH-211 **Credits: 4**

Survey in Calculus and Analytic Geometry

A one-semester survey with applications to business administration, economics, and non-physical sciences. Topics include coordinate systems, equations of curves, limits, differentiation, integration, and applications. May not be used as a prerequisite for MATH-232. Prerequisite(s): MATH-200.

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-116 or MATH-200 (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 (minimum grade of C) or four years of high school math including two years of algebra, one year of geometry, and one semester of trigonometry (minimum grade of B) or a satisfactory score on MATC placement test.

MATH-232 **Credits: 5**
Analytic Geometry and Calculus 2
This course is a continuation of MATH-231. Topics include integration applications and techniques, improper integrals, indeterminate forms, infinite series, Taylor polynomials, conics, parametric equations, and polar equations. Use of a graphing calculator is required. Prerequisite(s): MATH-231 (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 (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-260 **Credits: 3**
Basic Statistics
Studies appropriate statistical techniques for the systematic collection, presentation, analysis and interpretation of data. Studies statistical inference including sampling techniques, confidence intervals, type I and II errors, hypothesis testing and results interpretation. Also includes descriptive statistics, basic probability theory, the Central Limit Theorem; probability distributions, linear regression, correlation and sample sizes. May require use of a graphing calculator or computer software. Lecture. Prerequisite(s): MATH-200 (minimum grade of C) or satisfactory MATC placement test score.

MATH-275 **Credits: 3**
Math Exploration for Elementary Teachers 1
This course is intended for students enrolled in the Teacher Education Track (TET). Topics include theory of arithmetic of whole numbers, fractions and decimals. Also includes an introduction to algebra, estimation and problem-solving strategies. Prerequisite(s): MATH-134.

MATH-276 **Credits: 3**
Math Explorations for Elementary Teachers 2
A continuation of MATH-275 – geometry, statistics and probability. Prerequisite(s): MATH-275 (minimum grade of C).

MATH-304 **Credits: 1**
Math Principles 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.

MATH-308 **Credits: 2**
Math for Industrial Applications 1
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. Prerequisite(s): Satisfactory math placement scores are required.

MATRLS – Materials Technology (Department: 613)

MATRLS-102 **Credits: 3**
Material Testing
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-105 **Credits: 2**
Statistical Process Control
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 **Credits: 2**
Principles of Metallography
This lab/lecture course studies the microstructures of common ferrous alloys (steels and cast irons) and their relationship to chemical composition, thermal cycles, and mechanical properties. Phase diagrams are used to understand microstructures. Lab methods covered include sample preparation, microscopic and macroscopic examination, and photography. Prerequisite(s): MATRLS-151.

MATRLS-110 **Credits: 2**
Fundamentals of Heat Treatment of Metals
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. Lab work also includes hardness testing and some metallography.

MATRLS-151 **Credits: 3**
Metallurgy and Material Science
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.

MCDESG – Mechanical Design Technology (Department: 606)

MCDESG-102 **Credits: 3**
Technical Drafting 1
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.

MCDESG-104 **Credits: 3**
Technical Drafting 2 With CAD
This course uses 2D and 3D CAD to introduce thread terminology, tolerances and fits, secondary auxiliary views, structural steel, and weldments. The relationship between parts is explored through assemblies created from downloaded components and student created models. Prerequisite(s): MCDESG-102, and completion of or currently enrolled in MCDESG-114.

MCDESG-106 **Credits: 3**
Advanced Engineering Graphics
This course focuses on advanced engineering graphics concepts utilizing SolidWorks. Instruction includes advanced detailing of parts and assemblies bill of materials, parametric equations, tables and spreadsheets. This course will emphasize GD&T in the relationship between parts and fits calculations between mating parts such as gears, bushings, keys, retaining rings and fasteners. Prerequisite(s): CIVIL-105, MCDESG-104, MCDESG-114.

MCDESG-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): MCDESG-106, MCDESG-114.

MCDESG-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 also are introduced.

MCDESG-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): CIVIL-105, MCDESG-106, MCDESG-130.

MCDESG-118 **Credits: 3**
Kinematics
This course covers the displacement, velocity and acceleration of four bar linkages, slider-cranks, crank-shapers and compound mechanisms using graphical and analytical methods. Also covered are cam displacement diagrams, profiles, gear trains and epicyclics. Prerequisite(s): CIVIL-105, MCDESG-104 and MATH-116 or MATH-202, and completion of or currently enrolled in MCDESG-106.

MCDESG-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.

MCDESG-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): MCDESG-114.

MCDESG-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 select their own project and define the scope, the path of the completion of the projects, perform necessary computations and complete all working drawings. Prerequisite(s): MCDESG-106, MCDESG-114, MCDESG-130, and completion of or currently enrolled in MCDESG-116.

MCDESG-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 also are combined using Mohr's circle. Prerequisite(s): MCDESG-160.

MCDESG-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 also are introduced.

MCDESG-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): MCDESG-133.

MCDESG-135 **Credits: 2**
PTC Creo (Pro/E) 1
This course introduces parametric solid modeling using PTC Creo (Pro/E). Students are introduced to modeling skills for creating parts, assemblies, detailed drawings and rapid prototyping techniques.

MCDESG-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): MCDESG-135.

MCDESG-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): Completion of or currently enrolled in MATH-116 or MATH-202.

MCDESG-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.

MCDESG-163 **Credits: 2**
Machining Processes
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 – Mechanical and Computer Drafting
(Department: 421)

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-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 representations of common machine processes, special forms of dimensioning, sections and other advanced drafting and design principles. Prerequisite(s): MDRAFT-385.

MEDAST – Medical Assistant
(Department: 509)

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): Completion of or currently enrolled in HEALTH-107. Admission to Medical Assistant (31-509-1) program.

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 and must be admitted to the Medical Assistant (31-509-1) program.

MEDAST-303 **Credits: 2**
Medical Assistant Lab Procedures 1
Introduces medical assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform Clinical Laboratory Improvement Amendment (CLIA) waived routine laboratory procedures commonly performed in the ambulatory care setting. Students follow laboratory safety requirements and federal regulations while performing specimen collection and processing, microbiology and urinalysis testing. Prerequisite(s): Admission to the Medical Assistant (31-509-1) 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 and must be admitted to the Medical Assistant (31-509-1) program.

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): CLABT-303 or MEDAST-303.

MEDAST-306 **Credits: 3**
Medical Assistant Clinical Procedures 2
Prepares medical assistant students to perform patient care skills in the medical office setting. Students perform clinical procedures including administering medications, performing an electrocardiogram, assisting with respiratory testing, coaching patients, and assisting with emergency situations in an ambulatory care setting. Students learn preventive care and principles of nutrition. Prerequisite(s): MEDAST-304.

MEDAST-307 **Credits: 2**
Medical Office Insurance and Finance
Introduces medical assistant 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 and must be admitted to the Medical Assistant (31-509-1) program.

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): Must be admitted to Medical Assistant (31-509-1) or Medical Interpreter (30-538-1) program.

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-304, MEDAST-306, MEDAST-303 or CLABT-303; and completion of or currently enrolled in MEDAST-305, MEDAST-307 and MEDAST-309.

MEDINT – Medical Interpreting (Department: 538)

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: 3**
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 also are examined. Prerequisite(s): Dual language proficiency (English/Spanish).

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 (30-538-1) program.

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-106 **Credits: 3**
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 medicolegal documents, and use sources available to medical translators. Prerequisite(s): Dual language proficiency (English/Spanish).

MEDINT-107 **Credits: 5**
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. Prerequisite(s): Dual language proficiency (English/Spanish).

MEDINT-108 **Credits: 3**
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. Prerequisite(s): Dual language proficiency (English/Spanish).

MEDINT-110 **Credits: 3**
Applied Medical Interpretation 2
Students 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: 3**
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 languages. Prerequisite(s): Admission to the Medical Interpreter (31-538-1) program.

MEET – Meeting and Event Planning (Department: 109)

MEET-116 **Credits: 2**

Fundamentals of Green Meetings

This course provides students with a solid foundation of what is a green meeting, commonly used terminology, and how to execute a socially responsible and environmentally responsible meeting or event. Through a green lens, students will explore core strategies and principles in planning a green meeting. Further focus includes green tools and resources available to plan a green meeting.

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-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. Prerequisite(s): MEET-180, MEET-181.

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 also will develop a housing process by creating rooming lists, coordinating the housing logistics, and managing sleeping guest rooms from blocks. Prerequisite(s): MEET-181.

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 nonprofit 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. Prerequisite(s): MEET-151.

MEET-184 **Credits: 3**

Risk Management and Crisis Planning

This course focuses on the art and science of negotiations, crisis planning and risk management, and contract and 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. Prerequisite(s): MEET-180.

MFGMNT – Manufacturing Maintenance (Department: 462)

MFGMNT-332 **Credits: 2**

Rigging and Lifting

This system teaches how to safely move loads of different shapes and sizes using a variety of methods. Also, will teach additional types of rigging skills including equipment movement, wire mesh slings, synthetic slings, knots, load turning, and cranes. This course includes additional hoists, slings, loads, student learning materials for theory and lab. This course also covers the operation, function and maintenance of wire mesh slings and fiber ropes, load movement, and rigging knots. Proper rigging techniques are vital for efficient movement of loads and workers' safety.

MFGMNT-352 **Credits: 2**

Mechanical Drives 1

Mechanical drives introduces mechanical systems and develops fundamental knowledge of mechanical systems and practices. Covers basic safety, installation, key fasteners, power transmission systems, V-belt drives, chain drives, spur gear drives, and multiple shaft drives. Topics covered include learning how to select, install, adjust, troubleshoot and repair a range of mechanical systems that are commonly found in both automated and manual machines used in every industry around the world.

MFGMNT-353 **Credits: 2**

Mechanical Drives 2

Mechanical Drives 2 covers heavy duty V-belt drives including conventional, multiple, wedge, and variable speed V-belt drives. This course describes V-belt selection and maintenance by covering V-belt size specification, component identification and troubleshooting. Learners will develop fundamental knowledge of synchronous belt drives, lubrication concepts, precision shaft alignment, and coupling. Also covered are heavy duty-chain drives, which describes silent chain drives, multiple strand systems, chain selection, chain lubrication, chain maintenance and troubleshooting. Prerequisite(s): MFGMNT-352.

MFGMNT-359 **Credits: 2**

Mechanical Fabrication

Mechanical Fabrication grounds learners in the basic knowledge needed for assembly. Learners focus on the proper and safe application of hand tools. Mechanical Fabrication builds knowledge in the many types of bolts, wrenches and other fittings commonly used in industry and how to properly apply them, including pneumatic fabrication fittings. Focuses on proper techniques for checking connections and testing fittings with an emphasis on safety. Proper tool use helps in many ways, including injury avoidance, fewer product quality issues, and lower tool breakage costs.

MGTDEV – Management Development (Department: 196)

MGTDEV-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 non-union 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.

MGTDEV-164 **Credits: 3**

Personal Skills for Supervisors

In this course, students apply the skills and tools necessary to deal with time management, stress and related challenges to 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.

MGTDEV-170 **Credits: 1**

Supervisory Leadership 1

In Supervisory Leadership 1, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

MGTDEV-171 **Credits: 1**
Supervisory Leadership 2
In Supervisory Leadership 2, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

MGTDEV-172 **Credits: 1**
Supervisory Leadership 3
In Supervisory Leadership 3, the learner applies the skills and tools necessary to fulfill his/her role as a modern leader. Each learner will demonstrate the application of evaluating leadership effectiveness and organization requirements, individual and group motivation strategies, implementing mission and goals, ethical behavior, personal leadership style and adaptation, impacts of power, facilitating employee development, coaching, managing change, and effective conflict resolution.

MGTDEV-173 **Credits: 1**
Supervision 1
In Supervision 1, the learner applies the skills and tools necessary to perform the functions of a frontline leader. Each learner will demonstrate 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.

MGTDEV-174 **Credits: 1**
Supervision 2
In Supervision 2, the learner applies the skills and tools necessary to perform the functions of a frontline leader. Each learner will demonstrate 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.

MGTDEV-175 **Credits: 1**
Supervision 3
In Supervision 3, the learner applies the skills and tools necessary to perform the functions of a frontline leader. Each learner will demonstrate 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.

MGTDEV-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; deals with variations, budgets and resources, implementation and assessment.

MGTDEV-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.

MGTDEV-190 **Credits: 3**
Leadership Development
In this course, 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.

MGTDEV-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.

MGTDEV-192 **Credits: 3**
Managing for Quality
In this course, students 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 effectiveness of continuous improvement activities.

MGTDEV-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.

MKTG – Marketing
(Department: 104)

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 and Consumer Marketing
Course introduces students to the economic impact of retail and consumer spending, omni-channel retailing, retail formats, merchandise management, technology in retail and the rise of Amazon. Competitive strategies will be discussed. Prerequisite(s): MKTG-102.

MKTG-107 **Credits: 3**
Customer Experience
Course covers the skills needed to deliver an exceptional customer experience, build customer relationships, the use of technology to improve the customer experience, service strategies and service recovery with the ultimate goal of customer loyalty.

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, care, legal aspects and terminology as they relate to the 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-118 **Credits: 3**
Social Media Marketing
This course covers marketing strategies on Facebook, Instagram, Twitter, Snapchat, Pinterest, LinkedIn and YouTube. This is

an application-based course and will teach students how to utilize each platform for social media marketing.

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 fixturing, display locations and merchandise presentation.

MKTG-124 **Credits: 3**
Fashion Merchandising and Marketing
Merchandising fashion goods – men's, women's and 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: Brands and Campaigns
Examine advertising's role in the marketing landscape by exploring topics such as investigating how research influences decisions, creating a creative strategy, developing creative ideas and pieces, and selecting media channels.

MKTG-134 **Credits: 3**
IMC Management
Introduces students to the concepts of integrated marketing communication (IMC). Emphasis is placed on branding, market segmentation, positioning, message strategy, promotion and the execution of marketing communications through appropriate channels.

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**
Client Services
Examine the important role account managers play in order to deliver marketing communications solutions to clients. Learn the key skill sets, understand the critical responsibilities, and explore the hands-on tools necessary to excel.

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 nonprofit 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-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 and life 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-165 **Credits: 3**
Digital Marketing
The use of digital marketing channels and online platforms is covered, including search engine optimization, digital marketing analytics, paid search, email marketing and social media campaigns. Course includes a comprehensive simulation.

MKTG-173 **Credits: 3**
Marketing Research/Analytics
Examine the importance of data-driven decisions to marketing success by exploring topics such as data collection and analysis, tracking critical metrics, and the sharing and reporting of key insights.

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 or Fashion/Retail programs. Prerequisite(s): MKTG-151 or INTRN-796 (minimum grade of C or P).

MKTG-198 **Credits: 3**
Visual Media Marketing
This course covers visual media marketing whose principles integrate graphic design, web design, digital imaging, and business marketing strategies. Students will use a variety of industry-standard design tools in this project-based course.

MLABT – Medical Laboratory Technology (Department: 513)

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): CLABT-110 and CLABT-111, and completion of or concurrent enrollment in HEALTH-107. Must be admitted to the Phlebotomy (30-513-1) program.

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.

MTLFAB – Metal Fabrication (Department: 457)

MTLFAB-300 **Credits: 5**
Metal Fabrication 1
Course covers basics of metal fabrication, safety, production, measuring, hand tools, and layout. Instruction using power shears, forming brakes, drilling equipment, iron worker, and various power saws. Proficiency in fabrication through related projects. Prerequisite(s): Instructor consent is required.

MTLFAB-301 **Credits: 3**
Metal Forming and Press Brake
Focuses on development of layout and fabrication skills through a sequence of exercises and a final project. Students utilize CNC brake presses and CNC cutting table technologies to complete assignments. Prerequisite(s): Instructor consent is required.

MTLFAB-302 **Credits: 4**
Advanced Cutting Process and Techniques
Enhancing metal fabrication skills and techniques utilizing CNC equipment. Prerequisite(s): Instructor consent is required.

MTLFAB-303 **Credits: 5**
Metal Fabrication 2
Apply metal fab design and production skills to complete shop projects. Students will utilize advanced CNC programming skills and setup/layout abilities to produce parts or products. Use of cranes and other lifting systems also will be covered. Prerequisite(s): Instructor consent is required.

MTLFAB-304 **Credits: 4**
Fixturing
Design and create devices for locating, holding and supporting a workpiece during the manufacturing operation. Students will utilize various lab equipment and welding processes to create fixtures that can be used to make parts with repeatability. Prerequisite(s): Instructor consent is required.

MTLGY – Metallurgy (Department: 422)

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 nonferrous 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.

MUSIC (Department: 805)

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, songwriting, 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 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 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**
Songwriting 1
This course is offered to songwriters of all levels. The ability to produce written charts or convey a finished song in an audio format is necessary to take this course. The art and craft of songwriting will be explored by examining the compositional tools that strengthen lyrics, melody, harmony and form. Students will learn how to convey their ideas and emotions in a coherent and effective manner using these tools and also will gain a perspective on the more abstract concept known as the creative muse. Songs from across the musical spectrum and throughout songwriting history will be used for analysis. All musical styles are welcome and students will write songs in the genre of their choosing. Prerequisite(s): MUSIC-150.

MUSIC-108 **Credits: 1**
Film Scoring 1
Film Scoring 1 is a lecture/survey class covering four areas: the history, the production or process of film scoring, creating the score and the business details of film scoring.

MUSIC-109 **Credits: 1**
Film Scoring 2
Film Scoring 2 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 course 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 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-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 music of the Western culture from the 1500s to the present. The class will emphasize the understanding, recognition and appreciation of various musical styles; a better understanding of music of the past so as to better understand the music of the present and future; broadening one's basis of acceptance as to what constitutes music, and maintain and develop 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
A 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, and 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-142 **Credits: 2**
Introduction to Composition
Students will explore the art of the composer. This course takes the class through an in-depth examination of genres, styles, the composer's tools, arranging and orchestration considerations, and sources of inspiration.

MUSIC-143 **Credits: 1**
Music Notation 1
Music Notation 1 introduces the learner to the basics of music manuscript. Students will notate basic rhythm, melody and harmony by hand. The learner also will be introduced to the fundamentals of Finale and Sibelius music notation software, and learn about the techniques used in the industry of engraving notation. Students will study the form and texture of multiple genres of music.

MUSIC-144 **Credits: 1**
Music Notation 2
Music Notation 2 is an intermediate to advanced-level course in which the learner will explore the music engraving software of Finale and Sibelius in great detail. An emphasis on music theory, form and analysis in many genres of music will accompany an advanced series of instruction and exploration of music manuscript.

MUSIC-147 **Credits: 1**
Songwriting 2
This course is a continuation of Songwriting 1. Students will hone the art and craft of songwriting and will develop a more sophisticated approach to writing lyrics, melody, harmony and form. The process of song arrangement will be discussed and emphasized in more detail in this second part of the course. The challenge of writing songs in various genres and for specific commercial purposes will be explored. Prerequisite(s): MUSIC-107.

MUSIC-148 **Credits: 2**
Music Fundamentals 1
An 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 Theory 2
This course involves the application of knowledge acquired in Music Theory as it relates to harmony and harmonic progression. Our objective is to develop skills in fundamental to advanced harmonizing within the modern musical idioms. Prerequisite(s): MUSIC-150.

MUSIC-152 **Credits: 3**
Composition 1
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**
Composition 2
Students compose, orchestrate and record in various musical styles using computers, digital keyboards, sequencing and music notation software. Prerequisite(s): MUSIC-152.

MUSIC-158 **Credits: 1**
Orchestration 1
Students will learn the fundamentals of orchestration (arranging) for small ensembles from jazz combo to small chamber orchestra. Students will orchestrate original works and classic examples from the literature for live players or digital orchestra. Students will learn instrumental ranges, transpositions and characteristics for maximum effect. Prerequisite(s): MUSIC-151.

MUSIC-159 **Credits: 1**
Orchestration 2
A continuation of Orchestration 1, students will study and develop intermediate and advanced orchestration concepts through writing for larger ensembles from sextets to full orchestra. Students will apply skills to the orchestration of original works and classic literature, contemporary genres and film scores. Prerequisite(s): MUSIC-158.

MUSIC-162 **Credits: 1**
Music Ensemble 1
Students have the opportunity to learn the various styles of music and how to reproduce them. Participation in this class will give the student valuable, practical experience in reading music notation, reading chord charts and lead sheets, improvisation, learning music in the confines of a musical ensemble, thus better equipping them to perform professionally.

MUSIC-163 **Credits: 1**
Music Ensemble 2
A 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
The 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
A continuation of MUSIC-167, the intent of this course is to provide students with more advanced training 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-173 **Credits: 1**
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-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-151.

MUSIC-177 **Credits: 1**
Piano Lab 1
A 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
A 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-181 **Credits: 1**
Conducting
This course will develop basic conducting skills. It will explore and develop techniques associated with historically classical instrumental and vocal conducting, as well as contemporary genres and conducting/leading a group while also playing in the group. Prerequisite(s): MUSIC-152.

MUSIC-182 **Credits: 3**
Composition for Advertising
This is a class that applies music composition skills to the area of broadcast advertising music for radio and television commercials, in-house instructional videos, convention theme songs, and variations on a melodic theme for multi-commercial campaigns, all within the confines of the predetermined guidelines of the client's specific direction. The details of running a commercial production company also will be emphasized including establishing a client base, demo writing, producing a final production, keeping good books, fee structures and pitching skills. Prerequisite(s): MUSIC-151.

MUSIC-183 **Credits: 3**
Library Licensed Music
Library Licensed Music introduces the concepts and techniques of composing, mixing and editing original pieces of music for the purposes of licensing for the world of radio, television and advertising. Prerequisite(s): MUSIC-152.

MUSIC-184 **Credits: 2**
Ear Training 2
This course is a 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 also will cover the basic skills of reading music in the bass clef. The student will perform simple music examples in class on their instrument.

MUSIC-187 **Credits: 1**
Guitar Lab 1
Group lessons instruction for beginners, or 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
A continuation of MUSIC-187. Group lesson instruction to improve music reading skills, expand chord vocabulary, scales, understanding chord progressions, finger-style guitar basics and bare chords. Students must provide their own guitar. Prerequisite(s): MUSIC-187.

MUSIC-189 **Credits: 1**
Voice Lab 1
Students 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
A continuation of MUSIC-191. Prerequisite(s): MUSIC-191.

MUSIC-193 **Credits: 1**
Voice Lab 2
Students continue to develop good vocal techniques through solo singing, and develop 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): MUSIC-192.

MUSIC-205 **Credits: 3**
Music Appreciation
This course introduces music elements such as rhythm, melody, harmony, texture in vocal and instrumental forms to analyze and appreciate music from the 1400s to present, including historical musical periods as well as 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 Music
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 principally 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 the evolution of the music. 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.

NATSCI – Natural Science
(Department: 806)

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-112 **Credits: 3**

Principles of Sustainability

Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems; summarize the effects of sustainability on health and well-being; analyze connections among social, economic and environmental systems; employ energy conservation strategies to reduce the use of fossil fuels; investigate alternative energy options; evaluate options to current waste disposal and recycling in the U.S.; and analyze approaches used by your community to promote and implement sustainability.

NATSCI-139 **Credits: 3**

Survey of Physics

This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.

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 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 (minimum grade of C) and one semester of college English (minimum grade of C) or satisfactory MATC placement test score.

NATSCI-179 **Credits: 4**

Advanced Anatomy and Physiology

Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery is within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuromuscular, cardiovascular and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development also are included in this course. Prerequisite(s): NATSCI-177 (minimum grade of C).

NATSCI-186 **Credits: 4**

Introductory Biochemistry

Provides students with skills and knowledge of organic and biological chemistry necessary for application within nursing and other allied health careers. Emphasis is placed on recognizing the structure, physical properties and chemical reactions of organic molecules, body fluids and acids. Additional emphasis is placed on biological functions and their relationships to enzymes, proteins, lipids, carbohydrates and DNA. Prerequisite(s): Two semesters of high school chemistry (minimum grade of C) or one semester of college chemistry (minimum grade of C) and one semester of college English (minimum grade of C) or satisfactory scores on the 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 (minimum grade of C).

NATSCI-201 **Credits: 4**

Anatomy and Physiology 1

This is a general course presenting unifying concepts critical to a basic understanding of the human body. Lectures and laboratory studies use models and dissection of specimens 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 prerequisites must have a minimum grade of C.)

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 (minimum grade of C).

NATSCI-207 **Credits: 4**

General Chemistry

This course provides a foundation in general inorganic chemistry in preparation for a second semester of organic and biochemistry. Specific topics include dimensional analysis, atomic structure, periodic table and properties of elements, compounds, solutions, acids/bases, reactions and equilibrium, oxidation/reduction, and introduction to organic chemistry. Prerequisite(s): NATSCI-110 (minimum grade of C) or one year of high school chemistry (minimum grade of C.)

NATSCI-208 **Credits: 4**

Survey of Biochemistry

This course provides a basis in organic chemistry needed for understanding biochemistry. Topics in biochemistry 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. Prerequisite(s): NATSCI-207 or NATSCI-211.

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 (minimum grade of C). Also, MATH-200 (minimum grade of 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 (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, acidimetry and alkalimetry, redox process, solubility equilibria, complexation titrations and optical and electrometric methods. Laboratory work is included. Prerequisite(s): NATSCI-212 (minimum grade of C).

NATSCI-216 **Credits: 5**
Instrumental Analysis
Instrumental Analysis examines the design, construction and use of modern chemical analytical instruments. Topics included are absorption and emission spectroscopy, gas and liquid chromatography, and electrochemical methods. Prerequisite(s): NATSCI-212 (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 (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 (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-212 (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, Earth and the solar systems, the sun as a star and other stars, galaxies and theories of the universe.

NATSCI-226 **Credits: 1**
Observational Astronomy
This course is designed to provide hands-on experience in the application of the laws of physics to astronomy. Using computers as well as other technological instruments in the field of astronomy, students observe phenomena and experience astronomical events. This course focuses on identification of the tools of astronomy and their use in solving basic problems in astronomical theory. This laboratory only should be taken in conjunction with, or subsequent to, NATSCI-225.

NATSCI-230 **Credits: 1**
Introduction to Nutrition Lab
This course is a complementary laboratory course to NATSCI-220, which offers an introductory experience in human nutrition. This course offers a laboratory experience to complement the basics of nutrition. The concepts covered in the lecture course are explored in greater detail during the lab time using a variety of activities including food experiments, anthropometric measurement, and nutrient analysis and enhanced problem sets.

NATSCI-232 **Credits: 3**
Earth Science
This course introduces students to the fields of geology, meteorology, astronomy and oceanography. It emphasizes humans' continually evolving techniques of exploring both the past and the present world and universe.

NATSCI-233 **Credits: 3**
Environmental Science
This course introduces basic scientific principles necessary to an understanding of the relationships between mankind and the environment, with special focus on the effects of mankind's activities on the environment.

NATSCI-234 **Credits: 1**
Earth Sciences Laboratory
This laboratory course introduces students to the earth sciences through firsthand activities and 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. Please consult the instructor or Department of Physical Science instructional chairperson for specific content. This laboratory only should be taken in conjunction with, or subsequent to, NATSCI-232.

NATSCI-236 **Credits: 5**
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 (minimum grade of C) or a satisfactory MATC placement test score.

NATSCI-241 **Credits: 4**
Pathophysiology: Disease Process
Pathophysiology provides students with 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 NATSCI-177 and NATSCI-179, or NATSCI-201 and NATSCI-202 (minimum grade of C).

NATSCI-242 **Credits: 4**
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 **Credits: 3**
Weather Fundamentals
The course assists students whose work and interests require a general knowledge of atmospheric science. Applications appear in

agribusiness, architectural design, insurance underwriting, environmental control, health and safety occupations, water resource industries, fabrication of materials (textiles, paints, plastics), physical geography and oceanography.

NATSCI-244 **Credits: 1**
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.

NATSCI-245 **Credits: 4**
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 **Credits: 3**
Climate Change Fundamentals
This course examines critically our understanding of climate and its causes, the evidence of past and present climate change and models of future climate change, as well as the probable impacts of climate change on society and implications for future energy resources and the economy.

NATSCI-257 **Credits: 4**
Biology I
This course is the first of a two-course series. This course covers chemistry as it pertains to biology, biochemical principles, cell biology, metabolism, cellular energy, genetics, molecular biology, evolution, and ecology. Three hours lecture, three hours lab. Prerequisite(s): NATSCI-207 or NATSCI-211.

NATSCI-258 **Credits: 4**
Biology II
This is the second of a two-course series. This course covers a survey of organisms including viruses, bacteria, protista, fungi, plants and animals. It also will cover organ systems biology in animals and specifically in humans. Three hours lecture and three hours extended lab. Prerequisite(s): NATSCI-257 (minimum grade of C).

NATSCI-259 **Credits: 2**
Genetics and Genomics
Genetics and genomics are issues that affect individuals throughout their lifespan. These topics will gain even more importance as we learn more about the genetic basis of medical conditions. Therefore, anyone involved in healthcare will need an understanding about the social, ethical and legal issues of genetics and genomics as well as their underlying scientific principles. This course provides an overview of genetics and genomics while exploring the implications of these topics on the healthcare setting. The first part of the course concentrates on the basics of genetics and the science behind heritable characteristics. The course goes on to discuss the implications of genomics, concluding with an investigation of the social, ethical and legal issues of genetic technology (cloning for medical and reproductive purposes, genetically modified organisms or GMOs, and who owns genetic information). Prerequisite(s): Take one of the following courses: NATSCI-177, NATSCI-186, NATSCI-202 or NATSCI-208.

NATSCI-260 **Credits: 3**
Plagues, People and Power
This course covers the history of infectious diseases and their impact on human society as well as how human activities have contributed to infectious disease outbreaks. It also examines the potential future impact of infectious diseases. Topics to be covered include historical diseases, emerging and re-emerging infectious diseases and biological weapons. Prerequisite(s): ENG-151 or ENG-201 (minimum grade of C) or a satisfactory MATC placement test score.

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-269 **Credits: 1**
Genetic and Genomics Lab
Genetics and genomics are issues that affect individuals throughout their lifespan. These topics will gain even more importance as we learn more about the genetic basis of medical conditions. Therefore, anyone involved in healthcare will need an understanding about the social, ethical and legal issues of genetics and genomics as well as their underlying scientific principles. This course is an adjunct to NATSCI-259 (a two-credit lecture course that provides an overview of genetics and genomics while exploring the implications of these topics on the healthcare setting). This lab course would provide the students with the laboratory component of the technologies discussed in NATSCI-259. Taken together, the two courses would be the equivalent of a three-credit science class with a lab.

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 (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 (minimum grade of C).

NATSCI-280 **Credits: 3**
Applied Nutrition
Applied Nutrition is a three-credit nutrition class for future health professionals or students who would like to get more education in nutrition and how it affects our health. Topics discussed will include lifecycle nutrition and how diet affects the physiology of the body, metabolism, weight management, and food choices and the development of chronic diseases (diabetes, cancer, autoimmune diseases, etc.). Prerequisite(s): NATSCI-201 or NATSCI-207.

NATSCI-292 **Credits: 1**
Lab Techniques in Bio-Chem Research
This two-week workshop is designed to familiarize high school students with the Associate of Science degree at Milwaukee Area Technical College. This course will introduce students to educational and career opportunities in science. It also includes hands-on experimentation, data collection and analysis in the areas of biotechnology, chemical technology and water technology. Math skills applicable to the fields of biotechnology and chemical technology also will be introduced. Prerequisite(s): Biology or chemistry and algebra. 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. Algebra may be satisfied with one semester of college math or a satisfactory placement test score.

NRSAD – Associate Degree Nursing (Department: 543)

NRSAD-101 **Credits: 2**
Nursing Fundamentals
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 Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-102 **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. 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 Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-103 **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. Prerequisite(s): Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-104 **Credits: 2**
Nursing: Introduction to Nursing Practice
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): Completion of or currently enrolled in NRSAD-101, NRSAD-102, NRSAD-103. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-105 **Credits: 3**
Nursing Health Alterations
This course elaborates upon the basic concepts of health and illness as presented in 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 will introduce concepts of leadership and management. Prerequisite(s): NRSAD-101, NRSAD-102, NRSAD-103, NRSAD-104. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-106 **Credits: 3**
Nursing Health Promotion
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): NRSAD-101, NRSAD-102, NRSAD-103, NRSAD-104. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-107 **Credits: 2**
Nursing: Clinical Care Across the Lifespan
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): Completion of or currently enrolled in NRSAD-105 and NRSAD-106. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-108 **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): Completion of or currently enrolled in NRSAD-105 and NRSAD-106. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-109 **Credits: 3**
Nursing Complex Health Alterations 1
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 Registered Nursing (10-543-1) program and have taken NRSAD-105, NRSAD-106, NRSAD-107, NRSAD-108. Or must be admitted to the LPN-RN Progression (10-543-10) program and have completed NRSAD-191.

NRSAD-110 **Credits: 2**
Nursing Mental Health Community Concepts
This course will cover topics related to the delivery of community and mental healthcare. 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, economically diverse individuals and groups. Prerequisite(s): NRSAD-105, NRSAD-106, NRSAD-107, NRSAD-108. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-111 **Credits: 3**
Nursing Intermediate Clinical Practice
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 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): Completion of or currently enrolled in NRSAD-109, NRSAD-110, NRSAD-112. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-112 **Credits: 1**
Nursing Advanced Skills
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 Registered Nursing (10-154-1) program and take NRSAD-105, NRSAD-106, NRSAD-107, NRSAD-108. Or must be admitted to the LPN-RN Progression (10-543-10) program and have taken NRSAD-109, NRSAD-110, NRSAD-191.

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, reproductive systems, and shock, burns and trauma. The learner also will focus on management of care for patients with high-risk perinatal conditions and high-risk newborns. Prerequisite(s): NRSAD-109, NRSAD-110, NRSAD-111, NRSAD-112. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

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. Prerequisite(s): NRSAD-109, NRSAD-110, NRSAD-111, NRSAD-112. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

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): Completion of or currently enrolled in NRSAD-113 and NRSAD-114. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

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 works collaboratively with others to achieve client and organizational outcomes. Continued professional development is fostered. Prerequisite(s): Completion of or currently enrolled in NRSAD-113, NRSAD-114, NRSAD-115. Must be admitted to the Registered Nursing (10-543-1) program or the LPN-RN Progression (10-543-10) program.

NRSAD-168 **Credits: 4**

Nursing: Community Health and Mental Health Concepts

Nursing care of population and communities to facilitate optimal health outcomes. Specific health needs of individuals, families, groups, and communities will be addressed. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on promotion, prevention, and management of behaviors and specific mental health disorders across the lifespan. Community resources will be examined in relation to specific types of support offered to social, racial, ethnic and economically diverse individuals and communities. Prerequisite(s): NRSAD-105, NRSAD-106, NRSAD-107, NRSAD-108.

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

The course focuses on development or enhancement of clinical skills and physical assessment across the lifespan. The course includes review of mathematic 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 the LPN-RN Educational Progression (10-543-10) program.

NRSNA – Nursing Assistant (Department: 543)

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 service. 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 (30-543-1) program.

NRSPN – Practical Nursing (Department: 543)

NRSPN-301 **Credits: 2**

Nursing Fundamentals

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.

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. 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 Practical Nursing (31-543-1) program.

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 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): Completion of or currently enrolled in NRSPN-301, NRSPN-302, NRSPN-303. Must be admitted to the Practical Nursing (31-543-1) program.

NRSPN-305 **Credits: 3**

Nursing Health Alterations

This course elaborates upon the basic concepts of health and illness as presented in 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 will introduce concepts of leadership and management. Prerequisite(s): NRSPN-301, NRSPN-302, NRSPN-303, NRSPN-304. Must be admitted to the Practical Nursing (31-543-1) program.

NRSPN-306 **Credits: 3**

Nursing Health Promotion

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): NRSPN-301, NRSPN-302, NRSPN-303, NRSPN-304. Must be admitted to the Practical Nursing (31-543-1) program.

NRSPN-307 **Credits: 2**

Nursing: Clinical Care Across the Lifespan

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): Completion of or currently enrolled in NRSPN-305 and NRSPN-306. Must be admitted to the Practical Nursing (31-543-1) program.

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): Completion of or currently enrolled in NRSPN-305, NRSPN-306, NRSPN-307. Must be admitted to the Practical Nursing (31-543-1) program.

NURSAD – Associate Degree Nursing (Department: 510)

NURSAD-161 **Credits: 1**

Fundamentals of Medication Calculation

This one-credit course introduces the learner to basic math strategies for calculating medication dosages. In a low-anxiety setting, the learner will review basic operations with decimals and fractions. Other topics include measurement systems and conversions, and using ratio, proportion and formula methods for dosage calculations.

OFTECH – Office Technology (Department: 106)

OFTECH-101 **Credits: 3**

Office Technologies 1

The students enrolled in this course, using a hands-on approach, will be instructed to manage files using Microsoft Windows Operating System, and they also will learn to use the Microsoft Word keyboard shortcuts to improve their techniques using the keyboard.

OFTECH-102 **Credits: 3**

Office Technologies

This course offers skill development in the office environment using Windows, Microsoft Office, internet/email, computer concepts, and webpage development. The office environment includes applications using Word, Excel, Access and PowerPoint. The office environment will utilize several mini simulations to acclimate the student to working in an office. Business etiquette will be discussed and practiced. Prerequisite(s): OFTECH-101.

OFTECH-103 **Credits: 1**

Keyboard and Keypad

Using a computer and web-based software, students learn keyboarding using the touch method. Emphasis is placed on correct fingering skills, accuracy and speed. Passing a Challenge Exam (30 words per minute with no more than three errors on a two-minute timing) may be completed in lieu of taking this course. Contact MATC's School of Business for exam information.

OFTECH-104 **Credits: 3**

Budgeting Basics for Support Personnel

Students will review basic mathematical operations and survey accounting principles and practices with an emphasis on applying them to administrative professional tasks: payroll, bank reconciliation, budgeting, and accounts payable/receivable and invoicing.

OFTECH-111 **Credits: 3**

Workplace Communication for Support Personnel

Students in this course study the principles, strategies and techniques of effective written, oral and digital business communication. Emphasis is placed on applying grammar and mechanics to create written messages including emails, memos, letters, reports and résumés. Students learn productive techniques for business meetings, presentations and interviews, as well as communicating professionally in an increasingly global, digital workplace.

OFTECH-119 **Credits: 3**

Information Management

Students learn the basic principles and procedures of creation, storage, retrieval, retention and disposal of records. The management of electronic and image records is included. Rules for alphabetic, numeric, geographic, and subject filing are applied.

OFTECH-122 **Credits: 3**

Business English Essentials

This course is designed to improve oral and written communication skills. Study of English fundamentals, including parts of speech, agreement, sentence types, and plurals and possessives, as well as rules for punctuation, capitalization, number usage, and spelling and vocabulary, are emphasized.

OFTECH-123 **Credits: 3**

Proofreading and Editing

This course is designed to help the student improve upon proofreading and editing skills using hard copy and computerized materials. The course also will introduce the student to basic transcription skills where the student will be required to apply proper proofreading and editing techniques. Prerequisite(s): OFTECH-122 (minimum grade of C) and OFTECH-133.

OFTECH-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.

OFTECH-129 **Credits: 1**

MS Word – Part 2

Students will create Word templates; merge documents; create reports with table of contents, bibliographies, bookmarks and styles; and develop attractive newsletters and on-screen forms. Prerequisite(s): OFTECH-128.

OFTECH-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): OFTECH-103, and completion of or currently enrolled in OFTECH-136.

OFTECH-134 **Credits: 3**

Legal Document Production

Utilizing a microcomputer and software, this course is designed to give students experience in preparing legal documents and correspondence as used in the various legal specialties. Legal vocabulary also is emphasized. Prerequisite(s): OFTECH-133, RBUS-141.

OFTECH-136 **Credits: 1**

Keyboarding Skill Development 1

Using a computer and web-based software, this course is designed to improve keying speed and accuracy. Passing a Challenge Exam (50+ words per minute with no more than five errors on a five-minute timing) may be completed in lieu of taking this course. Contact MATC's School of Business for exam information. 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-133.

OFTECH-146 **Credits: 1**

Keyboarding Skill Development 2

Using a computer and web-based software, this course is designed to improve keying speed and accuracy. Passing a Challenge Exam (60 words per minute with no more than five errors on a five-minute timing) may be completed in lieu of taking this course. Contact MATC's School of Business for exam information. Prerequisite(s): OFTECH-136.

OFTECH-147 **Credits: 3**

Machine Transcription Proofreading and Editing Legal

This course is designed to help the student improve upon proofreading and editing skills using hard copy and computerized materials. The course will introduce the student to basic transcription skills where the student will utilize and apply correct legal terminology, spelling, grammar, punctuation, sentence structure, formatting, etc., in proofreading of written, electronic and dictated material to produce mailable documents. Emphasis is then placed on transcribing legal correspondence including client, and court documents from voice-recorded dictation, then proofreading and editing materials from dictated and handwritten drafts. Prerequisite(s): OFTECH-122, OFTECH-133, RBUS-141.

OFTECH-153 **Credits: 1**

Collaboration Tools

Students will learn, compare and analyze the successful use of collaboration and social media tools used in organizations today. Topics include online calendaring, online document editing and file sharing,

social media, and video conferencing. Prerequisite(s): COMPSW-106 or OFTECH-101.

OFTECH-164 **Credits: 3**
Legal Office Procedures
This course is designed to equip students with the decision-making abilities 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, OFTECH-147.

OFTECH-165 **Credits: 3**
Administrative Office Procedures 1
This course is designed to develop administrative professional skills and attitudes needed in today's global business environment. Topics include communicating in a business environment, making ethical decisions, working independently and as a team member, and managing time. Learners are introduced to meeting, travel, and event planning, mail processing, telecommunications and ergonomics. Prerequisite(s): OFTECH-122, OFTECH-133.

OFTECH-170 **Credits: 3**
Meeting and Event Planning for Support Personnel
This course introduces students to the basics of project planning as an administrative assistant. Students plan and execute meetings and business events. Meeting and event preplanning activities; facilitating events; producing meeting/event documentation; and coordinating equipment, facility, and food and beverage needs will be discussed. Students plan travel for business executives as well as prepare a travel itinerary.

OFTECH-182 **Credits: 3**
Customer Service Skills
Students will receive an introduction to customer service principles including the concepts and practices needed by today's support personnel for providing effective customer satisfaction in any business organization, domestic or international. Customer service strategies covered in this course include effective listening, oral and written communication; analytical and problem-solving skills; and teamwork.

OFTECH-183 **Credits: 3**
Bilingual Customer Service Skills
Overview of the behavior exhibited by successful customer service professionals featuring simulated business settings. Includes conventional behaviors of the workplace, professional communication in the customer service setting, grooming and clothing for a business setting, telephone and email etiquette basics, effective answers to sales questions, punctuality and the work ethic, professionalism in the workplace, basic qualitative activities, behavior with co-workers, customer service challenges, exceptional customer service, and career advancement strategies in customer service. In addition, learners will study and train in organizational communication within a multicultural global environment and interpersonal communication skills in a culturally diverse workforce.

OFTECH-184 **Credits: 3**
MS Office: Word, Excel, Access and PowerPoint
This course offers skill development in PowerPoint in 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, 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, webpages and other technologies. Prerequisite(s): OFTECH-184.

OFTECH-187 **Credits: 3**
Business Publications
In the course, students will create print-ready newsletters, brochures, flyers, forms, business cards and other business publications using current publishing software including MS Publisher, MS Word and Adobe. Prerequisite(s): OFTECH-101.

OFTECH-190 **Credits: 1**
Bilingual Office Assistant Internship
This course will be a cooperative training program that allows bilingual students to utilize skills and knowledge in an approved business office, under the supervision and guidance of a teacher and a cooperating employer that serves Spanish speakers. Prerequisite(s): OFTECH-183 and INTRN-796 (minimum grade of C or P).

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, OFTECH-147.

OFTECH-196 **Credits: 1**
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): INTRN-796 or RBUS-180.

OTASST – Occupational Therapy Assistant (Department: 514)

OTASST-171 **Credits: 3**
Introduction to Occupational Therapy
Provides an overview of history, 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 (10-514-1) program.

OTASST-172 **Credits: 3**
Medical and Psychosocial Conditions
This course introduces medical and psychosocial conditions as they relate to occupational therapy practice. Topics include etiology, symptomology, treatment and contraindications. Prerequisite(s): Admission to the Occupational Therapy Assistant (10-514-1) program. Completion of or concurrent registration in OTASST-171 and OTASST-173.

OTASST-173 **Credits: 2**
Activity Analysis and Application
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 (10-514-1) program.

OTASST-174 **Credits: 4**
OT Performance Skills
The emphasis of this course is on the development of skills related to assessment and intervention in the areas of sensory, motor, cognition and communication. Prerequisite(s): OTASST-171, OTASST-172, OTASST-173.

OTASST-175 **Credits: 3**
Psychosocial Practice
Examines the role of the OTA in the service delivery to individuals affected by mental health conditions. Provides an opportunity for development of skills related to psychosocial assessment and interventions. Prerequisite(s): OTASST-174, OTASST-176, OTASST-177, OTASST-178.

OTASST-176 **Credits: 3**
OT Theory and Practice
Examines the theoretical foundations that guide OT practice. Apply group dynamics and demonstrate leadership skills. Prerequisite(s): OTASST-171, OTASST-172, OTASST-173.

OTASST-177 **Credits: 2**
Assistive Technology and Adaptations
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, OTASST-173.

OTASST-178 **Credits: 3**
Geriatric Practice
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, OTASST-173.

OTASST-179 **Credits: 2**
Community Practice
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, OTASST-178.

OTASST-184 **Credits: 2**
OTA Fieldwork 1
Integrate classroom theory and practice into a fieldwork Level I experience. Provides experiences to assist in the development of communication, professional and observational skills. Prerequisite(s): Completion of or concurrent enrollment in OTASST-189 and OTASST-190.

OTASST-185 **Credits: 2**
OT Practice and Management
Provides opportunities to practice clinical management skills, continuous quality improvement measurement, and administrative concepts and procedures. Students create a professional development plan. Prerequisite(s): OTASST-175, OTASST-179, OTASST-184, OTASST-189, OTASST-190.

OTASST-186 **Credits: 5**
OTA Fieldwork 2A
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-184, OTASST-189, OTASST-190.

OTASST-187 **Credits: 5**
OTA Fieldwork 2B
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-185 and OTASST-186.

OTASST-189 **Credits: 4**
OT Physical Rehab Practice
Explores interventions relative to major physical disability diagnoses seen in OT practice. Evaluation, treatment interventions, assistive technology and documentation are emphasized relative to the biomechanical, neurodevelopmental and rehabilitative approaches to practice. Prerequisite(s): OTASST-174, OTASST-176, OTASST-177, OTASST-178.

OTASST-190 **Credits: 4**
OT Pediatric Practice
Explores interventions relative to major pediatric diagnoses seen in OT practice. Evaluation, treatment interventions, assistive technology and documentation are emphasized within the context of the child's occupations. Prerequisite(s): OTASST-174, OTASST-176, OTASST-177, OTASST-178.

PAINT – Painting and Decorating (Department: 424)

PAINT-353 **Credits: 1**
Wood Finishing
The characteristics of 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 also are studied.

PHARMT – Pharmacy Technician (Department: 536)

PHARMT-300 **Credits: 1**
Orientation to Pharmacy Operations
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 the Pharmacy Technician (31-536-1) program.

PHARMT-302 **Credits: 2**
Pharmaceutical Calculations
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 the Pharmacy Technician (31-536-1) program.

PHARMT-303 **Credits: 2**
Introduction to Drug Classification
This course introduces the principles of pharmacology including therapeutic classification of medications, their actions, and adverse reactions. Prerequisite(s): Admission to the Pharmacy Technician (31-536-1) program.

PHARMT-306 **Credits: 2**
Pharmacy Clinical Experience 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): PHARMT-300, PHARMT-302, PHARMT-303, PHARMT-307, PHARMT-395, HEALTH-107, and completion of or currently enrolled in HEALTH-104.

PHARMT-307 **Credits: 1**
Community Pharmacy Lab
This laboratory course applies theory through performance of technical pharmacy tasks in a community pharmacy setting. Emphasis is on outpatient prescription processing. Prerequisite(s): Admission to the Pharmacy Technician (31-536-1) program.

PHARMT-310 **Credits: 1**
Institutional Pharmacy Practice
Topics specific to institutional pharmacy practice are presented, in addition, the course assists students to prepare for employment as a pharmacy technician. Prerequisite(s): PHARMT-300, PHARMT-302, PHARMT-303, PHARMT-307, PHARMT-395.

PHARMT-311 **Credits: 2**
Orientation to Sterile Solutions
This course focuses on introductory material related to techniques for safe preparation of sterile solutions. Application of basic principles of microbiology, aseptic technique and the operation of both the vertical and horizontal laminar flow hoods to acceptable pharmacy practice standards is presented. Prerequisite(s): PHARMT-300, PHARMT-302, PHARMT-303, PHARMT-307, PHARMT-395.

PHARMT-312 **Credits: 3**
Pharmacy Operations Laboratory
This laboratory course applies theory through performance of technical pharmacy tasks in an institutional pharmacy setting. Prerequisite(s): PHARMT-300, PHARMT-302, PHARMT-303, PHARMT-307, PHARMT-395.

PHARMT-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): HEALTH-107, PHARMT-300, PHARMT-302, PHARMT-303, PHARMT-307, PHARMT-395, and completion of or currently enrolled in PHARMT-306, PHARMT-310, PHARMT-311, PHARMT-312.

PHARMT-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): PHARMT-306.

PHOTO – Photography
(Department: 203)

PHOTO-100 **Credits: 1**
Introduction to Digital Photography
Using a digital camera to create consistent and good photographs requires knowledge and understanding of complex skills. If you have little experience with your camera these can be daunting. Setting the proper shutter speed and knowing how different aperture settings, or ISO, affect your image is critical to successful photography. Knowing how to achieve proper digital files with your camera is an important step in this process. Learn to select the right lens and to properly plan how you compose photographs. Having photographs printed will be discussed.

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. 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-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 caliber, continuous-tone, digital printing systems. Prerequisite(s): PHOTO-108, PHOTO-130, PHOTO-139, PHOTO-141.

PHOTO-106 **Credits: 3**
View Camera Techniques
Students will 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, scanning, inkjet printing and finishing techniques. Prerequisite(s): PHOTO-108, PHOTO-130, PHOTO-139, PHOTO-141.

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 photographs 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-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 résumé, interviewing and job search techniques, as well as business basics, also are stressed. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124, PHOTO-142.

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. Prerequisite(s): PHOTO-108, PHOTO-130, PHOTO-139.

PHOTO-124 **Credits: 3**
Portraiture
Students work with a variety of subjects in both 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 also is covered. Prerequisite(s): PHOTO-108, PHOTO-130, PHOTO-139, PHOTO-141.

PHOTO-125 **Credits: 2**
Conceptual Photography Projects
This course will help students focus on one photographic project that will be conceived, developed and finished in book form. Students will produce a new, cohesive group of images created specifically for this class. This class is for hobbyists, aspiring professionals, fine art photographers or professionals intending to produce a "personal" project. Prerequisite(s): PHOTO-101, PHOTO-107, PHOTO-108, PHOTO-130, PHOTO-141.

PHOTO-126 **Credits: 3**
Advanced Lighting
Advanced Lighting 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, PHOTO-108.

PHOTO-130 **Credits: 3**
Photographic Composition
This course 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 effects of color, line, value, texture, volume, time and form. Prerequisite(s): PHOTO-101.

PHOTO-139 **Credits: 3**
Measurement Techniques
Students learn to control photographic technique by utilizing the digital zone system. This controlled system will enable students to accurately pre-visualize the finished photograph before capture. Emphasis is on the testing of light meters, camera sensors, lenses and setting up of a calibrated workflow with their own DSLR camera. Once a calibrated system is in place, proper workflows will allow accuracy from capture to final output. Prerequisite(s): PHOTO-101.

PHOTO-141 **Credits: 3**
Photoshop for Photographers 1
Photoshop for Photographers 1 is a fundamental Photoshop course. Emphasis is placed on Photoshop tools and techniques, color theory and understanding preference settings. Students will use a digital camera to develop their awareness of color and enhance their technical skills. Photoshop and other digital imaging editing software and film scanning are introduced using professional equipment.

PHOTO-142 **Credits: 3**
Photoshop for Photographers 2
Photoshop for Photographers 2 is an advanced Photoshop course. Students continue to develop skills utilizing Photoshop tools and apply color management, compositing and planning into multilayered projects. Students use digital cameras to develop awareness of color control and to enhance technical skills. Emphasis is placed on complex Photoshop composites and advanced selection methods. Prerequisite(s): PHOTO-141.

PHOTO-166 **Credits: 1**
Photographic Management
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, PHOTO-142.

PHOTO-173 **Credits: 3**
Photo Journalism
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, PHOTO-139.

PHOTO-180 **Credits: 3**
DSLR Video
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 incorporate color and black-and-white film media, as well as digital capture methods, to complete assignment work. Prerequisite(s): PHOTO-103, PHOTO-121, PHOTO-124, PHOTO-142.

PHOTO-190 **Credits: 1**
Photography Internship
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, PHOTO-142 and INTRN-796 (minimum grade of C or P).

PHYED – Physical Education
(Department: 807)

PHYED-145 **Credits: 1**
CPR and First Aid
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-203 **Credits: 1**
Hatha Yoga for Wellness 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 **Credits: 3**
An Active Approach to Wellness and Fitness
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 **Credits: 1**
Basketball 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 **Credits: 1**
Basketball 2
Advanced individual basketball skills are demonstrated and practiced. The course includes offense and defense strategies along with special situations and coaching techniques.

PHYED-223 **Credits: 1**
Coed Volleyball 1
This course is designed to introduce students to the basic game of volleyball and to develop volleyball skills no matter what level of skill individual students have, from beginner to experienced.

PHYED-224 **Credits: 1**
Coed Volleyball 2
A course designed to teach some of the advanced skills of volleyball. Included is an examination of specialty sets, passes and serves. Also, different offenses will be taught including the 4-2, 6-2 and 5-1.

PHYED-233 **Credits: 1**
Stretch and Stability Techniques
Instruction is given in basic fundamentals and techniques of stretch exercises set to music. This involves a full range of muscle activity, with emphasis on body mechanics, flexibility and body toning.

PHYED-234 **Credits: 1**
Stretch and Stability Techniques 2
This advanced course includes increasing body awareness, improving flexibility, posture, muscular strength and mobility. This involves strategies for maintaining a full range of muscular activities with emphasis on body mechanics, flexibility, core strengthening and balance. Prerequisite(s): PHYED-233.

PHYED-245 **Credits: 1**
Cardiopulmonary Resuscitation (CPR) and First Aid
This course develops skills needed to certify individuals in the techniques for rescue breathing, choking emergencies, and other related breathing emergencies. The skills also will include training for resuscitation of the adult, child and infant along with proper techniques in two-person CPR, use of masks for rescue breathing and the proper instruction of an automated external defibrillator (AED). Successful course completion will give the individual office certification in CPR/AED for the Professional Rescuer and certification in First Aid Basics.

PHYED-248 **Credits: 1**
Weight Training and Aerobic Fitness 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 diverse variety of cardiovascular exercise methods also is covered.

PHYED-249 **Credits: 1**
Weight Training and Aerobic Fitness 2
This course provides students with advanced strategies to improve their overall fitness. Included are demonstrations and activities involving warm-up procedures, stretching, resistance training, aerobic training and recovery.

PHYED-255 **Credits: 1**
Body Toning and Resistance Training 1
Specific techniques of body toning along with progressive resistance exercises are the focus of this course. 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-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 course is a continuation of aerobic dance exercise and 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
In this course, students explore and participate in practical green (Earth-friendly) physical activities that help to utilize human energy to reduce our carbon footprint from mechanical and industrial behaviors.

PHYED-268 **Credits: 1**
Fitness Walking 1
This course introduces 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 advanced life-long 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.

PLEGAL – Paralegal
(Department: 110)

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, and 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 admitted to Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

PLEGAL-105 **Credits: 3**
Civil Procedure
This course 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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

PLEGAL-111 **Credits: 3**
Litigation Practice Systems
This course is a study of the procedures involved and the documents that may be used in 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 and investigative techniques, settlement procedures and trial preparation. Prerequisite(s): PLEGAL-101 and admitted to Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

PLEGAL-114 **Credits: 3**
Trusts and Estates – Probate Systems
Students learn the fundamental principles of estate planning, wills and trusts as well as the essential processes of formal and informal probate using Wisconsin law as a perspective. Estate and gift taxation also are explored by the student. Prerequisite(s): PLEGAL-101 and admitted to Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

PLEGAL-118 **Credits: 3**
Criminal Practice
The course 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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 admitted to Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

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 Paralegal (10-110-1) program or Paralegal Studies (30-110-2) program.

PLUMB – Plumbing
(Department: 427)

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
This course 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 they have gained and the skills they have learned to practical design and construction of complete plumbing installations. They also will 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 is designed to present 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 is designed to provide students with an opportunity to apply plumbing practices in a shop or actual work setting. The course requires students 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/acetylene cutting methods.

PLUMB-309 **Credits: 2**
Applied Drawing for Plumbers 2
This course is designed to provide students with experience in drawing. This 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 course is designed to provide students with first aid/CPR 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 is designed to provide students with word processing, PowerPoint, spreadsheet and internet skills. Students will have an opportunity to apply computer skills in various learning activities.

POLICE – Police Science
(Department: 504)

POLICE-115 **Credits: 3**
Criminal Evidence
This course describes the constitutional principles and the federal and state laws governing the admissibility of evidence into the judicial system. It also describes the procedures used in the collection, preservation, examination and presentation of evidence in a trial. Prerequisite(s): POLICE-901.

POLICE-144 **Credits: 3**
Law Enforcement Internship 1
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 (minimum grade of C is required).

POLICE-145 **Credits: 3**
Law Enforcement Internship 2
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 3.0 or better 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 (minimum grade of C).

POLICE-160 **Credits: 3**
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.

POLICE-161 **Credits: 3**
Ethics in Law Enforcement
Course provides a basic understanding of the theoretical foundations of ethical thoughts. Diverse ethical perspectives will be used to analyze and compare relevant issues in law enforcement. Student will critically evaluate individual, social and/or professional standards of behavior within society/law enforcement and also apply a systematic decision-making process to these situations.

POLICE-162 **Credits: 3**
Sensitive Crimes
Student will identify what a sensitive crime is and responsibilities of law enforcement in dealing with victims of these crimes. Student will learn of resources and remedies available to these vulnerable victims. Student also will learn about crimes related to violence against women and exploitation of children from a local and global perspective. Prerequisite(s): POLICE-902, POLICE-906.

POLICE-163 **Credits: 3**
Interview and Interrogation
Student will learn the legal issues that define the interviewing of subjects, both in public and 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. Prerequisite(s): POLICE-900, POLICE-902, POLICE-905.

POLICE-164 **Credits: 3**
Law Enforcement Employability
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.

POLICE-165 **Credits: 3**
Introduction to Corrections
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.

POLICE-380 **Credits: 2**
Overview of Investigations
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Constitutional Law I, Crimes I, Juvenile Law I, Interviews, Report Writing, and Physical Evidence.

POLICE-381 **Credits: 3**
Principles of Tactics
Through classroom lecture and on-campus lab, students will learn and apply skills addressed in the following Phase II topics from the Department of Justice 720 Academy curriculum frameworks: DAAT and Firearms II. The Phase II Written Examination will be administered during this course.

POLICE-382 **Credits: 2**
Application of Investigations
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Phase II topics of the Department of Justice 720 Academy curriculum framework: Ethics II: Moral Reasoning and Professional Responsibility, Cultural Competence II: Fair and Impartial Policing, Victims, Sexual Assault, Child Maltreatment, Interrogations, Testifying in Court, and Crimes III.

POLICE-383 **Credits: 2**
Principles of Investigation
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Phase II topics of the Wisconsin Department of Justice 720 Academy curriculum framework: Constitutional Law II, Crimes II, Domestics, and Report Writing.

POLICE-384 **Credits: 1**
Overview of Tactics
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Fundamentals of Firearms, Vehicle Contacts I, Officer Wellness, and DAAT. The DOJ Phase I Written Examination will be administered in this course.

POLICE-385 **Credits: 2**
Overview of Patrol Response
Through classroom lecture, on-campus lab and Wisconsin Department of Justice integration exercises, students will learn and apply skills addressed in the following Wisconsin Department of Justice 720 Academy curriculum framework Phase I topics: Critical Thinking and Decision-Making, Basic Response (RESPOND), Radio Procedures, Introduction to TraCS, Traffic Law Enforcement, and First Aid/CPR/AED. This course also will include the Wisconsin DOJ 720 Academy Integration Exercises.

POLICE-386 **Credits: 2**
Application of Traffic Response
Through classroom lecture and on-campus lab, students will learn and apply skills addressed in the following Phase III topics from the Wisconsin Department of Justice 720 Academy curriculum framework: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations and Incident Management, Operating a Motor Vehicle While Intoxicated (OMVWI), Standardized Field Sobriety Tests (SFST), and Report Writing. A Phase II Written Examination also will be administered in this course.

POLICE-387 **Credits: 1**
Health and Fitness
Through classroom lecture and on-campus lab, students will apply Phases I-III Health Fitness Wisconsin Department of Justice 720 Academy curriculum framework program requirements.

POLICE-388 **Credits: 2**
Principles of Patrol Response
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Wisconsin Department of Justice 720 Academy curriculum framework Phase II topics: Professional Communication Skills II, Incident Command Systems and NIMS, Hazardous Materials and WMD, Tactical Response, Crisis Management, and Tactical Emergency Casualty Care.

POLICE-389 **Credits: 2**
Principles of Emergency Vehicle Response
Through classroom lecture, on-campus lab and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy Phase II topics: Emergency Vehicle Operation and Control (EVOC) and Vehicle Contacts II.

POLICE-390 **Credits: 1**
Overview of Criminal Justice
Through classroom lecture and Wisconsin Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Wisconsin Department of Justice 720 Academy Phase I curriculum framework topics: Academy Orientation, Fundamentals of Criminal Justice, Ethics, Cultural Competency, Agency Policy, and Professional Communication.

POLICE-900 **Credits: 3**
Introduction to Criminal Justice
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. Introduction to 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.

POLICE-902 **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. 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 **Credits: 3**
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 and interrogation skills also are addressed in this context. Prerequisite(s): POLICE-900, POLICE-901, POLICE-902, POLICE-904, POLICE-906, POLICE-907, POLICE-908; can take POLICE-905 concurrently.

POLICE-904 **Credits: 3**
Juvenile Law
Student will 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-900.

POLICE-905 **Credits: 3**
Report Writing
Student will learn to produce reports necessary for operations in law enforcement and the judicial system. Students also will 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-906 **Credits: 3**
Criminal Investigation Theory
Student will learn the role of evidence in criminal investigation and prosecution, and the proper methods of identifying, documenting and recovering evidence. Student will learn methods and strategies related to interviews of witnesses and specific serious criminal offenses. Prerequisite(s): POLICE-901.

POLICE-907 **Credits: 3**
Community Policing Strategies
Student will be introduced to strategies employed to implement the community policing model of law enforcement in use today. Student will learn how law enforcement can work with the community as partners to the benefit of each entity through proactive approaches that lead to reduction of criminal activities.

POLICE-908 **Credits: 3**
Traffic Theory
Student will learn Wisconsin traffic laws, and will investigate and document traffic crashes using current citation and forms. Student also will learn to recognize and interpret indicators of impaired driving and what actions are to be taken.

POWENG – Power Engineering (Department: 428)

POWENG-330 **Credits: 1**
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 are covered. Licensing agency is the American Society of Power Engineers.

POWENG-331 **Credits: 2**
High Pressure Boilers
This class will prepare students to write the American Society of Power Engineers Facility Operating 2nd Class licensing exam. This class also will 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. Also covers basic electricity, boiler operation, water treatment programs, cooling towers, traps, strainers and burner management systems.

POWENG-332 **Credits: 1**
Boiler Operation
This class introduces the student to climate change and the different types of renewable energy in practice today. Emphasis will be on photovoltaic energy. Measurements and comparisons between conventional power generation and alternatives will be studied.

POWENG-333 **Credits: 3**
Plant Maintenance and HVAC Basics
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 **Credits: 1**
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 also will be covered.

POWENG-335 **Credits: 3**
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.

POWENG-336 **Credits: 1**
Math for Power Engineers
This class contains practical applications commonly used in a variety of industries and trades. The class covers math concepts and how they are applied in boiler operation, HVAC, construction, and manufacturing. Measuring in whole numbers and fractions is studied. Percentages and word problems are geared toward the everyday situations that workers find themselves in. Weekly quizzes and a comprehensive final exam are part of the learning experience.

POWENG-395 **Credits: 3**
Electricity for Power Engineering
Basic fundamentals of electricity in the power engineering field of facility maintenance, equipment operation, and repair and power generation.

PSYCH – Psychology
(Department: 809)

PSYCH-159 **Credits: 3**
Abnormal Psychology
The course surveys the essential features, possible causes, and assessment and treatment of the various types of abnormal behavior from the viewpoint of the major theoretical perspectives in the field of abnormal psychology. Students will be introduced to the diagnosis system of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). In addition, the history of the psychology of abnormality will be traced. Cultural and social perspectives in understanding and responding to abnormal behavior will be explored, as well as current topics and issues within abnormal psychology.

PSYCH-188 **Credits: 3**
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-199 **Credits: 3**
Psychology of Human Relations
Explores the relationship between the general principles of psychology and our everyday lives. Students are given the opportunity to achieve a deepened sense of awareness of themselves and others. This understanding enables students to improve their relationships with others at work, in the family and in society.

PSYCH-230 **Credits: 3**
Cross Cultural Psychology
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 **Credits: 3**
Introductory Psychology
This introductory psychology course presents a contemporary survey of the multiple aspects of human behavior. It includes various theoretical foundations of human functioning in areas such as methodology, physiological factors, memory, human development, motivation, stress management, personality and pathology.

PSYCH-232 **Credits: 3**
Abnormal Psychology
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 **Credits: 3**
Social Psychology
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-237 **Credits: 3**
Child Psychology
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 socioenvironmental factors. Prerequisite(s): PSYCH-199 or PSYCH-231.

PSYCH-238 **Credits: 3**
Lifespan Psychology
This is the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive and psychosocial changes that affect the individual from conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others.

PSYCH-240 **Credits: 3**
Health Psychology
Students examine how psychosocial and behavioral factors influence health and disease processes. They also will analyze the relationship of individual and environmental factors to the development and management of specific diseases. Prerequisite(s): PSYCH-199, PSYCH-231, PSYCH-134, or PSYCH-238.

PSYCH-270 **Credits: 3**
Educational Psychology
Educational Psychology is the study of how students learn, the effectiveness of particular teaching techniques, the dynamics of school populations, and the psychology of teaching.

PTASST – Physical Therapy Assistant (Department: 524)

PTASST-139 **Credits: 4**
PTA Patient Interventions
An introduction to basic skills and physical therapy interventions performed by the physical therapist assistant. Prerequisite(s): Must be admitted to the Physical Therapist Assistant (10-524-1) program.

PTASST-140 **Credits: 2**
PTA Professional Issues 1
Introduces the history and development of the physical therapy program, legal and ethical issues, the interdisciplinary healthcare team and professional communication skills. Prerequisite(s): Must be admitted to the Physical Therapist Assistant (10-524-1) program.

PTASST-142 **Credits: 3**
PTA Therapeutic Exercise
Provides instruction on the implementation of a variety of therapeutic exercise principles. Learners implement, educate, adapt and assess responses to therapeutic exercises. Prerequisite(s): PTASST-156 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 as a PTA. Prerequisite(s): PTASST-139, PTASST-156.

PTASST-144 **Credits: 4**
PTA Principles of Neuromuscular Rehabilitation
Integrates concepts of neuromuscular pathologies, physical therapy interventions and data collection in patient treatment. Prerequisite(s): PTASST-139, PTASST-142, PTASST-157.

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-139, PTASST-156.

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-142, PTASST-157.

PTASST-147 **Credits: 2**
PTA Clinical Practice 1
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-157.

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-157.

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, PTASST-148.

PTASST-150 **Credits: 2**
PTA Professional Issues 2
Incorporates professional development, advanced legal and ethical issues, healthcare management and administration, and further development of professional communication strategies. Prerequisite(s): PTASST-140, 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, PTASST-148.

PTASST-156 **Credits: 4**
PTA Applied 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): NATSCI-177 or NATSCI-201 and NATSCI-202 (minimum grade of B-). Must be admitted to the Physical Therapy Assistant (10-524-1) program.

PTASST-157 **Credits: 3**
PTA Applied Kinesiology 2
Applies basic principles from PTA Kinesiology 1 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-139, PTASST-140, PTASST-156.

QETECH – Quality Engineering Technology (Department: 623)

QETECH-118 **Credits: 3**
Lean Principles
Students will identify and apply Lean tools to streamline business processes. Topic areas include Value Stream Mapping, Layout, 5S Workplace Organization, Point of Use Storage, Visual Controls, Standard Work, Cellular and Flow Concepts, Lean Culture, Pull/Kanban Systems, Error-Proofing, and Total Productive Maintenance.

QETECH-132 **Credits: 3**
Six Sigma Green Belt 1
Provides the student with the skills and abilities to apply the Six Sigma methodology (Define/Measure/Analyze/Improve/Control). Six Sigma is a strategic approach to implementing quality, process, and business efficiency improvement through the use of statistical and other analytic tools. Topic areas include problem and metric definition, project management, team dynamics, process mapping, investigative tools, process analysis and capability, and gage R&R studies. Prerequisite(s): BADM-104 or MATH-260.

QETECH-134 **Credits: 3**
Six Sigma Green Belt 2
Provides the student with the skills and abilities to apply the Six Sigma methodology (Define/Measure/Analyze/Improve/Control). Six Sigma is a strategic approach to implementing quality, process, and business efficiency improvement through the use of statistical and other analytic tools. Topic areas include further statistical analysis and hypothesis testing, correlation and regression, statistical process control, methods to implement solutions, solutions validation and control plans. Prerequisite(s): QETECH-132.

QETECH-138 **Credits: 3**
Introduction to Quality Engineering
Studies principles and techniques of quality engineering in management, production, and assurance of quality. Emphasizes fundamentals of total quality assurance for products, service and process control including fundamentals of statistics, sampling, control charts, quality reporting, process capability analysis, tool and gage control, document control, standards and continuous improvement methods. Prerequisite(s): BADM-104 or MATH-260.

QETECH-142 **Credits: 3**

Six Sigma Green Belt Project

Data collection and methods capstone project. Student will apply the Six Sigma problem-solving methodology to a real problem in their place of employment or through service learning. An emphasis will be placed on team skills, project deliverables, project, time and constraint management, and selection of appropriate tools and statistical techniques. Students will select one or more of four concentrations in healthcare, manufacturing, business operations, or environmental and social responsibility. Prerequisite(s): QETECH-132, QETECH-134.

QETECH-144 **Credits: 3**

Supplier Quality Assurance

This course provides students with the knowledge to determine acceptance criteria, evaluate and select new suppliers, assist in supplier development, monitor supplier performance, and risk management (price variances, quality variability or delivery slippages). Includes the process to develop, implement and maintain an effective supplier nonconformance program in the organization. Prerequisite(s): BADM-104 or MATH-260.

QETECH-152 **Credits: 3**

Six Sigma Black Belt Tools and Concepts

This course provides the student with the knowledge to achieve the level of Six Sigma – Black Belt. Students are expected to possess additional proficiency in identifying project deliverables, selecting appropriate tools to determine customer requirements, benchmarking, change management, reliability, hypothesis testing, non-parametric data, design of experiments and statistical process control through the DMAIC process. The concepts of Design for Six Sigma (DFSS) to "build quality in" at the design stage also will be introduced. Prerequisite(s): QETECH-132, QETECH-134.

QETECH-192 **Credits: 1**

Lean Principles 1

Students will identify and apply Lean tools to streamline business processes. Topic areas include Value Stream Mapping, Layout, 5S Workplace Organization, Point of Use Storage, Visual Controls, Standard Work, Cellular and Flow Concepts, Lean Culture, Pull/Kanban Systems, Error-Proofing, and Total Productive Maintenance.

QETECH-193 **Credits: 1**

Lean Principles 2

Students will identify and apply Lean tools to streamline business processes. Topic areas include Value Stream Mapping, Layout, 5S Workplace Organization, Point of Use Storage, Visual Controls, Standard Work, Cellular and Flow Concepts, Lean Culture, Pull/Kanban Systems, Error-Proofing, and Total Productive Maintenance.

QETECH-194 **Credits: 1**

Lean Principles 3

Students will identify and apply Lean tools to streamline business processes. Topic areas include Value Stream Mapping, Layout, 5S Workplace Organization, Point of Use Storage, Visual Controls, Standard Work, Cellular and Flow Concepts, Lean Culture, Pull/Kanban Systems, Error-Proofing, and Total Productive Maintenance.

QLTYIN – Quality Interdisciplinary (Department: 625)

QLTYIN-103 **Credits: 1**

MSSC – 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 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.

QLTYIN-104 **Credits: 1**

MSSC – 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 covered in the MSSC Quality module, and students that successfully complete the associated national exam will be awarded the nationally recognized MSSC Certified Production Technician Quality credential.

QLTYIN-105 **Credits: 1**

MSSC – Process

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 Manufacturing Processes credential.

QLTYIN-106 **Credits: 1**

MSSC – 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 Maintenance credential.

RADT – Radiologic Technology (Department: 526)

RADT-149 **Credits: 5**

Radiographic Procedures 1

This course prepares radiography students to perform routine radiologic procedures on various parts of the body including the upper body, hip, pelvis and ankle. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired results. Prerequisite(s): Must be admitted to the Radiography (10-526-1) program, and completion of or currently registered in NATSCI-177 or NATSCI-202.

RADT-158 **Credits: 3**

Introduction to Radiography

This course introduces students to the role of radiography in healthcare. Students apply legal and ethical considerations to patient care and pharmacology in the radiologic sciences. Prerequisite(s): Must be admitted to the Radiography (10-526-1) program and be CPR certified.

RADT-159 **Credits: 3**

Radiographic Imaging 1

This course introduces radiography students to the process of creating radiographic images. Students determine the factors that affect image quality including contrast, density and distortion. Students apply OSHA standards for health and safety in the darkroom. Prerequisite(s): Must be admitted to the Radiography (10-526-1) program.

RADT-168 **Credits: 2**

Radiography Clinical 1

This beginning-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. Prerequisite(s): Must be admitted to the Radiography (10-526-1) program.

RADT-174 **Credits: 2**

ARRT Certification Seminar

This course provides preparation for the national certification examination prepared by the American Registry of Radiologic Technologists. Emphasis is placed on the weak areas of the individual students. Simulated registry examinations are utilized. Prerequisite(s): Must be admitted to the Radiography (10-526-1) program.

RADT-189 **Credits: 1**

Radiographic Pathology

Prepares radiography students to determine the basic radiographic manifestations of pathological conditions. Students classify

trauma related to site, complications and prognosis, and locate the radiographic appearance of pathologies. Prerequisite(s): RADT-191.

RADT-190 **Credits: 2**
Radiography Clinical 5
This fifth-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.

RADT-191 **Credits: 5**
Radiographic Procedures 2
This course prepares radiography students to perform routine procedures on various parts of the body including the skull and spine. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired results. Prerequisite(s): RADT-149, RADT-158, RADT-159, RADT-168.

RADT-192 **Credits: 3**
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.

RADT-193 **Credits: 3**
Radiography Clinical 3
This third-level clinical course prepares radiography students to perform radiologic procedures on patients, with supervision and direction. Students apply radiation protection and standards precautions in the production of radiographs in a healthcare setting while adhering to legal and ethical guidelines. An emphasis of the course is the demonstration of communication and critical thinking skills appropriate to the clinical setting. Prerequisite(s): RADT-191, RADT-192, RADT-230.

RADT-194 **Credits: 3**
Imaging Equipment Operation
This course introduces radiography students to the principles and application of X-ray technology. Students analyze how X-rays are produced and determine the corrective actions necessary for common equipment malfunctions.

RADT-195 **Credits: 2**
Radiographic Quality Analysis
Prepares radiography students to analyze radiographic images for quality. Students apply quality control tests to determine the causes of image problems including equipment malfunctions and procedural errors.

RADT-197 **Credits: 3**
Radiation Protection and Biology
This course prepares radiography students to protect themselves and others from exposure to radioactivity. Students examine the characteristics of radiation and how radiation affects cell biology. Students apply standards and guidelines for radiation exposure. Prerequisite(s): RADT-194, RADT-196, RADT-199.

RADT-198 **Credits: 2**
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.

RADT-199 **Credits: 3**
Radiography Clinical 4
This fourth-level clinical course prepares radiography students to perform radiologic procedures on patients, with 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. Prerequisite(s): RADT-193.

RADT-230 **Credits: 2**
Advanced Radiographic Imaging
Explores the factors that impact image acquisition, display, archiving and retrieval. Guidelines for selecting exposure factors and evaluating images within digital systems are discussed. Principles of digital system quality assurance and maintenance are presented.

RADT-231 **Credits: 2**
Imaging Modalities
Introduces radiography students to imaging modalities with an emphasis in computed tomography and cross-sectional anatomy. Prerequisite(s): RADT-191, RADT-193, RADT-230.

RBUS – Related Business (Department: 105)

RBUS-102 **Credits: 3**
Mathematics of Business
Students develop techniques to efficiently and accurately calculate business applications of checking accounts, bank reconciliation, percentage formula, rate and amount of increase and decrease, payroll, invoices, trade discounts, cash discounts, markup, markdown, interest, credit and loans.

RBUS-111 **Credits: 3**
Business Communications
Students analyze communication situations to plan, draft and complete effective messages for both print and electronic delivery (including IM, voice messaging and blogging). Emphasis is on the application of strategies to prepare ethical, receiver-oriented messages for diverse audiences. Students may participate in team activities to develop skills critical for today's business environment. Prerequisite(s): ENG-196, ENG-197 or any 200-level ENG or SPEECH course.

RBUS-141 **Credits: 3**
Legal Terminology and Court Structure
This course stresses the development and usage of a basic legal vocabulary, explains the structure of federal and state court systems, and explains proper preparation of court papers and legal instruments.

RBUS-175 **Credits: 1**
Career Experience
This course is a cooperative training program that allows students to observe and apply in a practical manner the principles and techniques of their career field. Prerequisite(s): INTRN-796, RBUS-180 or MKTG-151.

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 lecture, films, handouts, guest speakers and field trips, overall guidelines are provided for total professional development.

RDIAT – Renal Dialysis (Department: 517)

RDIAT-302 **Credits: 3**
Renal Failure and Support Therapies
After a review of normal renal anatomy and physiology, the student is introduced to pathological changes and/or conditions of the renal system and the effects of these changes on patients with ESRD. Treatment modalities also are discussed. Prerequisite(s): HEALTH-101, RDIAT-321.

RDIAT-304 **Credits: 1**
Hemodialysis Laboratory Procedures
This laboratory course provides the student with hands-on experiences in learning the technical skills required to function as a renal dialysis technician. Prerequisite(s): HEALTH-101, RDIAT-321, and completion of or concurrent registration in RDIAT-302.

RDIAT-320 **Credits: 3**
Introduction to Renal Dialysis
This lecture/laboratory course introduces students to healthcare concepts, basic patient care skills, infection control procedures, dialysis-related math applications, chronic illness and the grieving process. It also covers the renal dialysis technician's role within the healthcare system as it relates to personal/vocational perspectives. Prerequisite(s): Admission to the Renal Dialysis (31-517-1) program.

RDIAT-321 **Credits: 4**
Principles of Renal Dialysis 1
This lecture/laboratory/clinical course is designed to introduce students to normal and abnormal renal anatomy and physiology, renal failure, dialysis, vascular access and basic concepts of laboratory testing as related to hemodialysis and End Stage Renal Disease (ESRD). During this course, students are given the opportunity to observe, assist and perform skills in an assigned clinical facility. Prerequisite(s): RDIAT-320.

RDIAT-322 **Credits: 3**
Principles of Renal Dialysis 2
This lecture course provides students with the in-depth principles and procedures of hemodialysis. Patient observations, patient care skills, safety, infection control, quality management, complications of dialysis, reprocessing and peritoneal dialysis are discussed. Career opportunities and interviewing skills also are discussed. Prerequisite(s): HEALTH-101, RDIAT-321, and completion of or concurrent registration in RDIAT-304.

RDIAT-323 **Credits: 2**
Clinical Practicum 1
This course provides students with the opportunity to apply the principles and procedures of the Hemodialysis Delivery System with ESRD patients. Students observe, assist and/or perform skills in affiliating dialysis units. Prerequisite(s): HEALTH-101, RDIAT-321, and completion of or concurrently enrolled in RDIAT-302, RDIAT-304, RDIAT-322.

RDIAT-324 **Credits: 3**
Clinical Practicum 2
This course provides students with an opportunity to continue to observe, assist and/or perform and perfect dialysis delivery system procedures in affiliating dialysis units. Prerequisite(s): RDIAT-304, RDIAT-323.

RESPC – Respiratory Therapist (Department: 515)

RESPC-111 **Credits: 3**
Respiratory Survey
Examines the role of the respiratory therapist within the healthcare community. 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. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): Admission to the Respiratory Therapist (10-515-1) program.

RESPC-112 **Credits: 2**
Respiratory Airway Management
Provides a comprehensive exploration of airway management concepts and skills. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): Completion of or currently enrolled in RESPC-174.

RESPC-113 **Credits: 3**
Respiratory Life Support
Focuses on management of adult ventilatory support. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): RESPC-172, RESPC-175, and completion of or currently enrolled in RESPC-112.

RESPC-145 **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-113.

RESPC-171 **Credits: 3**
Respiratory Therapeutics 1
Introduces the topics of medical gas administration and humidity and aerosol therapy. The learner will apply physics, math and patient assessment concepts to oxygen, aerosol and humidity therapy. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): Admission to the Respiratory Therapist (10-515-1) program, and completion of or currently enrolled in RESPC-111 and NATSCI-177 or NATSCI-202.

RESPC-172 **Credits: 3**
Respiratory Therapeutics 2
Introduces therapeutic procedures including arterial puncture, bronchial hygiene, lung expansion therapy, and pulmonary rehabilitation. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): Admission to the Respiratory Therapist (10-515-1) program, and completion of or currently enrolled in RESPC-171.

RESPC-173 **Credits: 3**
Respiratory Pharmacology
Examines basic pharmacology principles, drug dosage, and calculations. Medications for inhalation including mucolytics, bronchodilators, and anti-inflammatories. Also includes cardiac drugs, anesthetic drugs, neuromuscular blockers, and antimicrobials. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): NATSCI-177 or NATSCI-202. Completion of or currently enrolled in RESPC-111.

RESPC-174 **Credits: 3**
Respiratory/Cardiac Physiology
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. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): NATSCI-177 or NATSCI-202. Admitted to the Respiratory Therapist (10-515-1) program.

RESPC-175 **Credits: 2**
Respiratory Clinical 1
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. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. This course includes the complete program competency list. At the completion of this clinical, learners 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. Prerequisite(s): RESPC-111, and completion of or currently enrolled in HEALTH-101, RESPC-171 and RESPC-172.

RESPC-176 **Credits: 3**

Respiratory Disease

Exploration of signs, symptoms, causes, progression, and treatment of diseases or disorders of the body that affect the respiratory cardiopulmonary system. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): RESPC-111, and completion of or currently enrolled in RESPC-174.

RESPC-178 **Credits: 3**

Respiratory Clinical 2

Continued development of respiratory therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 12 (required and/or simulated) competencies (cumulative through all clinical courses). 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-175.

RESPC-179 **Credits: 3**

Respiratory Clinical 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. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 19 (required and/or simulated) competencies (cumulative through all clinical courses). 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 the Respiratory Therapist (10-515-1) program.

RESPC-180 **Credits: 2**

Respiratory Neonatal/Pediatrics Care

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. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): Admitted to the Respiratory Therapist (10-515-1) program, and completion of or currently enrolled in RESPC-113.

RESPC-181 **Credits: 3**

Respiratory/Cardio Diagnostics

Advanced invasive and noninvasive diagnostic cardiopulmonary procedures including pulmonary function, hemodynamics and rescue medicine. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. Prerequisite(s): RESPC-173, and completion of or currently registered for RESPC-113 and RESPC-176. Must be admitted the Respiratory Therapist (10-515-1) program.

RESPC-182 **Credits: 3**

Respiratory Clinical 4

Continued development of respiratory therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 26 (required and/or simulated) competencies (cumulative through all clinical courses). 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 the Respiratory Therapist (10-515-1) program, RESPC-179, and completion of or currently enrolled in RESPC-113.

RESPC-183 **Credits: 3**

Respiratory Clinical 5

Focuses on the completion of respiratory therapy competencies and transition to employment. Emphasis is placed on promotion of evidence-based practice using established clinical practice guidelines and published research for its relevance to patient care. This course includes the complete program competency list. At the completion of this clinical, learners 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 the Respiratory Therapist (10-515-1) program, and RESPC-182.

RLEST – Real Estate
(Department: 194)

RLEST-175 **Credits: 3**

Technical Writing for Home Inspectors

Students will engage in hands-on technical writing tasks in order to be able to plan, design and execute well-developed documents for real estate-related transactions using construction terms. These include various forms, business letters and marketing materials to be used in the home inspection business.

RLEST-180 **Credits: 3**

Principles of Real Estate

This course, in addition to Real Estate Law (RLEST-182), satisfies the educational licensing requirement that must be met prior to taking the State of Wisconsin Real Estate Salesperson Exam. The content of the course will address agency/brokerage, title and deeds, finance appraisal, homeownership, economics of real estate, government limitation, forms and contracts.

RLEST-181 **Credits: 3**

Principles of Commercial Real Estate

This course covers the broad area of commercial property, which includes retail facilities, office buildings, mini-storage and warehouses, as well as apartment complexes. Areas to be addressed include: listing, leasing, financing, marketing, buying, selling, valuation, and the advantages of specialization. The difference between commercial and residential building, as a real estate professional and as an investor, will be emphasized.

RLEST-182 **Credits: 3**
Real Estate Law
This course, in addition to Principles of Real Estate (RLEST-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 also will be covered.

RLEST-183 **Credits: 3**
Real Estate Broker Preparation
The course satisfies the educational requirement for the State of Wisconsin Real Estate Brokers Exam. The course will focus on closing a transaction; the responsibilities of a broker including: employer and human resources, supervision and leadership, managing liability and risk, and disclosure duties. A real estate business, as a business, includes: trust accounts, special issues from Starker Exchanges, auctions, foreclosures, and short sales. Instruction also includes familiarity with all of the forms and contract options.

RLEST-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 also are examined. Government controls from the HUD-1 to the RESPA rules are covered. This is an ever-changing industry with many opportunities and complications.

RLEST-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.

RLEST-187 **Credits: 3**
Broker Management
This course plus RLEST-183 Real Estate Broker Preparation will meet the requirements for the State of Wisconsin licensing as a real estate broker. The course will cover in depth all the State of Wisconsin real estate forms, contracts and documents. A heavy focus will be on the management of a real estate brokerage business. This would include business management, financial management, office management and employee or agent management. Another important area that will be covered in depth is the duties of a broker and ethics. We will look at these components considering industry standards and regulatory requirements.

RLEST-188 **Credits: 3**
Listing, Selling and Sales Tools
Broker/salesperson relationships and office/listing procedures are studied. Client responsibility and property information disclosure are examined. Listing contract, offer to purchase, advertising sales plans/presentation also are reviewed. Current sales and marketing of real estate are reviewed.

RLEST-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 also are addressed in this class.

RLEST-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.

RLEST-191 **Credits: 3**
Residential Plumbing for Inspectors
This course focuses on passing the State of Wisconsin Uniform Dwelling Code Plumbing Inspector Exam. All plumbing code material on the exam will be covered in class including pipe sizing, water distribution, and waste systems and cross connection.

RLEST-192 **Credits: 3**
Uniform Dwelling Code Construction for Inspectors
This course focuses on the Uniform Dwelling Code of the State of Wisconsin Department of Commerce and prepares students for the Department of Commerce Uniform Dwelling Code – Construction Inspector Certification Exam.

RLEST-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.

RLEST-194 **Credits: 3**
UDC Heating, Venting and Air Conditioning for Inspectors
This course focuses on the Uniform Dwelling Code of the State of Wisconsin Department of Commerce and prepares students for the Department of Commerce Uniform Dwelling Code – Heating, Ventilating and Air Conditioning Inspector Certification Exam.

RLEST-197 **Credits: 3**
Commercial Building Code for Inspectors
This course focuses on the Wisconsin Commercial Building Code of the State of Wisconsin Department of Commerce and prepares students for the Department of Commerce Commercial Building Inspector Certification Exam.

SOCSCI – Sociology Science (Department: 809)

SOCSCI-103 **Credits: 3**
Think Critically and Creatively
This course provides instruction in the vital, realistic and practical methods of thinking, which are in high demand in all occupations of substance today. Decision-making, problem-solving, detailed analysis of ideas, troubleshooting, argumentation, persuasion, creativity, setting goals and objectives, and more are considered in depth as the student applies specific thinking strategies and tools to situations in a wide variety of workplace, personal, academic and cultural situations. Classroom instruction is demonstration, discussion, project and teamwork based. Assignments range from short and simple to the detailed and complex. Reality and practicality are the focuses all through the course. These skills are in high demand by employers. Having this course in your background can significantly enhance your appeal as an employee. It certainly will make you a more adept and confident person.

SOCSCI-149 **Credits: 3**
Ethics for the Professions
This course surveys the range of ethical theories relevant in ethics today. Critical discussions cover a range of approaches to the ethical dilemmas of various professions, such as health, human services, and business and industry. Students will select an ethical theory to support the Code of Ethics for their profession.

SOCSCI-172 **Credits: 3**
Introduction to Diversity Studies
Introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored.

SOCSCI-197 **Credits: 3**
Contemporary American Society
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 expand students' use of thinking skills, enabling them to advocate positions and participate fully in a democracy.

SOCSCI-200 **Credits: 3**
Introduction to Ethical Issues
Introduction to Ethical Issues is a course that surveys 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, and from community or local interest to the larger worldview.

SOCSCI-203 **Credits: 3**
Introduction to Sociology
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.

SOCSCI-204 **Credits: 3**
Marriage and the Family
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.

SOCSCI-206 **Credits: 3**
Introduction to Cultural Anthropology
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.

SOCSCI-207 **Credits: 3**
Introduction to Criminology
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.

SOCSCI-208 **Credits: 3**
Global Cultures and Politics
The goal of the course is to introduce students to a wide range of issues and concepts related to globalization from a cultural perspective. Students will be exposed to some of the pressing problems related to globalization that face humanity. Through the course readings and class discussions, students will explore how they can find solutions to these problems. Major theories and cross-cultural demonstrations of globalization will be examined. Central to the course is how social actors and their communities respond to globalization processes, and how globalization has affected cultural values, politics and human behaviors.

SOCSCI-209 **Credits: 3**
Sociology of Religion
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.

SOCSCI-210 **Credits: 3**
Death and Dying
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.

SOCSCI-211 **Credits: 3**
Introduction to Women's Studies
This course is an introduction to understanding the world through diverse experiences of women. Together we will examine gender experience in both the public and private realms of society, in popular culture and in institutions such as the workplace, the family and the state. The course focuses on the social construction of gender, race, class and sexual identity, and the interlocking nature of these forms of oppression. Students will become familiar with women's and gender studies scholarship and attain tools to connect what one learns to one's life and to further academic study. We will pay special attention to how gender and sexuality vary across ethnic, racial and class lines. Reading assignments cover a wide range of perspectives and attempt to represent both classic writings in women's studies, recent women's studies scholarship and women's own accounts of their life experiences. Writing assignments will emphasize learning by doing. Students will come away with tools for both critical analysis of gender in society and for creating positive social change.

SOCSCI-214 **Credits: 3**
Gender and Society
Exploration of the social roles which are ascribed to females and males within society and the social behavior expected within the constraints of femininity and masculinity. Exploration of the social processes of creating, maintaining and changing sex/gender roles through the analysis of social institutions and social structures, using both theoretical and experiential perspectives. Students will become familiar with the social forces that help construct personal identity and consciousness and 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 the historical roots of gender, being presented. Sociological theories will be considered as explanatory tools for understanding the impact of gender and its resulting imperative responsibilities and problems.

SOCSCI-217 **Credits: 3**
Valuing Diversity
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.

SOCSCI-221 **Credits: 3**
American National Government and Politics Today
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.

SOCSCI-222 **Credits: 3**
American State and Local Government
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.

SOCSCI-224 **Credits: 3**
Peoples and Cultures of the World
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, wherein 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.

SOCSCI-236 **Credits: 3**
Juvenile Delinquency
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.

SOCSCI-242 **Credits: 3**
African-American Social Thought and Culture
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.

SOCSCI-246 **Credits: 3**
Human Sexuality
This course focuses on the biological, psychological and social perspectives of human sexuality. It is a practical course designed to be applied to the everyday business of living, at home, in school and in the workplace.

SOCSCI-250 **Credits: 3**
Introduction to Philosophy
This course surveys the major figures and doctrines of Western philosophy from classical antiquity to present times. The course also involves discussions of fundamental philosophical questions, especially questions having practical socioethical implications.

SPEECH – Speech/ Communication (Department: 810)

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 communication styles. Students will improve their ability to communicate, both 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.

SURGT – Surgical Technology (Department: 512)

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 (minimum grade of C+), completion of or currently enrolled in HEALTH-101, and admission to the Surgical Technology (10-512-1) program.

SURGT-126 **Credits: 4**
Surgical Tech 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 the Surgical Technology (10-512-1) program, SURGT-125, and completion of or currently enrolled 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 the Surgical Technology (10-512-1) program, and completion of or currently enrolled in SURGT-125.

SURGT-128 **Credits: 4**
Surgical Tech Fundamentals 2
This course focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab and/or clinical practice is included. Prerequisite(s): HEALTH-101 (minimum grade of C), SURGT-126, SURGT-127, and completion of or currently enrolled 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 the Surgical Technology (10-512-1) program, NATSCI-197 (minimum grade of C+), either NATSCI-179 or NATSCI-202 (minimum grade of C+), and completion of or currently enrolled 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): Completion of or currently enrolled in SURGT-128 and must be admitted to the Surgical Technology (10-512-1) program.

SURGT-137 **Credits: 4**
ST Clinical Practice 1
Apply basic surgical theories, principles and procedural techniques in the operating room. Students begin to function as team members under the guidance of the instructor and authorized clinical personnel. Prerequisite(s): SURGT-128, SURGT-130, and completion of or currently enrolled 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 currently enrolled 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 currently enrolled 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, 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, SURGT-141.

SUSTN – Sustainability (Department: 481)

SUSTN-105 **Credits: 3**
The LEED Rating System
This course explores the LEED rating system, how it is being used to drive

sustainable buildings, and helps prepare students for taking the LEED Accredited Professional exam.

SUSTN-154 **Credits: 1**
Internship in Automated Building Systems
ABS program students have the option of doing an industry-based internship with area employers in lieu of the capstone project. Contact the department for details. The number of credits and hours may be increased if necessary to accommodate individual projects. Prerequisite(s): Instructor consent is required.

TDMKG – Tool and Die Making (Department: 439)

TDMKG-360 **Credits: 1**
Basic Die Making Technology
This course introduces students to the theories necessary to properly construct basic stamping and forming dies. Part terminology and function are integrated into the format via lecture and discussion.

TDMKG-361 **Credits: 1**
Advanced Die Making Technology
This course is a continuation of the previous course, Basic Die Making Technology. This course explores the theories necessary for proper die construction of more advanced progressive, inverted and compound dies. Prerequisite(s): TDMKG-360.

TDMKG-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), die casting and rubber molds.

TDMKG-366 **Credits: 1**
CNC Programming 2
This course instructs students in the techniques necessary for proper construction and transmission of a computerized numerical control program via a computer-aided graphics system as it is used in the field of tool and die making. Prerequisite(s): MACHTL-304.

TDMKG-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): TDMKG-366.

TDMKG-371 **Credits: 4**
Stamping Die Making 1
Skills and knowledge are developed through the production of compound die components. Die clearance, alignment, and component function are taught through practical application. Conventional CNC programming skills are introduced and developed. Prerequisite(s): MACHTL-301, MACHTL-304, MACHTL-310, MACHTL-320, MACHTL-322, MACHTL-325.

TDMKG-372 **Credits: 4**
Stamping Die Making 2
This course is a continuation of Stamping Die Making 1 with the student mounting their compound die. Students also are required to set up the die and do a trial run in an OBI press. Components for a progressive die are machined while continuing to develop skills in CNC machining, conventional machining, and surface grinding. Prerequisite(s): TDMKG-371.

TDMKG-373 **Credits: 4**
Stamping Die Making 3
Student's knowledge increases as they complete a progressive die. They learn advanced surface grinding along with wire EDM programming, setup, and operation. Die mounting skills are enhanced as they align and mount pierce, blank and cutoff punches. Prerequisite(s): TDMKG-372.

TDMKG-381 **Credits: 4**
Moldmaking 1
Skills and knowledge are enhanced through the machining of various mold components. A variety of conventional and CNC machine tools are utilized with instruction that focuses on tolerance, fitting, and final assembly. Setup and operation of the RAM EDM is introduced. Prerequisite(s): TDMKG-373.

TDMKG-382 **Credits: 4**
Moldmaking 2
This course is a continuation of Moldmaking 1 with a focus on CNC VMC programming, setup and operation, as well as mold polishing. Mold components will be produced utilizing conventional CNC mills and surfacing grinding. Mold component relationship and function are stressed. As with other moldmaking courses, the student must trial run the completed mold. Prerequisite(s): TDMKG-381.

TDMKG-383 **Credits: 4**
Moldmaking 3
Students will expand upon the moldmaking knowledge developed in the first two courses as they develop CNC programs and 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. Prerequisite(s): TDMKG-382.

TRCKDR – Truck Driving (Department: 458)

TRCKDR-341 **Credits: 3**
Truck Driving 1
Covers the laws pertaining to the CDL and operation of a commercial motor vehicle (CMV). Vehicle systems are explained. In this course, student also learns how to properly inspect a CMV and how to operate one safely. Basic operations, specific to tractor semi-trailer, will be discussed and performed. During this course, students are required to obtain Commercial Driver's License Instructional Permit. Prerequisite(s): Must be admitted to the Truck Driving (30-458-1) program. Instructor consent is required to verify the student has obtained a commercial driver's learner permit (CLP). Student also must be enrolled in TRCKDR-342 and TRCKDR-343.

TRCKDR-342 **Credits: 4**
Truck Driving 2
Further prepares students to obtain a commercial driver's license. This course focuses on improving driving skills in various situations and different environments. Vehicle maintenance and servicing issues also are explained. Additionally in this course, students will learn about all cargo-related topics. Prerequisite(s): Must be admitted to the Truck Driving (30-458-1) program. Student also must be enrolled in TRCKDR-341 and TRCKDR-343.

TRCKDR-343 **Credits: 3**
Truck Driving 3
Focuses on continuous improvement of operating skills and knowledge of a commercial motor vehicle. The roles of a professional truck driver are stressed. Rules and regulations of transportation, safety, special rigs, and hazardous materials are studied and applied. During this course, students must successfully obtain a commercial driver's license to complete this course. Prerequisite(s): Student must be admitted to the Truck Driving (30-458-1) program.

TV – Telecasting (Department: 701)

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. Prerequisite(s): Completion of or currently enrolled in TV-181 and EPROD-150.

TV-104 **Credits: 2**
TV Studio/Field Set Design
Students learn techniques in planning and creating appropriate settings for digital visual capture. Utilizing Milwaukee PBS studios, theaters and typical location scenarios, the students will understand how to create a proper visual environment for video. Prerequisite(s): Completion of or currently enrolled in TV-101.

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, and completion of or currently enrolled in TV-112.

TV-107 **Credits: 3**

Script Writing for Visual Media

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.

TV-108 **Credits: 2**

TV Studio Lighting Techniques

This course is designed to provide students with the skills necessary to produce advanced electronic art images for television. Techniques and practice include two- and three-dimensional images, animation and texture mapping in conjunction with telecasting projects.

TV-109 **Credits: 2**

Techniques for Field Audio Acquisition

This course focuses on the principles, best practices and equipment used for successfully acquiring pristine, effective audio for video/TV/digital media production. This includes understanding, choosing and operating field audio acquisition equipment (microphones, booms, mixers, etc.) as well as learning how to troubleshoot and optimize audio in the unpredictable environment of the field. Students will create their own mixes and produce projects designed to showcase solid, impactful sound. Prerequisite(s): TV-105.

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, TV-121, and completion of or currently enrolled in TV-109 and TV-142.

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): Completion of or currently enrolled in TV-101 and EPROD-150.

TV-115 **Credits: 4**

Advanced Broadcast Program Production

All elements of television production are combined to enable students to utilize a wide range of broadcast equipment in the production of both open and closed circuit television materials. Emphasis also is placed on applied media aesthetics. Prerequisite(s): TV-110, and completion of or currently enrolled in TV-119.

TV-119 **Credits: 3**

Operational Broadcast Engineering

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-101, TV-121, and completion of or currently enrolled in TV-122 or TV-123.

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 currently enrolled in TV-101.

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.

TV-123 **Credits: 3**

TV and Video Production Co-Op 1

Advanced practical video experience may be obtained through positions directly related to the student's career goals. Students may enhance their educational skills through supervised work experience in conjunction with the local broadcast, cable and/or corporate video community. Prerequisite(s): TV-121 or instructor consent.

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-122 or instructor consent.

TV-129 **Credits: 1**

AVID Editing for Premiere Editors

This course focuses on how to edit media utilizing AVID non-linear editing software for users proficient in editing with Adobe Premiere. Students will explore inputting and organizing media, video editing, audio sweetening, utilizing effects and exporting final products. Concepts and functionality familiar to those in Premiere will be translated into their AVID counterparts allowing for proficient, professional use of both programs. Prerequisite(s): Instructor consent required.

TV-131 **Credits: 1**

Premiere Editing for AVID Editors

This course focuses on how to edit media utilizing Premiere non-linear editing software for users proficient in editing with AVID. Students will explore inputting and organizing media, video editing, audio sweetening, utilizing effects, integrating Premiere with outside applications, and exporting final products. Concepts and functionality familiar to those in AVID will be translated into their Premiere counterparts allowing for proficient, professional use of both programs. Prerequisite(s): Completion of or currently enrolled in TV-142.

TV-132 **Credits: 3**

Advanced Videotape Editing

This course is designed to build upon the techniques learned in TV-130 and to provide 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-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 DVExpress Pro, Apple Final Cut Pro and AVID Adrenaline, plus outputting via DVD software will be emphasized. Prerequisite(s): TV-112.

TV-143 **Credits: 3**

Interactive Content

This course will follow TV-142 and focus 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 versus NTSC. Prerequisite(s): ANIM-156 or TV-144.

TV-144 **Credits: 3**

Graphic Design for Video Integration

This course will focus on creating graphics for use in broadcast, as well as other video applications from tape to DVD to web; and 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): WEBDEV-102.

TV-149 **Credits: 3**
MCA Co-Op 1
Advanced practical media experience may be obtained through positions directly related to student career goals. Students may enhance their educational skills through projects and assignments in collaboration with MATC's Television and Video Production students. MCA Co-op 1 focuses on integration of students in visual- and audio-related degree programs into comparable professional departments and projects. Prerequisite(s): TV-121 or instructor consent.

TV-181 **Credits: 1**
Video in Society
This orientation course is designed to familiarize the entering student with some of the employment and career opportunities and skills that he or she would acquire through the Television and Video Production program.

VICOM – Visual Communication (Department: 206)

VICOM-108 **Credits: 3**
Web Scripting Basics
This course introduces students to basic principles used in common web scripting languages. JavaScript is used to cover topics including variables, conditional statements, loops, functions and calculations. This class provides a foundation for more advanced classes.

VICOM-140 **Credits: 1**
Internship
This course prepares students to work in their field of study by giving them practical real-job experiences. The fundamentals of résumé writing, interviewing, networking and job search techniques are discussed. Students are expected to search, interview and obtain an internship during this time. Prerequisite(s): VICOM-126 and INTRN-796 (minimum grade of C).

VICOM-163 **Credits: 3**
iOS (iPhone/iPad) App Development
Students will learn the basics of the Apple's Xcode iOS Software Development Kit (SDK). Students will design several basic iPhone/iPad applications that provide the foundation for designing more advanced applications. Designing an application for Apple's mobile devices is the goal of this class. Prerequisite(s): VICOM-128, VICOM-150, and VICOM-108 or ITDEV-117.

VICOM-164 **Credits: 3**
Android Application Development
Students will learn the basics of Android application design using both visual application creation tools and Android Studio. Students will design several basic Android applications that provide the foundation for designing more advanced applications. Prerequisite(s): VICOM-128, VICOM-150, and VICOM-108 or ITDEV-117.

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. Some independent research is expected during this process. Prerequisite(s): VICOM-163, VICOM-164.

WEBDEV – Web Development/ Commercial Art (Department: 201)

WEBDEV-102 **Credits: 3**
Introduction to Digital Media
An introductory course, students work with software used in the development of media projects. An overview of graphics software such as Photoshop and Illustrator are presented. Project-based assignments provide a basic understanding of the interactive media production process.

WEBDEV-114 **Credits: 3**
Web Development With HTML/CSS
Students develop HTML5 and CSS3 skills needed for the development of functional websites. Emphasis is placed on writing code, designing with Cascading Style Sheets, file management, debugging and publishing of websites. The final project is a complete website that students will develop by writing the necessary HTML and CSS code.

WEBDEV-119 **Credits: 3**
Web Design Overview
This course focuses on web design trends and best practices. Students are introduced to the fundamental concepts as well as the technical, creative and aesthetic aspects of web design and development. Some of these concepts include: project research, information architecture, web analytics, responsive web design, web typography, graphic file formats, frameworks and content management systems. Students are encouraged to collect and utilize online resources that parallel industry standards.

WEBDEV-120 **Credits: 3**
Audio and Video Production for the Web
This course provides an overview of audio and video production techniques for developing media for the web. Deployment for YouTube a well as HTML5 audio and video controls will be covered.

WEBDEV-123 **Credits: 3**
Interactive Design
This course will explore the core design components that make up the majority of interactive visual media. Focus will be placed on the process of user-centered design, the issues of usability and the methods for evaluating various interactive interfaces. Students will be expected to participate in critiques. Prerequisite(s): WEBDEV-102 or VICOM-150.

WEBDEV-124 **Credits: 3**
Database Web Design With PHP and MySQL
Students will learn the development techniques of creating a database-driven website. Concepts will be taught in PHP and MySQL to communicate with the database and display dynamic information. Publishing a website with database capabilities is the goal of this course. Prerequisite(s): VICOM-128 or WEBDEV-114 and VICOM-108 or ITDEV-117.

WEBDEV-132 **Credits: 3**
Rich Media for the Web
This course provides students the knowledge and hands-on practice needed to integrate rich media solutions into websites.
This course focuses on web marketing principles and effective integration of animation, sound and video to implement advertising solutions. The course utilizes WYSIWYG software as well as introduces development concepts to create animation and interactivity for the web. Prerequisite(s): VICOM-123 or WEBDEV-119 and VICOM-128 or WEBDEV-114, and VICOM-152 or WEBDEV-123.

WEBDEV-133 **Credits: 3**
Content Management Systems
Students learn web development concepts as they apply to content management systems (CMS). Students will develop websites using a variety of open-source CMS tools such as WordPress and Joomla. The final project is a website that students will develop using an open-source CMS tool. Prerequisite(s): VICOM-162 or WEBDEV-124.

WEBDEV-134 **Credits: 3**
Responsive Web Design
Students learn responsive web design concepts for adaptive display on mobile devices, such as smartphones and tablets, as well as traditional monitors with various screen resolutions. Students learn about HTML5 and CSS3 media queries. Some topics include popular responsive frameworks such as Bootstrap and Foundation. The final project is the development of a complete, responsive website. Prerequisite(s): WEBDEV-114, VICOM-128 or ITDEV-160.

WEBDEV-135 **Credits: 3**
User Experience for the Web
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. Prerequisite(s): CAS-143.

WEBDEV-140 **Credits: 3**
Web Development With JavaScript/jQuery
Students learn JavaScript and how to connect to the jQuery library to develop more interactive websites. Students will learn about functions, event handlers, decision statements and other advanced coding techniques. Some topics include: image carousels, lightboxes and other dynamic features. The final project is a website that students will develop incorporating JavaScript and jQuery. Prerequisite(s): VICOM-128 or WEBDEV-114 and VICOM-108 or ITDEV-117.

WEBDEV-198 **Credits: 1**
Internship
This course prepares students to work in their field of study by giving them practical real-job experiences. The fundamentals of résumé writing, interviewing, networking and job search techniques are discussed. Students are expected to search, interview and obtain an internship during this time. Prerequisite(s): WEBDEV-134, VICOM-126 or INTRN-796.

WEBDEV-199 **Credits: 3**
Portfolio
Students prepare to market themselves in the workplace by creating a professional web-based portfolio. Students are expected to research and implement online self-promotional best practices. Ideally this class is taken during the student's final semester. Participation in an annual portfolio exhibit is required. Some independent research is expected during this process. Prerequisite(s): VICOM-124 or WEBDEV-133 and VICOM-126 or WEBDEV-134.

WELD – Welding
(Department: 442)

WELD-300 **Credits: 1**
Fundamentals of Arc Welding
The student develops fundamental knowledge and skill in the safe use of shielded metal arc welding equipment. Emphasis is on consistent bead development in the flat position with several different types of commonly used electrodes.

WELD-301 **Credits: 2**
General Arc Welding
This course involves welding in multiple positions on carbon steel using E6013, E6010 and E701B electrodes. Emphasis is on following written directions for exercises and learning to visually assess your performance to AWS standards. 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 which pertain to structural codes are covered. Prerequisite(s): WELD-301.

WELD-305 **Credits: 1**
Fundamentals of Oxyfuel Welding
Students develop a fundamental understanding and skill in the use of oxyacetylene welding equipment with an emphasis on safety. Basic joint configurations in the flat and horizontal position and oxyfuel torch cutting will be used.

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.

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 also are taught. Students also weld stainless steel sheet metal in and out of position. Prerequisite(s): WELD-306.

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 Qualification 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 Practices
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 SENSE 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-327 **Credits: 2**
Specialized Semi-Automatic Wire Welding
Welding skills are developed 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-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-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-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.

WELD-350 **Credits: 1**
GTAW Processes
Safe working habits in handling oxyfuel and gas tungsten arc equipment are developed. The principles for applying oxyfuel 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 assuring weld quality also are 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-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, square, scales, and protractors from existing drawings, written directions and sample mockups. The skills in this course transfer to the Layout and Setup 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 details, 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, material list, parts of a print, and all the conventions used in the workplace. Students will learn basic weld joints, welding symbols and knowledge of AWS standards for welding symbols.

WELD-380 **Credits: 1**
Welding Trades Mathematics
Provides a focus on mathematics used in industry including fractions, decimals, percent, tolerance, various measurements, the metric system and geometry. Students apply contextual word problems while learning numeric functions. Basic mathematical processes and use of a calculator should be known prior to taking this course.

WELDTC – Welding Technology (Department: 621)

WELDTC-101 **Credits: 2**
Welding Theory 1
This course covers the theory and application of the gas tungsten arc welding and oxyfuel welding and cutting processes. The major safety standard, ANSI Z49.1 Safety in Welding and Cutting, is studied in detail.

WELDTC-102 **Credits: 3**
Welding Theory 2
This course covers theory and process control of the major consumable arc welding processes: SMAW, GMAW, FCAW and SAW. Computer-based information systems are 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 examines 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. Student receives hands-on experience in operating a CAD system to generate and manipulate fabrication databases.

WELDTC-111 **Credits: 4**
Welding Practice 1
The purpose of this course is to 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 currently enrolled in WELDTC-101.

WELDTC-112 **Credits: 4**
Welding Practice 2
The purpose of this course is to 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 concurrent registration 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. Prerequisite(s): WELDTC-102.

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. Prerequisite(s): 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-181 **Credits: 1**
Welding Technology Orientation
This course is designed to assist the students in becoming acquainted with the educational and vocational opportunities at MATC and to help them make satisfactory adjustments to their school environment. It also gives them an overview of technical careers in the welding field.

700-Level Courses for Adult High School/GED/HSED, College Support and Learning English

Adult High School

Earn a high school diploma at MATC

If you are age 16 or older and want to earn your high school diploma, MATC's Adult High School is the place. Our comprehensive high school is accredited by AdvancED, and offers a full range of academic and student support services. Courses meet face-to-face on the Downtown Milwaukee Campus and are offered online.

Students with no previous high school experience complete 46 credits* of coursework. Students who have earned credits at other schools get advanced standing and complete the remaining credits needed for graduation. At least six credits must be taken at MATC.

*Each Adult High School credit is equal to one-half of a Carnegie Unit, which is the credit system most commonly used by U.S. high schools. Classes are 76-80 hours per quarter or semester.

See **matc.edu** and search **Adult High School** for information on getting started.

Adult High School: 46 credits

COMMUNICATIONS (One course must be a writing course)	**8**
MATHEMATICS (Two credits must be in algebra)	**6**
SOCIAL STUDIES (Two credits must be in American history/ government)	**6**
SCIENCE	**6**
COMPUTERS	**1**
CAREER EDUCATION	**1**
TECHNICAL/OCCUPATION	**1**
SUCCESS STRATEGIES	**1**
FINANCIAL LITERACY	**1**
PHYSICAL EDUCATION/HEALTH	**3**
ELECTIVES	**12**
TOTAL CREDITS	**46**

Additional MATC Adult High School opportunities for teens and adults

Credit recovery

High school students ages 16 and older may register for classes to make up high school credits.

College prerequisites

High school graduates who need high school credits in biology, algebra, geometry or chemistry as prerequisites for college programs can take these courses through Adult High School.

Emerging Scholars program

High school students age 16 and older who meet the statutory definition of being a child at-risk may take classes leading to a high school diploma at MATC.

For more information about the Adult High School, call 414-297-8356.

700-LEVEL COURSES

Prepare for the GED/HSED

If you need preparation before taking the General Educational Development (GED) tests, MATC offers many opportunities to help you learn what you need to know.

Basic Skills courses and classes at MATC's Adult High School can help you catch up on English, mathematics, science and social studies, no matter what your skill level. There are also specific GED preparation classes offered at MATC campuses during the day, evening and online. MATC also has classes at community-based organizations (CBOs).

See **matc.edu** and search **GED** for details on getting started.

To earn a High School Equivalency Diploma (HSED), you will complete all of the steps for the GED certificate, plus:

Complete a health requirement by either passing a test, completing half of a credit in health while in high school, or completing an MATC Adult High School health course.

Complete MATC's Employability Skills course.

There are more methods of earning a HSED too. Call 414-297-7471 for more information.

MATC HSED 5.09 – High school completion option program

This competency-based high school completion option is designed to be completed in one to two semesters and awards a Wisconsin HSED. In addition, students have the opportunity to waive courses based on prior learning (such as test-out options and high school credits).

Students will demonstrate mastery of competencies identified by the Wisconsin Technical College System in the areas of communication, social studies, science, math, health, civics, and employability along with six additional competencies added by MATC designed to prepare students for college or the workforce.

HSED 5.09 program requirements:

- At least age 18½ years old
- Good attendance history
- Completion of the TABE 11/12 test with a scale score of 519 in reading
- Need for an alternative to the GED 2014 test
- Face-to-face interview

For more information, contact: Holly Thielen, West Allis Campus: thielenh@matc.edu, 414-456-5399.

Bridge to Pathway programs

Bridge programs are designed for students who are enrolled in Adult High School or GED/HSED courses. Students will take college credit courses leading to a college credential while enrolled in Adult High School, GED or HSED programs. Students may choose from several Bridge programs. See **matc.edu** and search **Bridge to Pathway** for current programs.

Basic Skills

Basic Skills instruction is geared to those who do not have a high school diploma. Instruction levels range from grades 0-12. Courses are useful for those who plan to enter an associate degree or technical diploma program at MATC, pass the GED test, or enter MATC's Adult High School program and earn a high school diploma.

Basic Skills subjects include reading, mathematics, science and writing. Courses are offered at MATC campuses and at community-based organizations (CBOs) throughout metro Milwaukee. Spanish-language and Southeast Asian-language courses are offered at some locations. For information, email veleza@matc.edu or call 414-297-7923.

English as a Second Language

Learn English: English as a Second Language (ESL)/ English Language Learners (ELL) programs

MATC's programs help students learn English so they may function more effectively at work, at home and in the community. The ESL program also prepares students for college coursework.

MATC provides English language instruction to a linguistically diverse (25 language groups) and culturally diverse (50 countries) population. The student population comes from all educational and ethnic backgrounds. The program serves students living in Milwaukee and includes resident aliens, refugees and U.S. citizens.

ESL/ELL students learn in a variety of ways including group or individualized, computer-assisted language learning, weekend classes and online.

A student may choose courses in oral language development, vocabulary improvement, reading and writing skills, pre-employment English, and computer skills. Students also can get help in preparing for citizenship.

Outreach programs for business and industry are available.

ESL/ELL contact information

Downtown Milwaukee Campus
700 West State Street
414-297-7343
eslmilw@matc.edu

Mequon Campus
5555 West Highland Avenue
262-238-2238
eslmequon@matc.edu

Oak Creek Campus
6665 South Howell Avenue
414-570-4423
esloakcreek@matc.edu

West Allis Campus
1200 South 71st Street
414-456-5302
eslwest@matc.edu

Community outreach sites
English as a Second Language classes are offered at various community-based organizations (CBOs) in the Milwaukee area. Visit **matc.edu** and search **ESL** for the list of sites.

Bilingual programs

If your first language is not English, or if you are fluent in English and Spanish or English and Hmong, MATC offers bilingual programs and services to help you reach your academic and personal goals.

MATC can help you improve your English skills, obtain your GED in Spanish, enroll in a degree or diploma program, and more. Bilingual services are offered at MATC campuses as well as community-based organizations.

The Office of Bilingual Education provides the following ongoing services to bilingual students:

- Test proctoring
- Admission screening
- Program information
- Financial aid information, advising and referral
- Counseling referrals
- Career exploration
- Registration assistance
- Student advocacy
- Case management
- Tutorial support

Classes and programs

To meet employer and community needs of the growing Hispanic and Hmong populations within the Milwaukee area, MATC offers courses and programs taught in Spanish/Hmong and in English.

For example, classes assist students who are obtaining their GED in Spanish. Occupational English-language-acquisition courses help students acquire the English language skills needed to transition into MATC's bilingual diploma and certificate programs. Bilingual courses also are offered in business, health, liberal arts, childhood education and other areas.

For the list of bilingual classes offered in a semester, see **selfservice.matc.edu**.

For information about bilingual programs, call 414-297-8882. For GED exam classes and information in Spanish, call 414-297-8527.

Information about MATC's 700-level course descriptions:

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 **CAREER-710**, the letters CAREER form the alphabetic code that identifies the subject in which the course is taught. In this example, the subject is Career Education, as shown on the Alphabetical List of Subjects With Department Numbers on the following page.

The set of three numbers, **710**, identifies the type of program in which the course is found.

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.

700-LEVEL COURSES

700-Level Courses: Alphabetical List of Subjects With Department Numbers (Department numbers are in parentheses)

CAREER ..... Career Education (862)
COMMB1 ..... Communications/Basic Skills Level 1 (851)
COMMB2 ..... Communications/Basic Skills Level 2 (851)
COMMB3 ..... Communications/Basic Skills Level 3 (851)
COMMB4 ..... Communications/Basic Skills Level 4 (851)
COMMB5 ..... Communications/Basic Skills Level 5 (851)
COMMB6 ..... Communications/Basic Skills Level 6 (851)
COMMHS ..... Communications – Adult High School (851)
COMPUB ..... Computer Basics – Adult Basic Education/ABE (860)
ENG, ENGCR, ENGE ..... English, English Co-Requisite, English Enhanced (851)
ESL ..... English as a Second Language (861)
HISTHS ..... History – Adult High School (853)
HLTHHS ..... Health – Adult High School (857)
INTRN ..... Internship (862)
MAGED ..... Math for GED (854)
MATH, MATHCR ..... Mathematics, Mathematics Co-Requisite (854)
MATHB1 ..... Math/Basic Skills Level 1 (854)
MATHB2 ..... Math/Basic Skills Level 2 (854)
MATHB3 ..... Math/Basic Skills Level 3 (854)
MATHB4 ..... Math/Basic Skills Level 4 (854)
MATHB5 ..... Math/Basic Skills Level 5 (854)
MATHB6 ..... Math/Basic Skills Level 6 (854)
MATHHS ..... Math – Adult High School (854)
MATHPH ..... Math – Post High School (854)
NATSCI ..... Natural Science (856)
OFFTEC ..... Office Technology (862)
READB1 ..... Reading/Basic Skills Level 1 (858)
READB2 ..... Reading/Basic Skills Level 2 (858)
READB3 ..... Reading/Basic Skills Level 3 (858)
READB4 ..... Reading/Basic Skills Level 4 (858)
READB5 ..... Reading/Basic Skills Level 5 (858)
READB6 ..... Reading/Basic Skills Level 6 (858)
READPH ..... Reading – Post High School (858)
RLGED, RLGEDF ..... Reading and Language Arts for GED (858)
SCIGED ..... Science for GED (856)
SCIHS ..... Science – Adult High School (856)
SCIPH ..... Science – Post High School (856)
SOCGED ..... Social Studies for GED (859)
SOCHS ..... Social Science – Adult High School (859)

700-LEVEL COURSE DESCRIPTIONS

CAREER EDUCATION
(DEPARTMENT: 862)

CAREER-710 **Credits: 1**
Exploring Technical Careers
Through presentations in training labs, hands-on shop assignments and on-site employer visits, students acquire familiarity with skills, job opportunities and salary expectations in the electricity/electronics industry. Emphasis is placed on technical careers in the above 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 also are 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 educational preparation needed for success. Students will tour MATC, interview counselors, staff and/or faculty as they prepare a Career Portfolio. Nontraditional employment receives special attention.

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
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-750 **Credits: 0.1**
GED Orientation Career Planning
In this class, participants are provided with 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: 0.1**
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 types of résumé and cover letter formats. Opportunities to explore the interview process also are provided, coupled with information on available resources pertaining to the development of academic and personal management, and teamwork skills.

CAREER-797 **Credits: 1**
The Promise of Community
This course prepares students to be self-directed and successful in their pursuit and documentation of community-engaged learning experiences at Milwaukee Area Technical College. Students will begin to develop a portfolio to demonstrate career-related learning objectives met through their community-engaged learning experiences.

700-LEVEL COURSE DESCRIPTIONS

CAREER-799 **Credits: 1**
The Path to College Success
The Path workshop is a psychosocial workshop created by the MATC counselors to provide an intervention for students who are suspended from college. Helps students identify their goals and passions; identify the barriers to reaching these goals; identify resources and action which will address their barriers. Student fills out a contract for success and this is included in their academic appeal.

COMMUNICATIONS
(DEPARTMENT: 851)

COMMUNICATIONS – BASIC SKILLS LEVEL 1

COMMB1-711 **Credits: 4**
Basic Communications 1
Level 1 Communication emphasizes writing simple notes and messages on familiar situations. Learners who successfully complete Level 1 Communication achieve beginning basic education benchmarks according to NRS guidelines.

COMMUNICATIONS – BASIC SKILLS LEVEL 2

COMMB2-721 **Credits: 4**
Basic Communications 2
Level 2 Communication emphasizes basic writing tasks related to life roles, such as completing medical forms, order forms and job applications. Learners write short reports and messages to fellow workers. Learners will self- and peer-edit for spelling and punctuation. Learners who successfully complete Level 2 Communication achieve low intermediate education benchmarks according to NRS guidelines.

COMMB2-755 **Credits: 3**
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 – BASIC SKILLS LEVEL 3

COMMB3-731 **Credits: 4**
Basic Communications 3
Level 3 Communication emphasizes writing simple narrative descriptions and short essays on familiar topics. Learners complete forms, such as job applications, and strive for consistent use of basic grammar and punctuation. Learners who successfully complete Level 3 Communication achieve high intermediate education benchmarks according to NRS guidelines.

COMMUNICATIONS – BASIC SKILLS LEVEL 4

COMMB4-741 **Credits: 4**
Basic Communications 4
Level 4 Communication 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. Learners who successfully complete Level 4 Communication achieve low adult secondary education benchmarks according to NRS standards.

COMMUNICATIONS – BASIC SKILLS LEVEL 5

COMMB5-751 **Credits: 4**
Basic Communications 5
Level 5 Communication emphasizes using varied and complex sentence structure with few mechanical errors. Learner's writing is cohesive with clearly expressed ideas supported by relevant detail. Learners who successfully complete Level 5 Communication achieve high adult secondary education benchmarks according to NRS guidelines.

COMMUNICATIONS – BASIC SKILLS LEVEL 6

COMMB6-761 **Credits: 4**
Basic Communications 6
Level 6 Communication 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 Communication are prepared to enter postsecondary education and/or obtain and maintain employment.

COMMUNICATIONS – ADULT HIGH SCHOOL

COMMHS-700 **Credits: 1**
Write to Work
The student will learn the components of marketing oneself for employment and master 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 **Credits: 1**
World Literature 1
The major focus is short fiction, poetry and drama. Students will learn literary terms and story elements. Students 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 **Credits: 1**
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 selection for mechanics of good writing.

COMMHS-705 **Credits: 1**
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 **Credits: 1**
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. A review of writing complete and effective sentences is done in order to enhance word-processed compositions.

COMMHS-711 **Credits: 1**
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 **Credits: 1**
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 **Credits: 1**
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. Great science fiction classics by Isaac Asimov, Ray Bradbury, H.G. Wells, George Orwell, Arthur Clarke, and other noted science fiction writers are introduced to students. Based on their readings, students will complete three written reports.

COMMHS-725 **Credits: 1**
Composition
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-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, phrases, 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, phrases, 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 webpages. Increase the effectiveness of your website by including pictures and video, using cameras, scanners and graphics programs.

COMPUTER BASICS (DEPARTMENT: 860)

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.

COMPUB-768 **Credits: 3**
Digital Literacy for GED
This course introduces and develops targeted digital literacy skills needed for GED coursework and GED testing, and is enhanced with academic computer and technology essentials. Focus is on computer and technology topics and skill sets for GED success that include access, familiarity, and ease of use of GED software and tools, GED computer-based testing fundamentals, Google Drive and Blackboard, and computer basics (e.g., navigation, word processing and file management).

COMPUB-798 **Credits: 1**
Online Student Readiness
Course introduces skills and methods regarding technology literacy and self-management for first-time online college students. Course learning outcomes focus on skills development for distance learning student success at Milwaukee Area Technical College by exploring the following tools: Blackboard, INFOnline, myMATC and Gmail. Prepares students to be engaged and self-directed in asynchronous learning environments by addressing time management and best practices for online student success.

ENGLISH (DEPARTMENT: 851) ENG, ENGCR AND ENGE

ENG-700 **Credits: 2**
English Foundations
The English Academy is designed to help students develop communication skills in preparation for work, college and other real-world situations. This course integrates reading, writing and speaking for learners to apply appropriate communication skills. Learners who successfully complete English Academy will utilize active reading strategies, writing strategies, intermediate vocabulary development strategies, and oral communication skills.

ENG-740 **Credits: 2**
Communication and Interaction in Customer Service
This course is designed to improve the student's customer service communication skills through practical reading, customer-focused writing, active listening, and oral interaction assignments. Students will learn a wide range of strategies to enhance their customer service communication skills including: the examination of customer service behaviors, the application of customer-focused active listening and nonverbal communication skills, the analysis of the role of diversity and equity in customer service, and the prevention of customer service communication breakdowns and the implementation of recovery strategies. Special attention will be paid to the creation of an individual customer service communication and interaction philosophy.

ENGCR-703 **Credits: 2**
English Foundations 1CR
This is a 64-contact hour Developmental Education course designed to help students strengthen their college-level reading, communication and writing skills. This is a reading and writing intensive co-requisite course that prepares students to succeed in ENG-195. This course focuses on building and enhancing reading, communication and writing skills with an emphasis on critical thinking and analysis, and facilitating competence in English grammar and paragraph development. Prerequisite(s): Student must be registered in ENG-195.

700-LEVEL COURSE DESCRIPTIONS

ENGCR-704 **Credits: 2**
English Foundations 2CR
The English Foundations 2CR is a 64-contact hour Developmental Education course designed to help students strengthen their college-level reading, communication and writing skills. This is a reading and writing intensive co-requisite course that prepares students to succeed in ENG-201. This course focuses on building and enhancing reading, communication and writing skills with an emphasis on critical thinking and analysis, and facilitating competence in English grammar and paragraph development. Prerequisite(s): Student must be registered in ENG-201.

ENGE-701 **Credits: 1**
English Foundations 1
This course is designed to help students strengthen their college-level reading, communication and writing skills. This is a reading- and writing-intensive co-requisite course that prepares students to succeed in ENG-195. This course focuses on building and enhancing reading, communication and writing skills with an emphasis on critical thinking and analysis, and facilitating competence in English grammar and paragraph development. Prerequisite(s): Student must be registered in ENG-195.

ENGE-702 **Credits: 1**
English Foundations 2E
The English 201-E CR session is designed to help students strengthen their college-level reading and writing skills. This is a reading- and writing-intensive co-requisite course that prepares students to succeed in ENG-201. This course focuses on college-level reading and writing skills with an emphasis on critical thinking and analysis. Prerequisite(s): Student must be registered in ENG-201.

ENGLISH AS A SECOND LANGUAGE (DEPARTMENT: 861)

ESL-700 **Credits: 3**
ESL Workshop
The ESL Workshop provides students with an opportunity to improve their English skills by working one-on-one with an instructor and independently at their own pace. Students can be placed in CALL (computer-assisted language learning) programs in which they can work on listening, speaking and pronunciation, grammar, reading, writing or integrated skills.

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 nonnative speakers of the language. A pre-employment and/or pre-academic 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 and 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 of oral and written English for more advanced nonnative speakers of English.

ESL-792 **Credits: 3**
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 (DEPARTMENT: 853)

HISTHS-706 **Credits: 1**
American History 2
In covering major developments in United States history from the 1870s to today, the following topics are surveyed: Industrialization, the Progressive Era, Imperialism, World War I, the 1920s, the Depression and World War II.

HISTHS-707 **Credits: 1**
World History
The World History 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.

HEALTH – ADULT HIGH SCHOOL (DEPARTMENT: 857)

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: 0.6**
Adult Recreation 1
Adult recreation 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: 0.6**
Adult Recreation 2
This course is designed to further develop recreational skills and individual fitness techniques. Prerequisite(s): HLTHHS-711.

HLTHHS-730 **Credits: 0.5**
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: 2**
CPR and First Aid
This course develops lifesaving skills needed to become certified in American Heart Association Heartsaver 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: 0.4**
Body Conditioning 1
This activity class provides students with specific training techniques that are 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: 0.4**
Body Conditioning 2
This course is designed to teach advanced strategies of body toning and progressive resistance training. Prerequisite(s): HLTHHS-751.

HLTHHS-763 **Credits: 0.5**
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: 0.5**
Dance/Aerobic Fitness 2
This course is a series of choreographed exercises to music with continuous, rhythmic aerobic movements, with advanced variations and styles to enhance cardiovascular endurance, flexibility, muscle conditioning and weight control.

INTERNSHIP
(DEPARTMENT: 862)

INTRN-796 **Credits: 1**
Employment Success
With an emphasis on polishing your job search and career management skills, this workshop presents practical strategies that prepare students to complete their required internship, and to lay the foundation for successful career development. Assignments include researching prospective employers, preparing résumés and cover letters, networking and a practice interview.

MATHEMATICS
(DEPARTMENT: 854)

MAGED – MATH FOR GED

MAGED-765 **Credits: 2.5**
Math for GED Quantitative Skill
This course examines topically organized and competency-based concepts crucial to your success on the GED Mathematical Reasoning test. The content in quantitative skills will be the context for the development of the needed fluency, conceptual understanding, and procedural skills utilized in realistic situations.

MAGED-766 **Credits: 2.5**
Math for GED Algebra Skills
This course examines topically organized and competency-based concepts crucial to your success on the GED Mathematical Reasoning test. The content in algebra skills will be the context for the development of the needed fluency, conceptual understanding, and procedural skills utilized in realistic situations.

MAGED-768 **Credits: 2.5**
Math for GED
This course examines topically organized and competency-based concepts crucial to your success on the GED Mathematical Reasoning test. The content in quantitative and algebraic problem solving will be the context for the development of the needed fluency, conceptual understanding, and procedural skills utilized in realistic situations.

MATH AND MATHCR

MATH-700 **Credits: 1**
Math Fundamentals in Context
This course is designed to prepare students for successful completion of entry-level college math courses and will provide a hands-on, contextualized approach to learning mathematics that will help students improve their math skill.

MATH-703 **Credits: 1**
Math Success Skills
This class is for students who would like to brush up on their basic math skills in order to be more successful in math courses or courses in areas where math is used extensively. Fractions, decimals, percents and unit conversions are covered.

MATHCR-701 **Credits: 2**
Math Foundations 1
This course is designed as additional support for students taking a specific section of a 100-level math class and is required for students taking co-requisite sections of 100-level math classes. Students learn the skills needed for success in math. Prerequisite(s): Student must register in MATH-107.

MATHCR-702 **Credits: 2**
Math Foundations 2
This course is designed as additional support for students taking a specific section of a 200-level math class and is required for students taking co-requisite sections of 200-level math classes. Students learn the skills needed for success in math. Prerequisite(s): Student must register in MATH-200.

MATHEMATICS – BASIC SKILLS LEVEL 1

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. Learners identify simple fractions and perform other simple arithmetic operations. Learners achieve beginning basic education benchmarks according to NRS guidelines.

MATHEMATICS – BASIC SKILLS LEVEL 2

MATHB2-724 **Credits: 4**
Basic Arithmetic 2
Level 2 Mathematics emphasizes the four basic math operations, using whole numbers up to three digits. Learners can identify and use all basic mathematical symbols. Learners use critical thinking skills to problem solve, perform computations, estimate results, and apply mathematics to real-world situations. Learners 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.

MATHEMATICS – BASIC SKILLS LEVEL 3

MATHB3-734 **Credits: 4**
Basic Arithmetic 3
Level 3 Mathematics emphasizes the four basic math operations, using whole numbers and fractions. Learners can determine the correct operation for solving narrative math problems and can convert fractions to decimals and decimals to fractions. Learners achieve high intermediate basic education benchmarks according to NRS guidelines.

MATHEMATICS – BASIC SKILLS LEVEL 4

MATHB4-744 **Credits: 4**
Basic Arithmetic 4
Level 4 Mathematics emphasizes all basic math functions and introduces simple algebraic equations. Learners can perform all basic math functions with whole numbers, decimals and fractions. Learners can interpret and solve simple algebraic equations, tables and graphs, and can develop their own tables and graphs. Learners can use math in business transactions. Learners achieve low adult secondary education benchmarks according to NRS guidelines.

MATHEMATICS – BASIC SKILLS LEVEL 5

MATHB5-754 **Credits: 4**
Basic Arithmetic 5
Level 5 Mathematics emphasizes applying mathematical concepts, including algebra, geometry, trigonometry and probability. Learners make mathematical estimates of time and space, and apply the principles of geometry to measure angles, lines and surfaces. Learners achieve high adult secondary education benchmarks according to NRS guidelines.

700-LEVEL COURSE DESCRIPTIONS

MATHEMATICS – BASIC SKILLS LEVEL 6

MATHB6-764 **Credits: 4**
Basic Arithmetic 6
Level 6 Mathematics emphasizes analyzing non-routine problems and arriving at a solution by various means. Learners apply algebraic, geometric and trigonometric functions to solve problems.

MATHEMATICS – ADULT HIGH SCHOOL

MATHHS-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. Top it all off with applications of these tools to daily life situations.

MATHHS-707 **Credits: 1**
Consumer Math
This course is designed to help you with everyday consumer math skills, math you should and do use all the time. You will learn a wide variety of personal and business math skills.

MATHHS-716 **Credits: 1**
Algebra 1A
This course is equivalent to the first semester of first-year algebra. It begins with performing the basic operations (addition, subtraction, multiplication and division) on signed (+ and -) numbers. The course covers basic algebraic terminology, evaluating expressions, solving equations and inequalities with one variable (letter), and performing the basic operations on expressions.

MATHHS-717 **Credits: 1**
Algebra 1B
This course is equivalent to the second semester of first-year algebra. It begins with the different methods of factoring, and applying these methods to solve quadratic equations and work with rational expressions (algebraic fractions). This work includes simplifying (reducing) them, setting up and solving proportions, and performing the basic operations of addition, subtraction, multiplication and division on them. Prerequisite(s): MATHHS-716.

MATHHS-721 **Credits: 1**
Geometry 1
Geometric concepts covered include: Points, Lines, Planes, Conditional Statements, Angles, Symbols, Triangles and Proof Writing. Tools, techniques and procedures covered include: Algebraic Properties, Deductive Reasoning, Inductive Reasoning, Definitions, Theorems and Postulates. Prerequisite(s): MATHHS-717.

MATHHS-722 **Credits: 1**
Geometry 2
Geometric concepts covered include: Volume and Surface Area of 3-Dimensional Shapes; Circles, Chords, Arcs and Tangents; and Right Triangle Trigonometry. Tools, techniques and procedures covered include: Algebraic Properties, Deductive Reasoning, Inductive Reasoning, Definitions, Theorems and Postulates.

MATHHS-745 **Credits: 1**
Advanced Algebra 1A
This course is equivalent to the first semester of second-year algebra. The course begins with the graphing of lines. Topics include graphing of linear inequalities in two variables; solving linear systems (two lines) using the graphic, elimination, and substitution methods; exploring other methods of solving equations; and the study of roots and radicals.

MATHHS-755 **Credits: 1**
Advanced Algebra 1B
This course is equivalent to the second semester of the second year of algebra. Topics include: counting techniques and probability; a study of quadratics (the parabola, circle, ellipse and hyperbola); the solution of three equation systems of lines and of non-linear systems; and the study of matrices, determinants, and exponential and logarithmic functions.

MATHEMATICS – POST HIGH SCHOOL

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. Top it all off with applications of these tools to daily life situations.

MATHPH-707 **Credits: 1**
Financial Literacy
This course is designed to help you with everyday consumer math skills, 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 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
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-745 **Credits: 1**
Advanced Algebra 1A
This course is equivalent to the first semester of second-year algebra. The course begins with the graphing of lines. Topics include graphing of linear inequalities in two variables; solving linear systems (two lines) using the graphic, elimination, and substitution methods; exploring other methods of solving equations; and the study of roots and radicals.

MATHPH-755 **Credits: 1**
Advanced Algebra 1B
This course offers a sampling of matrix algebra, trigonometry, conic section, probability, statistics, progression and series. It is designed to whet the appetite for future mathematical studies.

MATHPH-771 **Credits: 5**
MATHPH1: Basic Mathematics
This course is designed for students who have graduated from high school, or earned a GED or HSED, who did not earn the

necessary math placement score to enter their desired college program. This course covers basic arithmetic skills, numerical calculations, and competencies fundamental to mathematics.

MATHPH-772 **Credits: 5**
MATHPH2: Basic Pre-Algebra
This course is designed for students who have graduated from high school, or earned a GED or HSED, who did not earn the necessary math placement score to enter their desired college program. This course covers applications of arithmetic processes and introduces basic mathematical concepts in pre-algebra and geometry. This transition course prepares student to succeed in their next math class (Introductory Algebra and subsequent algebra-related courses).

NATURAL SCIENCE
(DEPARTMENT: 856)

NATSCI-700 **Credits: 1**
A & P Prep Course
This course prepares students for entrance to and success in General Anatomy & Physiology (NATSCI-177) and Anatomy & Physiology I (NATSCI-201) by offering a general review of study skills, basic math, chemistry, cell biology and terminology; all concepts essential to success in Anatomy and Physiology.

OFFICE TECHNOLOGY
(DEPARTMENT: 862)

OFFTEC-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.

OFFTEC-739 **Credits: 3**
Business Operations Co-Op Part 1
Class time consists of a variety of work-related sections designed to improve skills necessary for work with portfolio. Areas covered include interpersonal relationships and concepts, technology and international business.

OFFTEC-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 portfolio. Areas covered include database, spreadsheets, math concepts and financial record-keeping. Prerequisite(s): OFFTEC-739.

OFFTEC-741 **Credits: 2**
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 areas covered are a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTEC-735.

OFFTEC-742 **Credits: 2**
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 covered are a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFTECH-741.

OFFTEC-743 **Credits: 2**
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 covered are a meeting preparation project, a project either accounting-based or technology-based, and business portfolio completion. Prerequisite(s): OFFTEC-742.

OFFTEC-744 **Credits: 2**
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): OFFTEC-743.

READING (DEPARTMENT: 858)
READING – BASIC SKILLS LEVEL 1

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. Learners who successfully complete Level 1 Reading achieve beginning basic education benchmarks according to NRS guidelines.

READING – BASIC SKILLS LEVEL 2

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. Learners use context to determine meaning and can interpret actions required in specific directions. Learners read simple charts, graphs, labels, payroll stubs, and simple authentic material. Learners who successfully complete Level 2 Reading achieve low intermediate basic education benchmarks according to NRS guidelines.

READING – BASIC SKILLS LEVEL 3

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. Learners read simple descriptions and narratives and can make some minimal inferences about familiar texts, and compare and contrast information from texts. Learners read authentic materials on familiar topics, such as simple employee handbooks. Learners who successfully complete Level 3 Reading achieve high intermediate basic education benchmarks according to NRS guidelines.

READING – BASIC SKILLS LEVEL 4

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. Learners identify spelling, punctuation and grammatical errors, and follow simple multi-step directions. Learners identify the main idea in reading selections and use context to determine meaning. Learners who successfully complete Level 4 Reading achieve low secondary education benchmarks according to NRS guidelines.

READING – BASIC SKILLS LEVEL 5

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. Learners explain and analyze information, use context cues and higher order processes to interpret meaning of written material, and read technical information and complex manuals. Learners who successfully complete Level 5 Reading achieve high adult secondary education benchmarks according to NRS guidelines.

700-LEVEL COURSE DESCRIPTIONS

READING – BASIC SKILLS LEVEL 6

READB6-767 **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. Learners 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. Learners 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.

READING – POST HIGH SCHOOL

READPH-771 **Credits: 5**
READPH1: Intermediate Comprehension
Reading Post High School 1 is designed for students who have graduated from high school or have earned a GED or HSED. This course emphasizes comprehension of a variety of literary works, including primary source materials and professional journals. Learners explain and analyze information, use context cues and higher order processes to interpret meaning of written material, and read technical information and complex manuals. Learners who successfully complete Reading Post High School 1 achieve high adult secondary education benchmarks according to NRS guidelines.

READPH-772 **Credits: 5**
READPH2: Advanced Comprehension
The Reading Post High School 2 course is designed for students who have graduated from high school or have earned a GED or HSED. This course emphasizes adapting strategies and skills to a variety of reading tasks and becoming a critical reader. Learners 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. Learner responds to reading in written form. Learners who successfully complete the course are prepared to enter postsecondary education, and/or obtain and maintain employment. The class assumes competence in use of basic reading strategies.

RLGED/RLGEDF – READING AND LANGUAGE ARTS FOR GED

RLGED-766 **Credits: 2.5**
RLA for GED Extended
This course requires the GED learner to read closely, write clearly, and apply editing strategies to complex texts appropriately. The content in Reading Comprehension, Writing, and Language Conventions and Usage will be the context for the development of the needed critical-thinking, reading and writing strategies.

RLGED-768 **Credits: 2.5**
RLA for GED
This course requires the GED learner to read closely, write clearly, and apply editing strategies to complex texts appropriately. The content in Reading Comprehension, Writing, and Language Conventions and Usage will be the context for the development of the needed critical-thinking, reading and writing strategies. Prerequisite(s): Eighth-grade reading level.

RLGEDF-765 **Credits: 2.5**
RLA for GED Fundamentals
This course requires the GED learner to read closely and write clearly. The content in Reading Comprehension, Writing, and Language Conventions and Usage will be the context for the development of the needed critical-thinking, reading and writing strategies.

SCIENCE (DEPARTMENT: 856)
SCIENCE FOR GED

SCIB3-798 **Credits: 2**
Science for GED
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.

SCIGED-768 **Credits: 2.5**
Science for GED
This course introduces foundational skills crucial to your success on the GED Science text. The content in Life Science, Earth and Space, and Physical Science will be the context for the development of scientific reasoning in both textual and quantitative practices.

SCIENCE – ADULT HIGH SCHOOL

SCIHS-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.

SCIHS-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, our human body, and environmental problems.

SCIHS-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.

SCIHS-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.

SCIHS-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; the 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 other 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 with the environment through lecture and labs. Topics will include plant life, evolution and ecology.

SCIHS-750 **Credits: 1**
Physical Science 1
Physical Science 1 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 include heat and temperature, waves, communication and technology, the solar system, the universe, planet Earth, the atmosphere, and using natural resources.

700-LEVEL COURSE DESCRIPTIONS

SCIENCE – POST HIGH SCHOOL

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; the 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 other topics. Prerequisite(s): SCIHS-705 or SCIPH-705.

SCIPH-750 **Credits: 1**
Physical Science 1
Physical Science 1 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.

SOCIAL SCIENCE
(DEPARTMENT: 859)
SOCIAL STUDIES FOR GED

SOCGED-768 **Credits: 2.5**
Social Studies for GED
This course introduces foundational skills and levels of complexity crucial to your success on the GED Social Studies test. The content in Government and Civics, U.S. History, Economics, Geography and the World, and Citizenship will be the context for the development of integrated social studies reasoning and problem-solving skills applicable to academic and workplace environments.

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 our great challenge to use our 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**
World Geography I
World Geography I helps students understand that the world has systems that can be compared, analyzed and evaluated through the study of landforms, climates, ecosystems and their interactions. Students will learn that the five themes of place, location, movement, region and human environmental interactions can be applied throughout the globe. In addition, students will look at world events and their impact on countries, cultures, environments and individuals. World Geography I will study the geography of the following regions of the world: North America, Central America and South America.

SOCHS-710 **Credits: 1**
World Geography II
World Geography II helps students understand that the world has systems that can be compared, analyzed and evaluated through the study of landforms, climates, ecosystems and their interrelationships. Students will learn that the five themes of place, location, movement, region and human environmental interactions can be applied throughout the globe. In addition, students will look at world events and their impact on countries, cultures, environments and individuals. World Geography II will study the geography of the following regions of the world: Asia, Africa Australia, Europe and Antarctica.

SOCHS-714 **Credits: 1**
Personal Economics
Personal Economics will utilize the appropriate resources to research, plan, implement and assess a learner's individual short-term and long-term personal economic future. Learners 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-720 **Credits: 1**
Psychology
The basic concepts, methods and applications of psychology in the daily life of the individual are studied. The student receives a broad introduction to the field of psychology as the science of human behavior.

SOCHS-750 **Credits: 0.5**
Civic 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: 0.5**
Advanced Civic Literacy
In this course, 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 governmental 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.

President's Cabinet

Martin, Vicki J.
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Baking, Apprenticeship.

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2019-20 MATC District Board of Directors

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