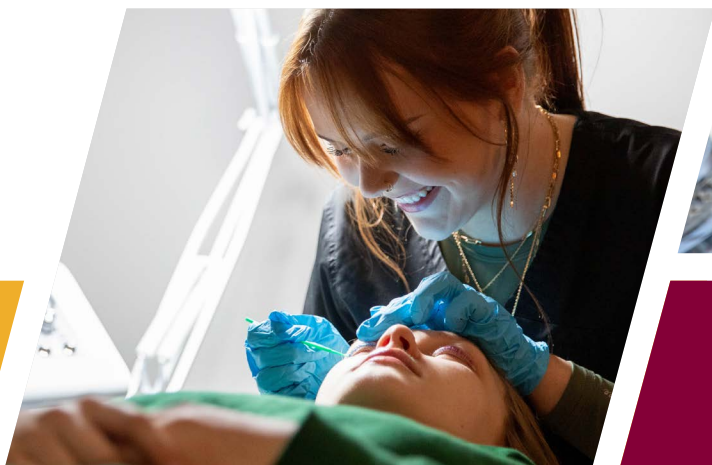




2025-26

# ACADEMIC CATALOG

CVTC.EDU



 CVTC

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# 2025-26 College Calendar

## 2025 SUMMER

May 26	Memorial Day Holiday – College Closed
May 27 – June 6	Interim Period
June 9 – August 8	8-Week Summer Session
June 30	Start of July 4th Holiday & Summer Break – College Closed
August 11 – 22	Interim Period

## 2025 FALL

August 18	New Student Welcome Day
August 19	Employee Committees Meeting Day
August 20 & 21	Instructor In-Service
August 25	Fall Classes Begin
September 1	Labor Day Holiday – College Closed
October 8	All-Employee Professional Development Day – No Instruction/Services
October 17	End of 8 Weeks
November 27 & 28	Thanksgiving Holiday – College Closed
December 11	Eau Claire Graduation
December 12	Last Day of Fall Semester Classes
December 24 – January 2	Winter Break – College Closed
January 5 – 23	Winter Term

## 2026 SPRING

January 19	Martin Luther King Jr. Day (Day of Service) – College Closed
January 21 & 22	Instructor In-Service
January 26	Spring Classes Begin
March 20	End of 8 Weeks
March 23 – 27	Spring Break
April 3	Spring Holiday – College Closed
May 21	Eau Claire Graduation
May 22	Last Day of Spring Semester Classes
May 22	River Falls Graduation

## 2025-26 Tuition & Fees

Tuition is defined as program fees, material fees, parking fees, supplemental fees and other class fees. Other class fees may include books, equipment, field trips, uniforms, graduation and sales tax.

Description of Fee	Cost
Tuition Costs Wisconsin & Minnesota Residents	\$152.85 per credit
Tuition Costs Out-of-State Residents	\$229.28 per credit
Tuition Costs University Transfer Program Wisconsin & Minnesota Residents	\$192.20 per credit
Tuition Costs University Transfer Program Out-of-State Residents	\$288.30 per credit
Activity Fee	5.5% of current per credit tuition rate
Academic Support Fee	2.5% of current per credit tuition rate
Application Processing Fee	\$30
Public Safety Fee	\$3 per credit with \$45 maximum
Health Services Fee	\$1.25 per credit
Summer Health Services Fee (3+ credits)**	\$7.25 River Falls

\* Out-of-state tuition fees do not apply to distance education offerings. International students need to contact the U.S. Citizenship and Immigration Services Designated School Official (DSO) by calling 715-833-6343.

## Estimated Tuition and Fees by Program

CVTC Program Name	Estimated Total Cost (tuition, tools & books)
Accounting	\$11,158
Accounting Assistant	\$5,593
Administrative Professional	\$11,093
Advanced EMT	\$1,124
Aesthetician	\$4,517
Aesthetician - Advanced Practice	\$11,933
Agronomy Management	\$12,107
Agronomy Technician	\$7,635
Air Conditioning, Heating & Refrigeration (HVACR) Technician	\$8,746
Air Conditioning, Heating & Refrigeration (HVACR)	\$15,441
Animal Science Management	\$11,819
Architectural Structural Design	\$11,821
Associate of Arts - University Transfer	\$13,412
Associate of Science - University Transfer	\$13,412
Autism Assistant	\$3,099
Auto Collision Repair & Refinish Technician	\$7,807
Automation Engineering Technology	\$12,291
Automotive Maintenance Technician	\$6,411
Automotive Technician	\$11,985

## Estimated Tuition and Fees by Program, Cont.

<b>CVTC Program Name</b>	<b>Estimated Total Cost (tuition, tools &amp; books)</b>
Baking & Pastry Specialist	\$6,822
Bookkeeper	\$1,702
Business Generalist	\$4,456
Business Management	\$11,917
Child Care Services	\$5,285
Clinical Assistant	\$4,276
Cosmetology	\$12,110
Criminal Justice - Law Enforcement Academy	\$5,321
Criminal Justice	\$11,703
Culinary Management	\$13,889
Culinary Production Specialist	\$6,432
Dental Assistant	\$3,715
Dental Hygienist	\$21,423
Design & Drafting Technology	\$3,957
Diagnostic Medical Sonography	\$15,618
Diesel Technician	\$14,175
Digital Marketing	\$10,683
Early Childhood Education	\$10,234
Electrical Maintenance	\$2,072
Electrical Power Distribution	\$10,844
ElectroMechanical Maintenance Technician	\$5,365
Emergency Medical Technician (EMT)	\$1,439
Entrepreneurship	\$5,135
Expanded Function Dental Auxiliary	\$3,195
Farm Business & Production Management	\$4,094
FireMedic	\$15,407
Foundations of Teacher Education	\$10,036
Funeral Service	\$6,301
Gas Utility Construction & Service	\$7,952
Graphic Design	\$10,254
Health Information Management & Technology	\$13,833
Human Resources	\$12,051
Individualized Technical Studies	\$2,274
IT - Data Analyst	\$11,102
IT - Desktop Support Technician	\$5,255
IT - Network Specialist	\$12,311

## Estimated Tuition and Fees by Program, Cont.

<b>CVTC Program Name</b>	<b>Estimated Total Cost (tuition, tools &amp; books)</b>
IT - Software Developer	\$10,887
IT - Software Development Specialist	\$2,730
Lab Assistant	\$755
Landscape, Plant & Turf Management	\$11,989
Landscape, Plant & Turf Technician	\$6,097
Legal Studies/Paralegal	\$11,789
Legal Studies/Paralegal Post-Baccalaureate	\$4,369
Library & Information Services	\$10,882
Library Director	\$2,052
Livestock Technician	\$6,416
Machine Tool Operator	\$7,819
Manufacturing Engineering Technologist	\$12,761
Manufacturing Quality	\$3,417
Marketing	\$10,868
Massage Therapy - Advanced Practice	\$9,480
Mechanical Design	\$12,948
Mechanical Maintenance	\$2,192
Mechatronics Specialist	\$13,486
Mechatronics Technician	\$8,443
Medical Assistant	\$6,301
Medical Coder	\$7,189
Medical Laboratory Technician	\$14,072
Motorcycle, Marine & Outdoor Power Products Technician	\$7,830
Nail Technician	\$3,628
Nursing	\$15,771
Nursing Assistant	\$423
Office Assistant	\$6,165
Office Receptionist	\$2,739
Paramedic	\$10,572
Paramedic Technician	\$14,908
Patient Service Specialist	\$2,984
Physical Therapist Assistant	\$12,557
Practical Nursing (LPN)	\$7,789
Professional Communications	\$11,452
Radiography	\$14,848
Renewable Energy	\$5,238

## Estimated Tuition and Fees by Program, Cont.

<b>CVTC Program Name</b>	<b>Estimated Total Cost (tuition, tools &amp; books)</b>
Residential Construction	\$7,956
Residential Construction Management	\$13,129
Respiratory Therapy	\$14,024
Sales & Marketing Specialist	\$5,600
Sterile Processing Technician	\$1,280
Substance Use Disordr COUNSLNG	\$13,083
Supply Chain Management	\$13,152
Surgical Technology	\$11,501
Technical Studies - Journeyworker	\$3,367
Therapeutic Massage	\$3,085
Truck Driving	\$3,279
Welding	\$8,934
Welding Fabrication	\$16,431

# ASSOCIATE DEGREES

# Landscape, Plant & Turf Management

10-001-4 | 60 Credits | Two Years | Associate Degree

If this is how you would describe yourself, the Landscape, Plant and Turf Management program may be what you need to begin a rewarding career:

- Interested in plants and/or landscaping
- Enjoy working outdoors
- Prefer a hands-on career field
- Have an eye for detail
- Learn quickly

You'll be provided with well-rounded horticultural training, real-life experience, and the business skills necessary for a life-long career owning, managing, or working in a horticulture business in an environmentally sustainable and financially profitable manner. The program provides you with a broad background in landscape and turf management, plant selection, certified pesticide application training, working with diverse populations, and environmentally sustainable management practices. This is a broad-based program, and you will receive training in all core career components including:

- Landscape Management
- Golf Course and Athletic Field Management
- Greenhouse Operation and Management
- Interior Plantscaping
- Vegetable and Fruit Production

Communities, businesses, golf courses, and institutions such as universities recognize the importance of good landscaping and are expected to continue to provide good employment opportunities for landscape, plant, and turf management specialists. More and more homeowners are contracting with outside firms to maintain their landscaping. Interest in locally-produced foods is growing. All of these trends point to good career opportunities. You have options!

## Program Courses

Course #	Course Title	Credits
001-116	Landscape Plants	2
001-120	Horticulture Soils	3
001-121	Intro to Horticulture	2
001-122	Horticulture Lab	1
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
001-103	Turf Management	2
001-108	Bus Apps for Green Industry	2
001-110	Integrated Plant/Pest Mgmt	2
001-113	Pesticide & Fertilizer App	3
001-125	Horticulture Equipmnt & Safety	2
801-196	Oral/Interpersonal Comm	3
001-109	Horticulture Internship	2
001-102	Landscape Design/Construction	2
001-117	Advanced Turf Management	1
001-132	Sustainable Land Use Mgmt	3
102-112	Principles of Management	3
806-342	Science for Technical Trades	2
809-198	Intro to Psychology	3
001-104	Greenhouse Management	3
001-112	Interior Plants & Plantscaping	2
001-114	Entrepreneurship for Green Ind	2
001-115	Vegetable and Fruit Production	3
001-133	Advanced Landscape Plants	1
802-103	Spanish for the Workplace	2
809-195	Economics	3

# Animal Science Management

10-091-7 | 60 Credits | Two Years | Associate Degree

Students earning an associate degree in Animal Science Management at Chippewa Valley Technical College (CVTC) are qualified for a wide variety of exciting careers in the dairy, beef, or specialty livestock industry with competitive salaries. Students will participate in technical, hands-on training through CVTC's partnership with over 30 different regional farms used as learning labs.

Graduates will find employment in Ag sales, herd management, reproduction and genetics, nutrition, consulting, and financial planning. Recent advances in livestock management, precision dairy practices, and other areas relating to animal production, care, and use underline the significant changes in today's animal agriculture and its growing importance to society as a whole.

## Program Courses

Course #	Course Title	Credits
006-105	Industry Skills	2
091-110	Livestock Evaluation & Judging	2
091-112	Livestock Modernization	2
091-150	Farm Data and Analysis	2
091-181	Intro to Animal Science	2
091-182	Animal Science Lab	1
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
091-120	Livestock Housing	2
091-122	Animal Breeding & Genetics	2
091-184	Herd Health	3
091-188	Feed Analysis	2
801-196	Oral/Interpersonal Comm	3
802-103	Spanish for the Workplace	2
091-130	Animal Science Internship	1
006-140	Agriculture Sales	2
091-121	Livestock Records Software	3
091-132	Ruminant Nutrition & Feeding	2
091-134	Advanced Reproduction	2
806-342	Science for Technical Trades	2
809-198	Intro to Psychology	3
006-130	Agribusiness Financial Mgmt	2
091-140	Herd Management	2
091-142	Lactation and Physiology	2
091-144	Transition&Replacement Animals	1
091-145	Special Livestock University	1
091-146	Animal Science Seminar	1
091-147	Animal Science Capstone	2
809-195	Economics	3

# Agronomy Management

10-093-9 | 60 Credits | Two Years | Associate Degree

If you're interested in technology, large equipment, and how it all works together then the Agronomy Management Program may be the right fit for you! This two-year associate degree will provide you with the necessary skills and hands-on training to meet the needs of local businesses in the agronomy field.

The Agronomy Management Program gives you an opportunity to work with all of the latest technology used in agronomy. Along with becoming familiar with the technology, you will learn business management skills, agronomy skills, and various equipment functions as well. While completing the Agronomy Management, you will complete the following certifications: • Wisconsin Commercial Pesticide Applicator License • Wisconsin Seed Treatment Certification • Commercial Driver's License

Some of the jobs that you can expect after graduating from the Agronomy Management Program: • Precision Farming Specialist • Sales Agronomist • Agriculture Equipment Salesperson • Seed Salesperson • Agronomist • Cooperative Operations Manager

## Program Courses

Course #	Course Title	Credits
093-110	Introduction to Agronomy	2
093-112	Precision Farming	2
093-114	Plant Protection Products	2
093-116	Introductory Soils	3
093-118	Agriculture Equipment	2
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
091-188	Feed Analysis	2
093-122	Nutrient Management	2
093-124	Pest Management	1
093-126	Precision Field Applications 1	1
093-128	Plant Science	2
093-129	Plant Science Lab	1
458-307	CDL License Training-Online	2
458-308	CDL License Training-Pre-Trip	1
458-309	CDL License Training - Lab	1
801-196	Oral/Interpersonal Comm	3
093-130	Agronomy Internship	1
093-132	Crop Scouting	2
006-140	Agriculture Sales	2
093-107	Precision Management	2

Course #	Course Title	Credits
093-134	Precision Field Applications 2	1
093-136	Row Crop Management	2
806-342	Science for Technical Trades	2
809-198	Intro to Psychology	3
006-130	Agribusiness Financial Mgmt	2
006-138	Agriculture Marketing	2
093-140	Fertilizer Systems & Tech	2
093-142	Agronomy Capstone Project	1
093-144	Crop Planning	2
809-195	Economics	3

# Accounting

10-101-1 | 60 Credits | Two Years | Associate Degree

If you enjoy working with numbers, have an interest in business, and are searching for a career path full of opportunity, the Accounting program may be right for you. Accounting is often referred to as the language of business.

In this program, you will learn to record and interpret business data. You'll develop analytical skills that will enable you to seek a career as an accountant, controller, account receivable/payable clerk, tax preparer, payroll specialist, and office manager. Computerized applications are incorporated to reflect current industry practices. You'll be prepared to:

- Set up and maintain accounting records and systems
- Analyze financial records
- Prepare individual and small business tax returns
- Prepare monthly and year-end financial reports
- Calculate, record, and make required payroll deposits and filings

Accounting is a high growth area. Accounting graduates are eligible to take the Accreditation in Accountancy (ABA) and/or an Enrolled Agent (EA) exam to further support your educational background. There are many opportunities when you have an accounting degree. You have options!

## Program Courses

Course #	Course Title	Credits
101-111	Accounting I	4
101-149	Intro to QuickBooks	2
809-198	Intro to Psychology	3
801-136	English Composition 1	3
	<b>--OR--</b>	
801-219	English Composition 1	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
101-106	Accounting Spreadsheets	2
101-113	Accounting II	4
101-121	Payroll Accounting	3
102-160	Business Law	3
801-196	Oral/Interpersonal Comm	3
101-116	Intermediate Accounting	4
101-123	Income Tax I	4
101-125	Cost Accounting	3
801-198	Speech	3
	<b>--OR--</b>	
801-223	English Composition 2	3

Course #	Course Title	Credits
101-104	Database for Accounting	2
101-118	Managerial Accounting	3
101-131	Accounting Systems	3
101-163	Accounting Capstone	3
101-126	Income Tax Preparation	2
	<b>--OR--</b>	
101-133	Acct Govt & Nonprofit Entities	2
	<b>--OR--</b>	
101-160	Accounting Internship	2
809-195	Economics	3
	<b>--OR--</b>	
809-291	Principles of Microeconomics	3

# Business Management

10-102-3 | 61 Credits | Two Years | Associate Degree

If you're interested in business, enjoy leadership roles, like being in charge, and are seeking a broad business background, the Business Management program could be a good match for you. The program is designed to enhance your ability to make sound business decisions. You'll learn how to effectively plan, organize, direct, and evaluate business functions essential to efficient and productive business organizations. Look around you: business leaders are found in nearly all work settings in virtually every sector of the economy. Business management salaries vary by company and position.

Most graduates begin in entry-level positions and advance through the ranks of the organization. Some graduates have developed their own successful businesses. So what are you waiting for? The Business Management program can help you develop a broad range of skills that you can use to launch your professional career. This could be the program for you!

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
102-133	Leadership for Bus Excellence	3
104-102	Marketing Principles	3
116-193	Human Resources, Intro	3
103-102	Microsoft Office Suite	2
	--OR--	
103-170	Microsoft Excel	1
801-136	English Composition 1	3
	--OR--	
801-219	English Composition 1	3
102-109	Business Analytics	3
102-113	Business Ethics	3
102-130	Innovative Business Mindset	3
<i>Choose 3 credits from the following:</i>		
804-134	Mathematical Reasoning	3
	--OR--	
804-189	Introductory Statistics	3
	--OR--	
804-230	Statistics	4
801-196	Oral/Interpersonal Comm	3
	--OR--	
801-198	Speech	3
102-117	Business Mgmt Career Planning	2
102-188	Project Management	3
809-198	Intro to Psychology	3
<i>Choose 3 credits from the following:</i>		
101-105	Accounting, Intro to	3
	--OR--	
101-111	Accounting I	4

Course #	Course Title	Credits
138-150	Global Business	3
101-172	Business Finance	3
102-114	Managing Operations	3
102-115	Business Mgmt Internship	1
102-116	Strategic Management	3
102-160	Business Law	3
809-195	Economics	3
	--OR--	
809-291	Principles of Microeconomics	3

# Marketing

10-104-3 | 60 Credits | Two Years | Associate Degree

If you're a "people person" with a flair for business, the Marketing Communications program could be just what you're looking for. This program is a good match for people with an interest in: • Entrepreneurship/management • Promotion/advertising • Business to business sales • Social media marketing • Customer relationship management • Sports, entertainment and event marketing • Retail management

This program will help you learn how to make strategic marketing decisions regarding product, price, promotion, and distribution to help businesses compete in today's highly competitive marketplace. You'll receive hands-on learning from class projects, tours, operating your own small business, and completing an internship. Your program will include training in all aspects of marketing. • Sports and entertainment event marketing • Promotion/advertising methods and techniques • Effective sales techniques • Strategic planning for marketing • Management skills and abilities • Marketing research • Small business management • Social media marketing

Marketing is the largest occupation in the United States. There are great opportunities in sales, research, promotion/advertising, buying, distribution, and management. A business must successfully meet customer needs and market its products or services. Marketing is more than "selling" it's a diverse, challenging field offering you many opportunities. This program offers the training and skills that you need for a truly rewarding career!

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
104-102	Marketing Principles	3
104-110	Customer Relationship Mgmt	3
104-140	Professional Sales	3
106-204	Foundations of Bus Writing	3
104-105	Marketing Research	3
104-119	Digital Marketing Strategy	3
104-125	Promotions	3
104-191	Service Marketing	3
801-198	Speech	3
104-108	Retail and Ecommerce	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
104-122	Visual Design	3
	<b>--OR--</b>	
699-105	Document Design	3
104-169	Marketing Prof Practice	1

Course #	Course Title	Credits
104-182	Personal Branding	2
104-183	Marketing Strategy	3
809-195	Economics	3
<i>Choose 3 credits from the following:</i>		
101-105	Accounting, Intro to	3
	<b>--OR--</b>	
101-111	Accounting I	4
102-188	Project Management	3
	<b>--OR--</b>	
104-160	Event Planning & Marketing	3

# Digital Marketing

10-104-8 | 60 Credits | Two Years | Associate Degree

This Digital Marketing program explores several aspects of the new digital marketing environment, including topics such as digital marketing analytics, search engine optimization, social media marketing, mobile marketing, and promotional design. When you complete the program you, will have a richer understanding of the foundations of the new digital marketing landscape and acquire a set of skills.

## Program Courses

Course #	Course Title	Credits
102-133	Leadership for Bus Excellence	3
104-102	Marketing Principles	3
104-122	Visual Design	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
104-119	Digital Marketing Strategy	3
104-125	Promotions	3
104-148	Web Fundamentals	3
104-154	Digital Audio & Video	3
104-163	Social Media Policies	3
104-108	Retail and Ecommerce	3
699-133	Digital Content Writing	3
801-198	Speech	3
809-195	Economics	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
104-129	Digital Marketing Capstone	4
104-169	Marketing Prof Practice	1
104-174	Digital Marketing Analytics	2
104-182	Personal Branding	2
<i>Choose 3 credits from the following:</i>		
101-105	Accounting, Intro to	3
	<b>--OR--</b>	
101-111	Accounting I	4
102-188	Project Management	3
	<b>--OR--</b>	
104-160	Event Planning & Marketing	3

# Administrative Professional

10-106-6 | 60 Credits | Two Years | Associate Degree

Are you looking for a rewarding career? Do you like being active on the job? Are you a people person? Do you enjoy working with technology? Are you interested in a variety of tasks? If so, the Administrative Professional associate degree program is for you! The job of an administrative professional combines organizational and people skills with an expertise in information processing and office technology. Administrative professionals work with customers, perform general administrative/office duties, develop and prepare correspondence, conduct research, prepare presentations and events, process and transmit information, and assist others within the organization. The efficiency of any organization depends, in part, upon the administrative professionals who are at the center of communications.

The Administrative Professional program provides you with up-to-date training for today's high-tech office and also provides a strong background in customer service and office-related skills and knowledge. In this program students learn to be efficient and effective office employees through the application of business procedures (proofreading, telephone messaging, managing records, arranging meetings and travel, communicating, researching, etc.) and software skills (word processing, desktop publishing, spreadsheets, presentations, electronic calendars, and databases).

During the final semester in the program, you'll gain valuable work experience in a local business office while completing your administrative professional internship. As an administrative professional, you will be employed in one of the largest and fastest growing occupations. Potential careers are available in diverse settings such as education, government, insurance/investment, industrial/manufacturing, legal, medical, and service organizations.

## Program Courses

Course #	Course Title	Credits
101-105	Accounting, Intro to	3
103-102	Microsoft Office Suite	2
106-201	Innovative Customer Service	3
106-202	Intro to the Smart Office	3
106-203	AI Foundations for Business	3
101-149	Intro to QuickBooks	2
102-109	Business Analytics	3
106-135	Bus Support Prof. Internship 1	1
106-204	Foundations of Bus Writing	3
106-205	Adv Software Applications	3
809-196	Intro to Sociology	3
	<i>Elective</i>	3
106-206	Digital Creativity: Pub & Tool	3
106-207	Applied Business Software	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
106-168	Bus Support Prof Internship 2	1
106-208	Web Tech & Productivity Tools	3
106-209	Career Capstone Office Prof	3
106-210	Technology-Driven Records Mgmt	3
801-196	Oral/Interpersonal Comm	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3

# Legal Studies/Paralegal

10-110-1 | 63 Credits | Two Years | Associate Degree

Do you see yourself working in an office with attorneys and investigators, serving clients to help meet their legal needs? Then the paralegal profession could be for you. Working under the supervision of an attorney, paralegals:

- Investigate facts of a case
- Work with clients
- Use computers to find/organize legal information
- Review contracts, medical records, and court transcripts
- Draft documents and prepare them for filing with a court
- Perform legal research
- Assist with trial preparation and attend court

CVTC's Legal Studies/Paralegal program is one of a select group of programs in the United States and the only paralegal program in the Chippewa Valley approved by the American Bar Association. CVTC's Legal Studies/Paralegal program has been providing quality paralegal instruction in the Chippewa Valley since 1978. Our faculty, attorneys and paralegals, have practical legal experience to guide you along a path of excellence in the law. The Legal Studies/Paralegal program is committed to preparing you for paralegal and legal assistant positions, improving the quality, accessibility, and affordability of legal services. Note that paralegals are not authorized to practice law.

Graduates work in many professional settings, often drawing on a second area of expertise to specialize in one or more areas of paralegal services:

- Hospitals or personal injury, medical malpractice, or elder law firms
- Immigration law, working with people who do not speak English
- Corporate legal departments
- Sports and entertainment agencies or companies
- Patent, copyright, trademark law firms
- Environmental law, working for state/federal government agencies
- Family law legal advocates
- Insurance companies, financial institutions, and real estate firms

If you have graduated with a Bachelor's in Arts or Science, you might consider obtaining a Paralegal diploma, which may be completed in one year.

## Program Courses

Course #	Course Title	Credits
110-101	Paralegal & Legal Ethic, Intro	3
110-102	Civil Litigation I	3
110-104	Legal Research	3
809-122	Intro to Amer Government	3
801-136	English Composition 1	3
	<b>--OR--</b>	
801-219	English Composition 1	3
106-141	Computer Applications-Legal	3
110-103	Civil Litigation II	3
110-105	Legal Writing	3
110-106	Family Law	3
110-122	Debtor and Creditor Relations	3
110-111	Insurance Law	3
110-114	Administration of Estates	3
110-160	Employment Law	3
110-168	Criminal Law-Paralegal	3
	<b>--OR--</b>	
809-159	Abnormal Psychology	3
809-198	Intro to Psychology	3

Course #	Course Title	Credits
110-110	Real Estate Law	3
110-147	Immigration Law	3
110-142	Paralegal Internship	3
	<b>--OR--</b>	
110-143	Paralegal Field Study	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
804-189	Introductory Statistics	3
	<b>--OR--</b>	
806-225	Introduction to Astronomy	3
809-128	Marriage & Family	3
	<b>--OR--</b>	
809-195	Economics	3

# Human Resources

10-116-1 | 60 Credits | Two Years | Associate Degree

Most organizations realize that their success depends on recruiting, developing, and retaining their employees, which is why the human resources function plays a critical role in business today. As a result, according to the U.S. Bureau of Labor Statistics, employment of human resource professionals will experience strong employment demand in the coming years. Our Human Resources Program equips students with the skills necessary to engage and motivate human talent in a diverse and competitive workplace. Human resource professionals lead organizations in meeting safety and legal compliance requirements, coordinating performance and compensation objectives, and recruiting, retaining, and training staff. CVTC's Human Resources Program is your first step toward a rewarding career.

This program includes internship and capstone courses and covers the key functions within human resources. You'll learn to:

- Create an organizational workforce plan
- Develop training programs
- Examine organizational total rewards programs
- Incorporate employment law into business practices
- Facilitate effective employee relations
- Model leadership skills to promote effective workplace relationships
- Apply risk and safety programs to protect an organization from potential liability

Graduates pursue careers as human resources generalists, staffing consultants/recruiters, trainers, payroll or benefits administrators, human resource specialists in private industry, non-profit organizations, and government agencies. Consider enrolling in CVTC's Human Resources Program today!

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
102-133	Leadership for Bus Excellence	3
104-102	Marketing Principles	3
116-193	Human Resources, Intro	3
801-136	English Composition 1	3
102-116	Strategic Management	3
116-110	Employee Benefits	3
116-114	Recruitment & Selection	3
801-198	Speech	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
116-112	Training & Development	3
116-113	Human Resource Law	3
116-116	Employee Relations	3
116-138	Safety, Security and Risk	3
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-195	Economics	3
101-121	Payroll Accounting	3
116-111	Performance Mgt & Total Reward	3
116-115	Human Resources Capstone	2
116-128	Human Resources Internship	1
801-196	Oral/Interpersonal Comm	3
809-198	Intro to Psychology	3

# IT - Network Specialist

10-150-2 | 62 Credits | Two Years | Associate Degree

If you enjoy problem-solving and working with the latest computer and networking technology, a career in the field of Information Technology is for you. The Information Technology-Network Specialist program prepares you to install, configure, and administer the networking equipment and network services that are common in LAN and WAN environments.

The program provides training on important computer and networking technologies. You'll learn to • Install and manage network operating systems, including Microsoft Windows, Unix, and Linux • Install and troubleshoot client and server computer hardware and software • Install and configure thin clients, virtual PCs, and servers • Manage various types of directory services • Implement network and user security • Monitor network event logs for problem resolution • Install, configure, and troubleshoot network hardware

The cost of the following professional certification exams is included in the course fees for the corresponding courses:

Professional Course Certification Exam: CompTIA A+

Additionally, after completing the appropriate courses, students may qualify to take the following professional certification exams: • CISA (Certified Information Systems Auditor) • CWNA (Certified Wireless Network Administrator) • CCNA (Cisco Certified Network Associate) • MCTS (Microsoft Certified Technology Specialist) • CCENT (Cisco Certified Entry Network Technician)

Career opportunities continue to grow dramatically, both within the district and nationally. This could be the training you need for a rewarding career!

## Program Courses

Course #	Course Title	Credits
150-103	Emerging Technology in IT	1
150-111	IT Software for Networking	2
150-143	IT Essentials	3
150-150	CCNA 1: Intro to Networks	3
150-176	Linux 1	2
804-133	Math & Logic	3
150-151	CCNA 2:Switch/Routing/Wire Ess	3
150-165	Microsoft Server 1	2
150-177	Linux 2	2
150-183	Wireless Networking	2
154-111	Endpoint Management	3
801-136	English Composition 1	3
	--OR--	
801-219	English Composition 1	3
150-105	IT Career Prep	2
150-110	Help Desk and User Support	1
150-118	Scripting	2
150-153	CCNA 3:Netwkg/Security/Automat	3

Course #	Course Title	Credits
150-166	Microsoft Server 2	2
150-184	IT Security Fundamentals	2
801-196	Oral/Interpersonal Comm	3
150-170	IT Service Center	2
	--OR--	
150-182	Network Specialist Internship	2
150-140	Virtualized Systems	3
150-155	Network Operations Mgmt	2
150-185	IT Networking Capstone	2
151-100	Intro to Cybersecurity	3
809-196	Intro to Sociology	3
	--OR--	
809-271	Introductory Sociology	3
809-198	Intro to Psychology	3
	--OR--	
809-251	General Psychology	3

# IT - Software Developer

10-152-1 | 60 Credits | Two Years | Associate Degree

If you enjoy working with computers and are interested in the design and development of computer applications, games, and web pages, the Information Technology - Software Developer program could be just what you're looking for. It will benefit those who wish to distinguish themselves across a wide range of technical disciplines within the field of software development.

You'll receive hands-on learning with individual and team projects that will allow you to:

- Explore operating systems and platforms, including UNIX, Windows and Mac OS X
- Design and write computer programs using Java, C++, and Visual Basic .Net
- Analyze business processes and apply solutions with Agile software development and industry-standard reporting tools such as SSRS and Crystal
- Develop dynamic Web applications using state-of-the-art tools: XHTML/CSS, ASP.NET, Java, JSP, JavaScript, XML/AJAX, Flash, and PHP
- Manage data and databases using SQL, MS Access, SQL Server, and MySQL
- Develop valuable workplace skills: time management, collaboration, communication, critical thinking, and environmental awareness

Additionally, after completing the appropriate courses, students may qualify to take the following professional certification exams:

- MCTS (Microsoft Certified Technology Specialist)
- OCPJP (Oracle Certified Professional Java Programmer)
- MTA DB (Microsoft Technology Associate Data Base)
- CIW JavaScript Specialist
- MCSD (Microsoft Certified Software Developer)

Interest in web based applications is at an all-time high, and new computer applications are always in development. The Information Technology - Software Developer program could be what you need to turn your interest in computers into a lifelong career. Graduates of this program also have the opportunity to transfer their credits to selected four-year institutions.

## Program Courses

Course #	Course Title	Credits
152-101	Programming Fundamentals	3
152-107	Web 1-HTML & CSS	3
152-118	Intro to Computers & Programmng	3
152-132	Database 1	3
804-133	Math & Logic	3
152-108	Web 2 - Client Side	3
152-129	Java Web Programming	3
152-136	Database 2	3
152-142	Object Oriented Programming	3
801-196	Oral/Interpersonal Comm	3
152-103	.NET Application Development	3
152-164	Web 4 - Server-Side	3
801-136	English Composition 1	3
152-159	Web 3 - Interactive Media	3
	<b>--OR--</b>	
152-161	3D Simulation Development	3
152-105	.NET-ASP	3
	<b>--OR--</b>	
152-114	iOS Development	3
152-166	IT Developer Capstone	3
152-169	Software Quality Control	3
152-171	Data Structures	3
809-196	Intro to Sociology	3
809-198	Intro to Psychology	3

# IT - Data Analyst

10-156-3 | 61 Credits | Two Years | Associate Degree

A graduate of the associate degree IT - Data & Analytics Specialist program will be able to collect and organize data to provide business insight. Data and Analytics Specialists are typically involved with selecting, integrating, querying, and aggregating data, and conducting a range of analytical studies on that data. They work across a variety of projects, providing technical data solutions to a range of stakeholders/customers issues. They document and report the results of data analysis activities to improve business performance.

## Program Courses

Course #	Course Title	Credits
103-170	Microsoft Excel	1
152-132	Database 1	3
156-101	Systems Analysis and Design	3
156-104	Beginners Guide-Data Analyst	3
801-136	English Composition 1	3
804-133	Math & Logic	3
152-136	Database 2	3
156-103	BI Data 1-Paginated	3
156-105	Python 1-Fundamentals	3
156-108	Artificial Intelligence Reveal	3
801-196	Oral/Interpersonal Comm	3
156-106	BI Data 2-Interactive	3
156-107	Python 2-Data Essentials	3
156-109	Introductory ETL	3
156-110	Data Analyst Toolbox	3
809-196	Intro to Sociology	3
156-115	BI Data 3-Visualization	3
156-119	Machine Learning	3
156-123	Data Security and Privacy	3
156-130	Data Analyst Capstone	3
809-198	Intro to Psychology	3

# Supply Chain Management

10-182-1 | 60 Credits | Two Years | Associate Degree

Based on industry-recognized APICS Principles, you'll learn about the entire supply chain operation, which includes the flow of goods and information from the point of origin to the point of consumption. You'll learn business fundamentals, as well as the specific supply chain operations of transportation, inventory control, materials management, operations management, purchasing, international business and logistics management. Your training will prepare you to increase profitability by optimizing company inventory investment.

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
103-102	Microsoft Office Suite	2
182-105	Intro to Supply Chain Mgmt	1
801-136	English Composition 1	3
809-166	Intro to Ethics: Theory & App	3
101-105	Accounting, Intro to	3
	<b>--OR--</b>	
101-111	Accounting I	4
102-114	Managing Operations	3
182-120	Fundamentals of Supply Chain	3
801-196	Oral/Interpersonal Comm	3
804-189	Introductory Statistics	3
809-198	Intro to Psychology	3
102-188	Project Management	3
152-132	Database 1	3
182-130	Princ of Distrib & Logistics	3
182-142	Princ of Inventory Mgmt	3
809-195	Economics	3
102-109	Business Analytics	3
102-116	Strategic Management	3
106-116	Database	1
182-140	Advanced Operations Planning	3
182-145	Enterprise Resource Management	3
182-146	Supply Chain Internship	2

# Graphic Design

10-201-1 | 60 Credits | Two Years | Associate Degree

Build solid skills and define your style in the graphic design field with the two-year Graphic Design associate degree at Chipewewa Valley Technical College. Successful Graphic Design students are creative and aware of visual details. Throughout the program, students apply those strengths to projects based on technical requirements and deadlines. At CVTC, you'll understand design fundamentals, learn about emerging trends, and develop professional graphic design skills for big-picture projects and day-to-day tasks.

## Program Courses

Course #	Course Title	Credits
201-101	Drawing & Illustration Concept	3
201-104	Photoshop Fundamentals	3
201-105	Typography Fundamentals	3
201-111	Graphic Design Foundation	3
801-136	English Composition 1	3
201-102	Digital Illustration	3
201-103	Publication Design	3
203-102	Design Photography	3
699-115	Editing and Proofreading	3
809-195	Economics	3
201-106	Graphic Design Project Mgmt	3
201-107	Premedia Graphics Promotions	3
201-110	Print Production	3
801-198	Speech	3
809-198	Intro to Psychology	3
	<i>Elective</i>	3
104-148	Digital Design Web Building	3
201-108	Graphic Design Capstone	3
201-109	Graphic Design Portfolio	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3

# Early Childhood Education

10-307-1 | 60 Credits | Two Years | Associate Degree

If you are seeking a career that involves helping children learn about themselves and the world around them, the Early Childhood Education program might be for you. As an early childhood teacher, you would play a vital role in the development of children. You will work with children individually and in groups to help them improve their social skills and prepare for formal education. In this program you will study the physical, emotional, intellectual, and social development of children. You will be placed with qualified teachers and childcare providers in a variety of early childhood community settings, such as group and family childcare settings, Head Starts, preschools, and kindergartens. You will also help create and complete a class advocacy project to improve the status of children and their families in this region.

You may enroll in the program full- or part-time. If you already have experience working in childcare or early childhood education, you could qualify for credit for prior learning. If you would like to continue your education, many of the credits you earn will transfer to selected universities toward a four-year degree in early childhood or elementary education.

The need for qualified, experienced childcare providers is strong. This is a career area that offers the rewards of working with children and the satisfaction of knowing you are helping them grow and develop. It could be just what you are looking for!

## Program Courses

Course #	Course Title	Credits
307-148	ECE: Foundations of ECE	3
307-151	ECE: Infant & Toddler Dev	3
307-160	ECE: Field Experience 1	3
307-167	ECE: Hlth Safety & Nutrition	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
307-170	ECE: Field Experience 2	3
307-179	ECE: Child Development	3
307-187	ECE: Children w Diff Abilities	3
307-188	ECE: Guiding Child Behavior	3
307-195	ECE: Family & Community Rel	3
	<i>Elective</i>	3
307-108	ECE: Early Language & Literacy	3
307-110	ECE: Soc S, Art, & Music	3
307-190	ECE: Field Experience 3	3
804-134	Mathematical Reasoning	3
307-112	ECE: STEM	3
307-210	ECE: Field Experience 4	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
809-122	Intro to Amer Government	3
	<b>--OR--</b>	
809-172	Intro to Diversity Studies	3

# Culinary Management

10-316-1 | 60 Credits | Two Years | Associate Degree

The Culinary Management associate degree will prepare diversified culinarians to implement theory and management skill sets towards professional food preparation and service standards in an ever-demanding marketplace. Students will learn basic and advanced culinary techniques, menu planning, beverage management, restaurant operations, nutrition, purchasing, cost control, and food service supervision.

A required internship will allow the practice of these skill demonstrations in a program mentor's location. Graduates have a number of superior employment opportunities locally or wherever their career requirements may lead.

## Program Courses

Course #	Course Title	Credits
316-101	Food Theory	3
316-102	Intro to Culinary Arts	5
316-105	Food Safety & Sanitation	2
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
809-103	Think Critically & Creatively	3
	<b>--OR--</b>	
809-166	Intro to Ethics: Theory & App	3
316-108	Service Management	2
316-111	Advanced Culinary Arts	5
316-143	Purchasing & Cost Control	1
316-145	Menu Design & Development	1
801-196	Oral/Interpersonal Comm	3
809-198	Intro to Psychology	3
314-100	Intro to Baking & Pastry	5
316-112	Garde Manger	3
316-147	Restaurant Operations Mgmt	4
801-136	English Composition 1	3
314-103	Advanced Baking and Pastry	5
316-136	Culinary Arts Internship	2
316-149	Culinary Business & Marketing	1
316-151	Event Operation Management	4
316-199	Intro to Food Truck	2

# Mechatronics Specialist

10-462-1 | 60 Credits | Two Years | Associate Degree

If you have an interest in working with technology, enjoy troubleshooting systems, earn an associate degree and take pride in craftsmanship, the Mechatronics Specialist program could be a good match for you. This program will prepare you to install, maintain, operate, diagnose, and repair automated equipment used in manufacturing industries and to maintain facilities/buildings with automated systems that create the products we use every day.

The Mechatronics Specialist program provides you with the skills you need in essential career areas: • Mechanics • Electrical • Water Treatment • Centrifugal pumps • Building maintenance of heating and cooling systems • Process control • Fluid handling systems and piping systems • Pneumatics • Troubleshooting • Welding • Hydraulics • Programmable Logic Controllers (PLCs) • Advanced technologies

As a multi-skilled industrial maintenance technician, you will become proficient in areas that greatly enhance your employment opportunities: • Laser alignment • Thermal and vibration analysis • Mechanical equipment installation, disassembly, and assembly • Pneumatics and hydraulics • Conveyance systems • Machine tool • Electrical troubleshooting • Building system maintenance • Welding • Preventative maintenance • Process pumping and piping systems • Automated machine troubleshooting • Programmable Logic Controllers (PLCs)

Graduates of the 1-year program simply apply to the program and take only 8 technical credits and 21 general education credits to earn their associate degree. (See program application for details.) According to the Department of Labor, graduates with broad skills in machine repair and maintenance should have favorable job prospects. Some employers have reported difficulty in recruiting workers with the necessary skills. This could be the career area and educational program you've been searching for!

## Program Courses

Course #	Course Title	Credits
419-116	Basic Hydraulics	2
419-117	Basic Pneumatics	2
442-120	Related Welding-Indust Mech	2
462-111	Mechanical Concepts	2
462-115	Industrial PC Network Concepts	2
462-119	Industrial Mechanical Skills	2
462-130	Mfg Prints & Networks	1
625-180	Manufacturing Skills Standards	2
462-118	Industrial Electric Principles	3
462-120	Centrifugal Pumps & Alignment	3
462-121	IOT Automated Manufacturing	4
462-123	PLC Manufacturing Applications	3
462-126	Mechanical Alignment & Bearing	2
419-102	Hydraulic System Operations	2
419-118	Pneumatic System Operations	2
462-122	Prev and Periodic Maintenance	1
462-132	Mach Trbleshting & Repair Adv	2
462-140	Piping Systems	2
462-150	Building System Maintenance	2

Course #	Course Title	Credits
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
462-141	Process Ctrl & Wtr Trtmnt Sys	2
462-151	New Technologies in Ind. Maint	2
801-197	Technical Reporting	3
809-195	Economics	3
809-199	Psychology of Human Relations	3

# Residential Construction Management

10-475-1 | 61 Credits | Two Years | Associate Degree

The Residential Construction Management associate degree program is for individuals interested in leadership roles in the construction industry. You will learn time management, project coordination, customer relations, scheduling, document management, advanced estimating, “Green” Building technologies, energy/resource management, emerging technologies integration, mechanical, electrical, & plumbing (MEP), and computer aided software (CAD) basics and residential design. This program is designed for individuals who have completed a one-year technical diploma program in Residential Construction or an individual with a strong background in residential/light commercial construction. Your construction experience will have to be verified to be accepted into the program.

Courses of study will include: Mechanical/Electrical/Plumbing systems MEP, Project Coordination & Scheduling, CAD Basics & Residential Design, Principals of Sustainability, Innovative Building Systems & Alternative Energy, Construction Proposals & Contracts, Advanced Estimating & Software Systems, English Comp or Speech, American Government or Intro to Sociology, Economics or Intro to Ethics, Principals of Management or Project Management. Students will serve a summer internship with local contractors between the first and second year. Career Opportunities:

A graduate of the Residential Construction Management program will be prepared to work in the light building construction field from new construction to remodeling. You will be able to work in areas as an onsite foreman, project supervisor, construction manager, estimator, energy resource manager, project resource manager, material sales, lumberyard manager, residential home designer/draftsperson, building envelope designer and energy consultant.

## Program Courses

Course #	Course Title	Credits
475-103	Construction Safety	2
475-108	Construction Industry Skills	1
475-109	Framing Methods/Bldg the Envel	3
475-111	Frmng Mthds/Bldng the Envl Lab	5
475-112	Const Basics & Print Reading	2
475-115	Roof Systems and Stairs	3
475-119	Finish Carpentry Int/Ext	3
475-121	Finish Carpentry Int/Ext Lab	5
475-124	Construction Planning	2
475-125	Est Residential Construction	3
475-145	Residential Const Internship	1
801-196	Oral/Interpersonal Comm	3
475-131	Mech/Electr/Plumb System	2
475-132	Proj Coordination & Scheduling	2
475-133	CAD Basics-Residential Design	2
804-134	Mathematical Reasoning	3
801-136	English Composition 1	3
	--OR--	
801-198	Speech	3
809-122	Intro to Amer Government	3
	--OR--	
809-196	Intro to Sociology	3

Course #	Course Title	Credits
475-130	Innovative Building Systems	2
475-140	Const Proposals & Contracts	2
475-141	Adv Estimation & Software Sys	3
102-112	Principles of Management	3
	--OR--	
102-188	Project Management	3
809-198	Intro to Psychology	3
	--OR--	
809-199	Psychology of Human Relations	3

# Technical Studies - Journeyworker

10-499-5 | 60 Credits | Two Years | Associate Degree

If you've completed an apprenticeship program in Wisconsin, the Technical Studies-Journeyworker program can lead to an associate degree designed around your individual needs. This program could be a good match for you if you're seeking career advancement in your professional field. You design your own program so you can meet your educational goals. You may be eligible for advanced standing based on training you've already completed. If you completed your apprenticeship program outside of Wisconsin, you may still be eligible for the Technical Studies-Journeyworker program. Past graduates have created programs that helped them gain supervisory and management roles in their chosen career area. The Technical Studies-Journeyworker program may be just what you need to help you take your career to the next level.

## Program Courses

Course #	Course Title	Credits
-2--2	WI Journey Certificate-400 hrs	39
<i>Choose 6 credits from the following:</i>		
801-136	English Composition 1	3
	--OR--	
801-196	Oral/Interpersonal Comm	3
	--OR--	
801-197	Technical Reporting	3
	--OR--	
801-198	Speech	3
<i>Choose 3 credits from the following:</i>		
804-113	College Technical Math 1A	3
	--OR--	
804-133	Math & Logic	3
	--OR--	
804-134	Mathematical Reasoning	3
	--OR--	
804-189	Introductory Statistics	3
	--OR--	
806-134	General Chemistry	4
<i>Choose 3 credits from the following:</i>		
809-188	Developmental Psychology	3
	--OR--	
809-198	Intro to Psychology	3
	--OR--	
809-199	Psychology of Human Relations	3

Course #	Course Title	Credits
<i>Choose 3 credits from the following:</i>		
809-122	Intro to Amer Government	3
	--OR--	
809-128	Marriage & Family	3
	--OR--	
809-166	Intro to Ethics: Theory & App	3
	--OR--	
809-172	Intro to Diversity Studies	3
	--OR--	
809-195	Economics	3
809-196	Intro to Sociology	3
	--OR--	
801-136	English Composition 1	3
	<i>Elective</i>	6

# Aesthetician - Advanced Practice

10-502-1 | 60 Credits | Two Years | Associate Degree

The Aesthetician - Advanced Practice program is a two-year program in which a student will complete all the general education and technical classes needed to be awarded an Associate of Applied Science in Aesthetician - Advanced Practice upon completion. CVTC's Aesthetician - Advanced Practice program is a science-based program where students will learn about the anatomy and physiology of the human body, focusing on facial anatomy and the skin. Students will graduate with the hands-on skills and theoretical knowledge needed to become licensed Aestheticians.

## Program Courses

Course #	Course Title	Credits
502-103	Aesthetic Health & Safety	2
502-104	Intro to Facial Theory & Skill	2
502-105	Anatomy & Phys Aesthetics	2
502-106	Intro to Aest Skills & Product	4
502-107	Aesthetic Guest Service & Prac	3
804-134	Mathematical Reasoning	3
502-108	Gen Aesth Thrp & Chem Trtmnts	2
502-109	Aesth Assessment & Intervntion	2
502-110	Aesthetic Microdermabrasion	2
502-111	Beginner Practical Client Serv	2
801-196	Oral/Interpersonal Comm	3
809-198	Intro to Psychology	3
104-102	Marketing Principles	3
502-112	Medical Conditions & Care	2
502-113	Intro to Advanced Aesthetics	2
502-114	Advanced Skin Science	2
502-115	Advanced Aesthetician Skills	2
502-116	Practical Client Srv & Bus Skl	3
102-112	Principles of Management	3
502-117	Med Spa Client Services	3
502-118	Laser Theory & Application	2
502-119	Laser Treatments & Procedure	2
801-136	English Composition 1	3
809-172	Intro to Diversity Studies	3

# Criminal Justice

10-504-5 | 61 Credits | Two Years | Associate Degree

The criminal justice field is becoming increasingly complex and important. This career area needs people who have good skills and highly developed personal strengths: • View toward community service • Motivated • High ethical and moral standards • Strong written and oral communication skills

The program provides the foundation for your career as a law enforcement officer at the municipal, county, or state level. Your career path could include serving as a correctional officer, working for a private investigation agency, or providing security for retail, commercial, or industrial establishments. The program includes related general education courses and criminal justice courses. You will receive theoretical and practical information on various types of law, community policing, corrections, and criminal justice ethics. Other courses will strengthen your ability to interact with the public, work with people from diverse backgrounds, and communicate in a professional manner.

As you complete the coursework, you'll be working toward the 720-hours of training required for certification by the Wisconsin Department of Justice, Training and Standards Bureau. You would have to meet criteria and apply for the 720 Law Enforcement Academy once you have obtained 60 college credits in your 4th semester. Opportunities for employment are good, and most employment areas offer good chances for advancement. This could be the training you need to begin a rewarding career in law enforcement or other careers in the criminal justice field.

## Program Courses

Course #	Course Title	Credits
504-104	CJ Orientation and Success Sem	1
504-162	Contemp. Issues in Crim. Just.	3
504-900	Intro to Criminal Justice	3
504-901	Constitutional Law	3
801-136	English Composition 1	3
809-172	Intro to Diversity Studies	3
504-103	Criminal Justice Employability	3
504-902	Criminal Law	3
504-903	Professional Communications	3
801-197	Technical Reporting	3
804-134	Mathematical Reasoning	3
504-170	Corrections, Intro to	3
504-905	Report Writing	3
504-906	Criminal Investigations I	3
504-907	Community Policing Strategies	3
809-198	Intro to Psychology	3
504-107	Crisis Management	3
504-121	Patrol Procedures	3
504-904	Juvenile Law and Justice	3
504-909	Criminal Investigations II	3
504-166	Criminal Justice Internship	3
	--OR--	
504-910	Law Enforcement Academy Prep	3
	--OR--	
504-912	CJ Human Service Seminar	3

# Dental Hygienist

10-508-1 | 70 Credits | Two Years | Associate Degree

The Dental Hygienist program is a good option if you are seeking a career in the health field, have good organizational skills, enjoy working with people, and are detail oriented. During your educational program, you will work as a member of a dental health team and learning in CVTC's very own operational dental clinic, focusing on the assessment, diagnosis, treatment planning, implementation, evaluation, and documentation of dental disease as well as prevention of dental disease. You will:

- Perform oral inspections
- Remove deposits and stains from teeth
- Learn radiographic (x-ray) techniques using digital sensors as well as analog or traditional film-based x-rays
- Counsel patients in preventative dental care

There is also a service-learning requirement, allowing you to receive a broad base of dental experience in general dentistry as well as specialty areas, giving you a better understanding of the array of dental options available to patients. The program prepares you to take the national, regional, and state practical exams that are required for you to be licensed. Graduates of the program are held to high standards. They must:

- Meet the dental health needs of diverse populations
- Customize and proceed with emergency care protocol based on recognizing symptoms of medical/dental emergencies
- Use the most current infection control guidelines and safety precautions in all laboratory and clinical settings
- Apply principles of dental practice management as a member of a dental health team
- Demonstrate ethical and professional behavior in all roles as a dental hygienist

Graduates are working in public and private dental practices, hospitals, community dental health facilities, and in research. Job prospects are expected to remain excellent. You have opportunities! This program is accredited by the Commission on Dental Accreditation of the American Dental Association.

## Program Courses

Course #	Course Title	Credits
806-177	Gen Anatomy & Physiology	4
508-101	Dental Health Safety	1
508-102	Oral Anatomy, Embry, Histology	4
508-103	Dental Radiography	2
508-105	Dental Hygiene Process 1	4
806-186	Intro to Biochemistry	4
806-197	Microbiology	4
508-106	Dental Hygiene Process 2	4
508-108	Periodontology	3
508-109	Cariology	1
508-110	Nutrition and Dental Health	2
508-111	General & Oral Pathology	3
801-136	English Composition 1	3
	<b>--OR--</b>	
801-219	English Composition 1	3
508-112	Dental Hygiene Process 3	5
508-113	Dental Materials	2
508-114	Dental Pharmacology	2
508-115	Community Dental Health	2
809-198	Intro to Psychology	3

Course #	Course Title	Credits
508-107	Dental Hygiene Ethics & Profes	1
508-117	Dental Hygiene Process 4	4
508-118	Dental Anxiety & Pain Managmnt	2
508-168	Health Career Occupations	1
809-188	Developmental Psychology	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-196	Intro to Sociology	3

# Surgical Technology

10-512-1 | 61 Credits | Two Years | Associate Degree

Surgical technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The surgical technologist works under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works under the supervision of a surgeon to ensure that the operating room or environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety. A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures, and implementation tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

## Program Courses

Course #	Course Title	Credits
501-101	Medical Terminology	3
806-177	Gen Anatomy & Physiology	4
512-125	Intro to Surgical Technology	4
512-126	Surgical Tech Fundamentals 1	4
512-127	Exploring Surgical Issues	2
806-197	Microbiology	4
512-128	Surgical Tech Fundamentals 2	4
512-129	Surgical Pharmacology	2
512-130	Surgical Skills Application	2
809-198	Intro to Psychology	3
801-136	English Composition 1	3
	<b>--OR--</b>	
801-219	English Composition 1	3
512-131	Surgical Interventions 1	4
512-132	Surgical Technology Clinical 1	3
512-133	Surgical Technology Clinical 2	3
801-196	Oral/Interpersonal Comm	3
512-135	Surgical Technology Clinical 3	3
512-136	Surgical Technology Clinical 4	3
512-142	Surgical Interventions II	4
809-196	Intro to Sociology	3

# Medical Laboratory Technician

10-513-1 | 67 Credits | Two Years | Associate Degree

Scope out your future in the Medical Laboratory Technician program at CVTC. If you find research exciting and like the thought of working in a lab, this is the right choice for you. This program helps you acquire the entry-level knowledge and skills you need to work in a clinical laboratory. Your work as a medical lab technician will help provide basic clues to potential illnesses, making this a rewarding career choice. In the program you will learn how to:

- Collect and process biologic specimens for analysis
- Perform analytical tests on blood, body fluids, and tissues
- Recognize pre-analytical and analytical variables in laboratory testing
- Monitor quality control
- Perform preventative and corrective maintenance on laboratory instruments
- Maintain professional conduct in communication with patients, health care professionals, and the public

The program includes a clinical experience allowing students to practice the principles and procedures of laboratory medicine in a clinical laboratory setting, including the operation of state-of-the-art instrumentation and the use of laboratory information systems to report.

When you complete the program, you will be awarded an associate of applied science degree as a Medical Laboratory Technician and will be eligible to take the national certification exam offered by the American Society for Clinical Pathology Board of Certification (ASCP-BOC).

## Program Courses

Course #	Course Title	Credits
513-110	Basic Lab Skills	1
513-111	Phlebotomy	2
513-113	QA Lab Math	1
513-115	Basic Immunology Concepts	2
801-136	English Composition 1	3
806-177	Gen Anatomy & Physiology	4
806-186	Intro to Biochemistry	4
513-109	Blood Bank	4
513-114	Urinalysis	2
513-120	Basic Hematology	3
513-121	Coagulation	1
806-197	Microbiology	4
809-198	Intro to Psychology	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-197	Technical Reporting	3
	<b>--OR--</b>	
801-198	Speech	3
809-166	Intro to Ethics: Theory & App	3
	<b>--OR--</b>	
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-195	Economics	3

Course #	Course Title	Credits
513-116	Clinical Chemistry	4
513-130	Advanced Hematology	2
513-133	Clinical Microbiology	4
513-140	Advanced Microbiology	2
513-145	MLT Seminar	2
513-144	Clinical Experience 3	4
513-151	Clinical Experience 1	3
513-152	Clinical Experience 2	4
513-170	Intro to Molecular Diagnostics	2

# Respiratory Therapy

10-515-1 | 67 Credits | Two Years | Associate Degree

Respiratory therapists, as members of a team of health care professionals, work to evaluate, treat, and manage patients of all ages with respiratory illnesses and other cardiopulmonary disorders in a wide variety of clinical settings. Respiratory therapists must behave in a manner consistent with the standards and ethics of all health care professionals. In addition to performing respiratory care procedures, respiratory therapists are involved in clinical decision making (such as patient evaluation, treatment selection, and assessment of treatment efficacy) and patient education.

The scope of practice for respiratory therapy includes, but is not limited to:

- Assessing the cardiopulmonary status of patients
- Drawing blood samples, performing blood gas analysis, and pulmonary function testing
- Initiating ordered respiratory care, evaluating and monitoring patient responses to such care, modifying the prescribed respiratory therapy and cardiopulmonary procedures and life support endeavors to achieve desired therapeutic objectives
- Providing patient, family, and community education
- Participating in life support activities as required

At graduation, the student is qualified for admission to the entry-level and advanced practitioner examinations to become a registered respiratory therapist. The program is accredited by the Commission on Accreditation of Allied Health Education Programs, on recommendation of the Committee on Accreditation for Respiratory Care (CoARC).

Respiratory Therapy is a full-time program. When a student is admitted as a program student, they must complete the program as outlined on the program requirement sheet. Fourth and fifth semester clinical sites require weekly travel with overnight stays. Students should be aware that this adds additional expenses to the fourth and fifth semester.

## Program Courses

Course #	Course Title	Credits
806-177	Gen Anatomy & Physiology	4
501-101	Medical Terminology	3
515-111	Respiratory Survey	3
515-171	Respiratory Therapeutics 1	3
515-173	Respiratory Pharmacology	3
515-172	Respiratory Therapeutics 2	3
515-174	Respiratory/Cardiac Physiology	3
515-176	Respiratory Disease	3
801-196	Oral/Interpersonal Comm	3
801-136	English Composition 1	3
515-175	Respiratory Clinical 1	2
806-197	Microbiology	4
515-112	Respiratory Airway Management	2
515-113	Respiratory Life Support	3
515-178	Respiratory Clinical 2	3
515-179	Respiratory Clinical 3	3
809-198	Intro to Psychology	3
515-145	Adv Respiratory Care Topics	2
515-180	Respiratory Neo/Peds Care	2
515-181	Respiratory/Cardio Diagnostics	3
515-182	Respiratory Clinical 4	3
515-183	Respiratory Clinical 5	3
809-196	Intro to Sociology	3

# Foundations of Teacher Education

10-522-2 | 60 Credits | Two Years | Associate Degree

If you love working with school-aged children and feel a career in education is calling you, the Foundations of Teacher Education associate degree program at Chippewa Valley Technical College is right for you. The two-year program is offered online. The typical instructional assistant or paraprofessional will work under the supervision of a licensed teacher, performing a variety of tasks in the classroom including monitoring student's activities, tutoring, correcting papers, proctoring assessments, facilitating small groups and supervising various classroom and school events.

CVTC's Foundations of Teacher Education degree program is convenient, affordable, and flexible. The online classes make it easy to perform coursework whenever it is convenient. Students will benefit from instructors with teaching experience. Students will gain practicum experience and training at area public schools. CVTC's Foundations of Teacher Education program meets Title I requirements and fulfills the requirements of Every Student Succeeds Act (ESSA) for paraprofessionals. CVTC's Foundations of Teacher Education program will provide opportunities to concentrate in Career and Technical Education disciplines leading to Secondary CTE teaching careers.

## Program Courses

Course #	Course Title	Credits
522-103	EDU: Intro to Ed Practices	3
522-104	EDU: Technology in Ed	3
522-105	EDU: Behavior Management	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
522-102	EDU: Techniques in Reading	3
522-106	EDU: Child & Adol Dev	3
522-107	EDU: Overview of Spec Ed	3
522-129	EDU: Practicum 1	3
801-198	Speech	3
	<i>Elective</i>	3
522-112	EDU: Equity in Education	3
522-114	EDU: Techniques/Lang Art	3
522-119	EDU: Techniques in Soc Stu	3
809-122	Intro to Amer Government	3
522-118	EDU: Techniques in Math	3
522-120	EDU: Techniques in Science	3
522-124	EDU: Supporting Stu w/Disab	3
522-131	EDU: Practicum 2	3
<i>Choose 3 credits from the following:</i>		
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
	<b>--OR--</b>	
806-201	Principles of Biology	4

# Physical Therapist Assistant

10-524-1 | 61 Credits | Two Years | Associate Degree

If you are dependable, patient, empathetic, able to do some lifting, have good communication skills, and are interested in a career in the health field, the Physical Therapist Assistant program could be for you. The program prepares you to become a physical therapist assistant in a hospital, nursing home, rehabilitation center, or other health care facility. You would assist the physical therapist:

- Implement treatment programs
- Teach patients to perform exercises
- Conduct treatments using special equipment

Physical therapist assistants are employed in physical therapy clinics, nursing care facilities, physicians' offices, general medical and surgical hospitals, and other health care settings. They also work for home health organizations and school systems. The need for physical therapist assistants is projected to grow due to the increased need for support personnel in health care and the shortage of physical therapists. This could be the program you're looking for!

The Physical Therapist Assistant program at Chippewa Valley Technical College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax St., Alexandria, Virginia 22314; Telephone: 703-706-3245; E-mail: [accreditation@apta.org](mailto:accreditation@apta.org); Website: [www.capteonline.org](http://www.capteonline.org).

## Program Courses

Course #	Course Title	Credits
524-139	PTA Patient Interventions	4
524-156	PTA Applied Kinesiology 1	4
524-157	PTA Applied Kinesiology 2	3
806-177	Gen Anatomy & Physiology	4
524-140	PTA Professional Issues 1	2
524-142	PTA Therapeutic Exercise	3
524-143	PTA Biophysical Agents	4
524-145	PTA Princ of Musculo Rehab	4
524-147	PTA Clinical Practice 1	2
524-148	PTA Clinical Practice 2	3
801-136	English Composition 1	3
524-144	PTA Princ of Neuro Rehab	4
524-146	PTA Cardio & Integ Mgmt	3
809-188	Developmental Psychology	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
524-149	PTA Rehab Across the Lifespan	2
524-150	PTA Professional Issues 2	2
524-151	PTA Clinical Practice 3	5
809-172	Intro to Diversity Studies	3

# Radiography

10-526-1 | 68 Credits | Two Years | Associate Degree

The Radiography program may be a good match for you if you are: • efficient and accurate with an eye for detail • able to follow physicians' orders • compassionate • seeking a career helping others • physically able to meet the demands of the profession • good at science and math

As a radiologic technologist, you will work with patients to produce radiographs that aid in the diagnosis of diseases. You will prepare patients for the exam, position them for the radiograph, and follow all regulations to protect yourself, your patients, and your co-workers from unnecessary exposure. This is a physically demanding career; you're on your feet for long periods and must be able to lift or turn patients and move equipment. You'll learn through classroom, laboratory, and clinical education experiences. You'll work with patients as part of your training. When you graduate, you are eligible to write the ARRT national registry examination to become an RT(R), Registered Technologist (Radiography).

The Radiography program is accredited by the Joint Review Committee on Education in Radiologic Technology, 20N Wacker Drive, Suite 2840, Chicago, IL 60606-2901; phone 312-704-5300; fax 312-704-5304; e-mail mail@jrcert.org; website www.jrcert.org. Employment prospects are good for registered technologists. Radiologic technologists willing to relocate and who are experienced in more than one diagnostic imaging modality (x-ray, CT, MRI) have the best employment opportunities. The Radiography Program could be your first step toward a rewarding career!

## Program Courses

Course #	Course Title	Credits
806-177	Gen Anatomy & Physiology	4
526-149	Radiographic Procedures 1	5
526-158	Introduction to Radiography	3
526-159	Radiographic Imaging	3
526-165	Radiography Clinical 1	1
526-191	Radiographic Procedures 2	5
526-192	Radiography Clinical 2	3
526-230	Advanced Radiographic Imaging	2
<i>Choose 3 credits from the following:</i>		
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-211	Quantitative Reasoning	4
526-183	Radiography Clinical 3	2
526-231	Imaging Modalities	2
809-198	Intro to Psychology	3
526-189	Radiographic Pathology	1
526-194	Imaging Equipment Operation	3
526-199	Radiography Clinical 4	3
801-136	English Composition 1	3
	<b>--OR--</b>	
801-219	English Composition 1	3
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-195	Economics	3

Course #	Course Title	Credits
526-184	Radiography Clinical 5	3
526-195	Radiographic Image Analysis	2
526-197	Radiation Protection & Biology	3
801-196	Oral/Interpersonal Comm	3
809-196	Intro to Sociology	3
526-174	ARRT Certification Seminar	2
526-185	Radiography Clinical 6	3

# Diagnostic Medical Sonography

10-526-2 | 70 Credits | Two Years | Associate Degree

The Diagnostic Medical Sonography (DMS) program can prepare you for entry-level employment in a general ultrasound department. Duties of a sonographer include performing abdominal, obstetrical, and gynecologic imaging; superficial structure imaging; and limited vascular ultrasound imaging. Sonographers operate high-technology equipment while working with patients who may be sick, disabled, and/or dependent. You must apply knowledge of anatomy, physiology, and pathophysiology to the human body for success in this program and in your profession. You will be required to complete a seven-month internship during the second year and must be prepared to relocate for that portion of your program. Advanced standing status in this program is available for people with a minimum of two years of education in allied health, such as Radiography or Nursing.

Upon graduation, you will be prepared for and therefore eligible to complete the national registry examination in ultrasound physics, obstetrics/gynecology, and abdominal ultrasound (ARDMS Boards).

The program is accredited through the Committee on Allied Health Education and Accreditation/JRC-DMS, 6021 University Boulevard, Suite 500, Ellicott City, MD 21043; [www.jrcdms.org](http://www.jrcdms.org); e-mail [jrcdms@intersocietal.org](mailto:jrcdms@intersocietal.org).

## Program Courses

Course #	Course Title	Credits
804-113	College Technical Math 1A	3
806-154	General Physics 1	4
806-177	Gen Anatomy & Physiology	4
501-101	Medical Terminology	3
526-200	Intro to DMS	3
526-210	Cross Sectional Anatomy	2
526-221	Sonography Physics 1	3
801-136	English Composition 1	3
526-207	Abdominal Sonography	4
526-208	OB/GYN Sonography 1	3
526-222	Sonography Physics 2	2
526-223	Vascular Imaging 1	3
806-179	Adv Anatomy & Physiology	4
526-203	Scanning With Proficiency	1
526-211	Superficial Sonography	2
526-212	OB/GYN Sonography 2	3
526-224	Vascular Imaging 2	3
809-198	Intro to Psychology	3
526-209	DMS Clinical Experience 1	2
526-226	DMS Clinical Experience 2	4
801-196	Oral/Interpersonal Comm	3
809-196	Intro to Sociology	3
526-215	DMS Clinical Experience 3	4
526-217	Registry Review	1

# Funeral Service

10-528-1 | 64 Credits | Two Years | Associate Degree

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. 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). Coursework will include embalming, arranger training, grief studies, business management, religious funeral practices, regulatory compliance and more.

## Program Courses

Course #	Course Title	Credits
801-136	English Composition 1	3
806-134	General Chemistry	4
806-177	Gen Anatomy & Physiology	4
809-196	Intro to Sociology	3
809-198	Intro to Psychology	3
101-111	Accounting I	4
102-160	Business Law	3
806-197	Microbiology	4
801-196	Oral/Interpersonal Comm	3
801-198	Speech	3

# Health Information Management & Technology

10-530-6 | 63 Credits | Two Years | Associate Degree

If you are interested in the healthcare industry and information technology, the Health Information Management & Technology Program (HIMT) is the right choice. When studying health information, students will acquire a versatile yet focused skill set incorporating electronic health record (EHR) data management, data analytics, information integrity, data quality, workflow re-design and medical coding and billing. Health information professionals use their knowledge of healthcare, information technology, and data management to form the link between clinicians, administrators, and information technology professionals, all “behind the scenes” of direct patient care.

The HIMT Program’s curriculum focuses on: • Healthcare Compliance: regulatory, medical coding, fraud surveillance, clinical documentation improvement • Revenue Management: fee and revenue cycle • Data Use and Analytics: analytics and decision support, statistics, consumer informatics, data quality & integrity • Information Governance: EHR data management • Health Information Protection: access, disclosure, archival, & privacy & security

The HIMT program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). Graduates from this program are eligible to take the national certification examination offered by AHIMA to become a Registered Health Information Technician (RHIT). These are credentials required by employers for most positions in this field.

## Program Courses

Course #	Course Title	Credits
501-101	Medical Terminology	3
501-130	Healthcare IT	2
530-107	HIMT Fundamentals	3
530-182	Human Diseases for Hlth Profes	3
806-177	Gen Anatomy & Physiology	4
530-103	Medical Insurance & Billing	2
530-184	CPT Coding	3
530-197	ICD Diagnosis Coding	3
801-136	English Composition 1	3
804-189	Introductory Statistics	3
530-118	HC Statistics & Data Analytics	2
530-178	Healthcare Law & Ethics	2
801-196	Oral/Interpersonal Comm	3
530-151	Applied HIM Technology 1	2
530-156	HIM Leadership & Management	2
530-159	Healthcare Revenue Management	3
530-160	Healthcare Informatics	3
530-199	ICD Procedure Coding	2
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-195	Economics	3
530-152	Applied HIM Technology 2	2
530-161	Health Quality Management	3
530-192	HIMT Practicum	2
530-195	Applied Coding	2
809-198	Intro to Psychology	3

# Paramedic Technician

10-531-1 | 64 Credits | Two Years | Associate Degree

If you're calm in emergencies, are interested in a career in the health field, and have a desire to help others, the Paramedic Technician program could be a good match for you. As a paramedic, you would provide competent care to people by:

- Responding to medical and traumatic emergencies
- Assessing ill and injured people
- Initiating care (within your scope of practice)
- Providing for continuity of care
- Taking care of patients under direct medical control

You will also provide advanced care, including administering medications, interpreting EKGs, performing endotracheal intubation, and using monitors and other advanced procedures. Emergency services function 24 hours a day, seven days a week, so you will have irregular working hours. You'll need to be emotionally stable, have good dexterity and agility, and be able to lift and carry heavy loads.

Upon graduation from the Paramedic Technician program, you are eligible to apply to write the National Registry of EMT's examination and apply to the Wisconsin Department of Health and Family Services for licensure. Your career could take you to a variety of settings, including ambulance services, fire departments, industrial settings, prisons, jails, and hospital emergency departments. Employment opportunities are expected to be good. This could be the start of a very promising, rewarding career for you!

## Program Courses

Course #	Course Title	Credits
531-911	EMS Fundamental	2
801-136	English Composition 1	3
806-177	Gen Anatomy & Physiology	4
809-198	Intro to Psychology	3
531-182	Advanced Prehospital Skills	2
531-912	Paramedic Medical Principles	4
806-179	Adv Anatomy & Physiology	4
531-913	Adv. Patient Assess Principles	3
531-914	Adv. Pre-hospital Pharmacology	3
531-915	Paramedic Respiratory Mgt.	2
531-916	Paramedic Cardiology	4
531-925	Paramedic Clinical Field 1A	2
806-197	Microbiology	4
531-918	Adv Emergency Resuscitation	1
531-919	Paramedic Medical Emergencies	4
531-920	Paramedic Trauma	3
531-921	Special Patient Populations	3
531-926	Paramedic Clinical Field 1B	1
801-197	Technical Reporting	3
809-172	Intro to Diversity Studies	3
531-922	EMS Operations	1
531-923	Paramedic Capstone	1
531-924	Paramedic Clinical/Field 2	4

# FireMedic

10-531-2 | 67 Credits | Two Years | Associate Degree

If you keep a clear head during emergencies and want to help people in need, the FireMedic program could be a good match for you. This program prepares you for a career in fire service and paramedic arenas. It is a career area that requires highly developed character: • Emotional stability and maturity • Good verbal and written communication skills • Good math and mechanical ability • Ability to display good judgment under stress • Caring for and empathy toward all people

Your coursework focuses on preparing you to respond to the diverse incidents of today's emergency service. Your program will include special courses in water, confined space, trench, high angle, and vehicle extrication rescue. When you finish the program, you are prepared to take the National Registry for Emergency Medical Technician (EMT)-Paramedic, Firefighter I, and Fire Apparatus Driver Operator exam.

While most graduates seek employment as career firefighters/paramedics, you have other opportunities. Your combined training in firefighting and paramedics strengthens your chances for placement in a related field. Your career path may lead you to working as a member of an industrial emergency response team or serving as a representative for a fire/emergency medical equipment vendor. According to the U.S. Department of Labor, the employment outlook for firefighters and paramedics is good. You have opportunities and options!

## Program Courses

Course #	Course Title	Credits
503-105	Principles of Firefighting	4
531-911	EMS Fundamental	2
801-136	English Composition 1	3
806-177	Gen Anatomy & Physiology	4
503-146	Advanced Firefighting Concepts	3
809-198	Intro to Psychology	3
503-141	Special Rescue	2
531-182	Advanced Prehospital Skills	2
531-912	Paramedic Medical Principles	4
801-197	Technical Reporting	3
809-172	Intro to Diversity Studies	3
531-913	Adv. Patient Assess Principles	3
531-914	Adv. Pre-hospital Pharmacology	3
531-915	Paramedic Respiratory Mgt.	2
531-916	Paramedic Cardiology	4
531-918	Adv Emergency Resuscitation	1
531-925	Paramedic Clinical Field 1A	2
503-109	Fire Dept Apparatus Ops	1
531-919	Paramedic Medical Emergencies	4
531-926	Paramedic Clinical Field 1B	1
503-130	FireMedic Internship	1
531-920	Paramedic Trauma	3
531-921	Special Patient Populations	3
531-922	EMS Operations	1
531-923	Paramedic Capstone	1
531-924	Paramedic Clinical/Field 2	4

# Massage Therapy - Advanced Practice

10-537-1 | 60 Credits | Two Years | Associate Degree

This program will provide training for a professional career in massage therapy. Students will gain knowledge of human anatomy with a focus on the musculoskeletal system. Students will be trained in key massage therapy techniques and applications. Students will be prepared to take exams for the Wisconsin Department of Safety and Professional Services Massage Therapy and Bodywork license.

## Program Courses

Course #	Course Title	Credits
537-100	Massage Therapy 1	3
537-101	MT Ethics & Business Practices	3
537-102	MT Applied Kinesiology 1	3
537-104	Massage Therapy 2	3
806-177	Gen Anatomy & Physiology	4
537-106	MT Pathology & Pharmacology	2
537-108	MT Applied Kinesiology 2	3
537-110	Massage Therapy 3	3
537-112	Massage Therapy Practice 1	1
801-196	Oral/Interpersonal Comm	3
809-198	Intro to Psychology	3
537-114	Massage Therapy Practice 2	2
104-102	Marketing Principles	3
537-115	MT Special Populations	3
537-116	Massage Therapy Practice 3	3
801-136	English Composition 1	3
809-172	Intro to Diversity Studies	3
102-112	Principles of Management	3
537-117	Advanced Massage Techniques	3
537-118	Massage Therapy Practice 4	3
537-119	MT Lymphedema & Craniosacral	3

# Nursing

10-543-1 | 70 Credits | Two Years | Associate Degree

Could you be a registered nurse? The profession needs people with highly developed personal strengths: • Effective communicator • Able to work in teams • Critical thinking skills • Teaching ability • Desire to help others • Commitment to health

When you successfully complete the first year of this program you will have met the academic requirements to take the practical nursing (LPN) licensure examination. Upon completion of the second year of the program the student has met the academic requirements to take the NCLEX-RN licensure examination. Employment of registered nurses is expected to grow much faster than the average for all occupations. The best employment opportunities are for those who are willing to relocate. This is a demanding program, and nursing is a demanding profession. But a career in nursing also offers tremendous rewards - and could be the career you've been searching for.

The program is a member of and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3390 Peachtree Road, NE, Suite 1400, Atlanta, GA 30326, Phone: (404) 975-5000; <http://www.acenursing.org>

## Program Courses

Course #	Course Title	Credits
806-177	Gen Anatomy & Physiology	4
806-179	Adv Anatomy & Physiology	4
543-101	Nursing Fundamentals	2
543-102	Nursing Skills	3
543-103	Nursing Pharmacology	2
543-104	Nurs Intro Clinical Practice	2
809-188	Developmental Psychology	3
801-136	English Composition 1	3
801-219	English Composition 1	3
543-105	Nursing Health Alterations	3
543-106	Nursing Health Promotion	3
543-107	Nsg: Clin Care Across Lifespan	2
543-108	Intro to Clinical Care Mgmt	2
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
	<b>--OR--</b>	
810-201	Fundamentals of Speech	3
	<i>Elective</i>	2
543-109	Nursing Complex Health Alts 1	3
543-110	Mental Health & Comm Concepts	2
543-111	Nursing Intermediate Clin Prac	3
543-112	Nursing Advanced Skills	1
806-197	Microbiology	4
809-198	Intro to Psychology	3

Course #	Course Title	Credits
	<i>Elective</i>	3
543-113	Nursing Complex Health Alts II	3
543-114	Nursing Mgmt & Prof Concepts	2
543-115	Nursing Adv Clinical Practice	3
543-116	Nursing Clinical Transition	2
809-172	Intro to Diversity Studies	3
	<b>--OR--</b>	
809-196	Intro to Sociology	3
	<b>--OR--</b>	
809-271	Introductory Sociology	3

# Substance Use Disorder Counseling

10-550-1 | 64 Credits | Two Years | Associate Degree

If your healthy lifestyle includes low-risk choices regarding substance use, the ability to work independently and within a team, and a desire to use your written and oral communication skills to help others, the Substance Use Disorder Counseling program could be the career training for you.

SUDC associates are held to high ethical standards to inspire respect, trust, and confidence. Your conduct must never compromise your ability to fulfill your professional responsibilities. To succeed, your skills and character must include: • Emotional stability, maturity, self-awareness, self-discipline, and personal responsibility • A minimum of six months free of substance use-related problems • An interest in working with people and appreciation of cultural diversity • Strong reading, writing, and abstract thinking skills

This program offers you opportunities to learn skills you'll use every day in your career such as: • Clinically evaluate for substance use disorders and treatment needs • Facilitate referral to meet needs • Demonstrate case management skills • Demonstrate counseling skills with individuals, groups, and families • Provide culturally relevant education related to substance use • Document and maintain clinical records per agency, federal and state guidelines • Adhere to accepted ethical and behavior conduct

Program graduates are licensed in Wisconsin as Substance Abuse Counselors-In Training, qualifying for entry-level employment in a rewarding career.

## Program Courses

Course #	Course Title	Credits
550-200	Intro to the SUDC Profession	3
550-201	Understanding Substance Use	3
550-210	Boundaries/Ethics Helping Prof	3
801-136	English Composition 1	3
	--OR--	
801-219	English Composition 1	3
809-188	Developmental Psychology	3
	--OR--	
809-198	Intro to Psychology	3
	--OR--	
809-251	General Psychology	3
806-177	Gen Anatomy & Physiology	4
550-154	Culturally Skilled Counseling	3
550-205	Counseling Theory	3
550-206	Intro Interview&Counsel Skills	3
550-207	Psychopharmacology	3
801-197	Technical Reporting	3
801-196	Oral/Interpersonal Comm	3
	--OR--	
810-201	Fundamentals of Speech	3

Course #	Course Title	Credits
550-202	Foundations of Case Management	3
550-204	Group Facilitation	3
550-208	SUDC Assessmt, Diagnosis, Tmt	3
550-211	Clinical Experience I	3
809-196	Intro to Sociology	3
	--OR--	
809-271	Introductory Sociology	3
550-161	SUDs & Criminality	3
550-203	Overview Mental Hlth Disorders	3
550-209	Family Systems	3
550-212	Clinical Experience II	3

# Library & Information Services

10-557-1 | 60 Credits | Two Years | Associate Degree

The Library & Information Services program prepares students for entering careers in libraries, education, or media professions. Program emphasis is placed on library and education ethics, advocating library services in the community, modeling exceptional customer service, and assessing a wide range of library, media, and educational technologies. The program will also provide continuing education opportunities for current employees and may lead to certification for Wisconsin public library directors.

Completion of the Library & Information Services program will culminate in an Associate in Applied Arts degree and may meet some general education and program requirements of the University of Wisconsin. Some graduates will work as paraprofessionals in libraries, schools, and private industry, become library directors in the Wisconsin public library community, or choose to continue their education at various four-year institutions.

## Program Courses

Course #	Course Title	Credits
103-102	Microsoft Office Suite	2
557-111	Fnd of Library & Info Services	3
557-127	Outreach & Community Services	3
801-136	English Composition 1	3
890-115	Online Success Strategies	1
557-113	Basic Public Library Admin	3
	<b>--OR--</b>	
557-115	School Library Principles	3
557-117	Managing & Org Collections	3
557-121	Fund of Access Services	3
801-196	Oral/Interpersonal Comm	3
809-172	Intro to Diversity Studies	3
557-125	Children's Literature & Srvs	3
	<b>--OR--</b>	
557-143	Adult Literature & Services	3
557-131	Young Adult Literature & Srvs	3
557-133	Fund of Reference Services	3
557-134	Library and Web Technologies	3
557-148	Information Literacy	3
809-198	Intro to Psychology	3
557-141	Library Mentorship	3
557-145	Fundamentals of Tech Services	3
557-149	Info Ethics & Legal Issues	3
804-134	Mathematical Reasoning	3
557-136	Advanced School Libraries	3
	<b>--OR--</b>	
557-147	Advanced Public Library Admin	3

# Air Conditioning, Heating & Refrigeration Technology

10-601-1 | 66 Credits | Two Years | Associate Degree

This is a program and career area that draws on your mechanical ability and analytical skills and offers excellent employment opportunities - including career advancements in many HVAC/R- and energy-related occupations. The Air Conditioning, Heating, & Refrigeration Technology (ACHR) program prepares you for careers designing, installing, and maintaining air conditioning, heating, and refrigeration equipment.

You'll also learn how to work with geothermal, solar, and other renewable energy equipment. The first semester of instruction serves as an introduction to the industry:

- Gas, oil, and electric furnaces
- Basic refrigeration and air conditioning systems
- Principles of ACHR electricity

The rest of your program will focus on specific applications:

- Geothermal systems
- Solar heating
- Print reading
- Load calculations
- Solving technical problems
- CAD
- Air handling system design and installation
- Advanced temperature controls
- Hydronics
- HVAC systems design and drafting

After you graduate, you will be prepared to take the Environmental Protection Agency (EPA) Certification Exam for safe handling of refrigerants. The Industry Competency Exam (ICE) sponsored by the Air Conditioning and Refrigeration Institute for HVAC/R technicians is a requirement for all students. Nationally there is a shortage of design, installation, and maintenance technicians, and an increasing need for technicians trained to work with alternative energy systems. This could be the program you need to launch your career!

## Program Courses

Course #	Course Title	Credits
601-105	Refrigeration Principles	2
601-106	Refrigeration Theory	1
601-107	Heating Theory	1
601-108	Prncples of Gas Heat & Airfl	2
601-109	Prin of Oil, Elec & Hydron Htg	1
601-116	Principles of Air Conditioning	2
601-123	HVACR Industry Skills 1	1
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2
601-118	Sustainability for HVAC	1
601-121	HVAC/R Service & Applications	3
601-122	HVACR Industry Skills 2	1
601-130	Sheet Metal Layout	1
601-144	Solar/Wind Applications	2
601-145	Geothermal Applications	1
601-147	Schematic Wiring-Trblshtng	1
601-151	Technical Problems-HVAC	2
601-153	Basic Home Automation	1
601-163	Residential HVAC Load Calcs	2
801-196	Oral/Interpersonal Comm	3

Course #	Course Title	Credits
601-114	Plan & Print Reading-HVAC	2
601-119	Hydronic System Design	3
601-155	HVAC Air Handling	2
601-169	Basic HVAC CAD	2
601-171	HVACR Installation Principles	2
801-136	English Composition 1	3
804-113	College Technical Math 1A	3
601-117	Drafting-HVAC	2
601-143	Advanced HVAC Controls	2

# Mechanical Design Technology

10-606-1 | 61 Credits | Two Years | Associate Degree

Any machine - from tractors to aerospace equipment - must be designed before it can be produced. The Mechanical Design program prepares students with skills to design and draw machines using modern engineering practices. Mechanical designers create drawings that give producers a clear picture of the product or component to be produced. The student will construct two-dimensional working drawings and three-dimensional part models on a microcomputer using CAD software. Quality, design, manufacturing, and product reliability are stressed in this program as is creativity, problem-solving ability, and teamwork.

Students in this program have the opportunity to learn about the newest trends in manufacturing technology through the school's membership in AutoDesk's Alliance for Manufacturing Productivity. The Society of Manufacturing Engineers offers certification at Chippewa Valley Technical College.

## Program Courses

Course #	Course Title	Credits
606-103	Mechanical Design Concepts	2
606-130	Solid Modeling I	3
606-142	Additive Manufacturing	1
606-159	CAD, 2D	2
801-136	English Composition 1	3
804-115	College Technical Math 1	5
606-104	Geometric Dimen & Tolerancing	1
606-133	Statics	3
606-136	Solid Modeling 2	2
606-137	Mfg. Materials Processes	2
606-167	Advanced CAD	2
623-117	Intro to Precision Measurement	1
806-154	General Physics 1	4
606-112	Tool Design Practices	3
606-118	Mechanisms	3
606-121	Mechanical Design Proj Mgmt	2
606-141	Strength of Materials	3
801-197	Technical Reporting	3
606-123	Mechanism Design	2
606-127	Machine Design	4
606-151	Capstone Design Project	2
606-152	PLC & Fluid Power Application	2
809-195	Economics	3
809-199	Psychology of Human Relations	3

# Architectural Structural Design

10-614-7 | 62 Credits | Two Years | Associate Degree

If you enjoy working with computer applications and have an interest in construction, consider the Architectural Structural Design program. As a graduate, you would be part of the team that completes the complex plans needed before construction of major buildings. Your responsibilities could cover a wide range:

- Design and prepare site plans for residential and commercial buildings
- Design and prepare construction documents (architectural and structural) for wood frame, masonry, concrete, and steel frame buildings
- Design and prepare presentation drawings for proposed buildings and present ideas
- Prepare plans, schedules, and details using AutoCAD, and Revit software systems
- Prepare structural steel shop drawings and erection plans for commercial buildings
- Select and prepare the required design calculations for concrete and steel beams and columns, footings, floor slabs, and open web steel joists

Your training will help you understand technical data and the proper use of construction materials:

- Architectural drafting
- Structural drafting
- Surveying
- Structural analysis
- Construction in concrete/steel
- Estimating

Traditionally, graduates find employment in engineering offices. The program emphasizes the development of computer-aided drafting skills, providing you with the skills you need to succeed in today's highly competitive job market. This could be the career area you're looking for!

## Program Courses

Course #	Course Title	Credits
614-100	Draft Fund/Wood Frame Construc	3
614-117	Revit Architecture	3
614-140	Structural Analysis	4
614-164	CAD Architecture	3
804-113	College Technical Math 1A	3
614-111	Architectural Drafting 1	3
614-153	Architectural Illustrating	2
614-156	Construction Concrete	3
614-157	Construction Steel	4
614-113	Architectural Drafting 2	3
614-125	Mechanical Systems	3
614-148	Structural Drafting 1	4
614-155	Surveying & Site Planning	4
801-136	English Composition 1	3
614-149	Structural Drafting 2	2
614-151	Tech Problems-Arch Structural	3
614-160	Model Based Steel Detailing	3
801-197	Technical Reporting	3
809-195	Economics	3
809-199	Psychology of Human Relations	3

# Manufacturing Engineering Technologist

10-623-8 | 60 Credits | Two Years | Associate Degree

The Manufacturing Engineering Technologist program prepares graduates to work in the manufacturing sector. They will assist engineering and management in the design and development of new products and in the improvement of production processes. The program provides instruction for skilled production workers with hands-on training to:

- Apply principles, techniques, procedures, and equipment to the design and production of various goods and services
- Design and produce 2D and 3D components and assemblies
- Apply engineering economics and management principles to support strategic planning, resource allocation, leadership technique, production methods, and coordination of people and resources
- Analyze and troubleshoot manufacturing processes and systems for safety and quality
- Monitor production processes with an emphasis on safety and quality assurance

Coursework includes communication, math, chemistry, physics, and solid modeling design. You will design, analyze and recommend product and process improvements for manufactured industrial and consumer products. You will use measurement instrumentation, explore manufacturing processes, statistics, communication, math, quality assurance, safety, and computer aided design.

In addition, the program offers training in leadership, sociology, psychology, and project management to help graduates prepare for their careers in manufacturing engineering technology. This program is designed for workforce entry as Manufacturing Engineering Technologist and has been aligned with four-year degree pathways to engineering technology and industrial management.

## Program Courses

Course #	Course Title	Credits
606-159	CAD, 2D	2
623-101	Engineering Principles	1
801-136	English Composition 1	3
804-115	College Technical Math 1	5
806-134	General Chemistry	4
606-130	Solid Modeling I	3
623-133	Automation for Manufacturing	3
801-196	Oral/Interpersonal Comm	3
804-189	Introductory Statistics	3
806-154	General Physics 1	4
606-137	Mfg. Materials Processes	2
606-142	Additive Manufacturing	1
623-117	Intro to Precision Measurement	1
623-130	Lean Fundamentals	2
623-135	Data Analytics	2
623-154	Engineering Economy	3
809-198	Intro to Psychology	3

Course #	Course Title	Credits
606-102	Principles of Design	2
606-104	Geometric Dimen & Tolerancing	1
623-119	Advanced Inspection Techniques	1
623-137	Plant Layout	2
625-110	Mfg & Quality Assurance	3
809-196	Intro to Sociology	3
102-112	Principles of Management	3
	--OR--	
102-188	Project Management	3
	--OR--	
623-114	Industry Practicum	3

# Automation Engineering Technology

10-664-1 | 61 Credits | Two Years | Associate Degree

The Automation Engineering Technology program can prepare you for a career in servicing, installing, and repairing the automated equipment used in manufacturing, food and ethanol processing, and mining. Automated manufacturing processes are increasing in speed and complexity. For you, this means exciting jobs with great pay! This could be a good career area for you if you can work in a team environment but also can solve problems and function on your own. You'll need to find solutions rapidly while working on complex mechanical and electrical systems.

Successful students have good mechanical aptitude and a curiosity about how things work. In addition to classroom instruction, you will work on state-of-the-art equipment used in the field. The Automation Engineering Technology program can help you develop skills that apply in several career areas: • Electronics • Pneumatics • Hydraulics • Computers • Programmable Logic Controllers (PLC) • Robotics • Mechanics • Other automated equipment

Graduates of this program work on equipment that makes everything from paper products to electronics to food products. If you're interested in gaining the foundation for a lifetime of opportunities in high-tech manufacturing, processing, and mining, this could be the program for you.

## Program Courses

Course #	Course Title	Credits
605-118	Basic Electronics with Digital	2
606-185	Blueprint Reading	1
612-101	Related Fluid Power	2
620-101	Automated Processes	2
620-155	Industrial Electronics I	2
620-193	Electronic Software Applic	2
804-113	College Technical Math 1A	3
605-136	Electronic Control Devices	2
620-135	PLC Introduction	2
620-144	Applied EM Machine Principles	2
620-156	Industrial Electronics II	2
801-136	English Composition 1	3
806-154	General Physics 1	4
620-136	PLC Applications	3
620-145	Industrial Robotics Systems	2
620-158	Sensors	2
620-194	Motion Control Applications	2
631-109	Industrial Internet of Things	2
809-199	Psychology of Human Relations	3
605-152	SCADA Concepts	2
620-146	Machine Troubleshooting Tech	2
620-147	Control Applications	2
620-148	Automated Systems Interfacing	4
620-150	Instrumentation	2
801-197	Technical Reporting	3
809-195	Economics	3

# Professional Communications

10-699-1 | 60 Credits | Two Years | Associate Degree

This program focuses on professional, technical, and business writing for a variety of media and industries and prepares individuals for professional careers as technical writers, copy writers, editors, grant writers, and related writing careers in business, government, and non-profit organizations. The program includes instruction in theories of rhetoric, writing, and digital literacy; document design, production, and management; editing and proofreading; visual rhetoric and multimedia composition; documentation development; web writing; and publishing.

## Program Courses

Course #	Course Title	Credits
103-102	Microsoft Office Suite	2
699-105	Document Design	3
699-107	Professional/Technical Writing	3
801-136	English Composition 1	3
809-198	Intro to Psychology	3
890-115	Online Success Strategies	1
699-115	Editing and Proofreading	3
699-117	Research Basics	3
801-196	Oral/Interpersonal Comm	3
801-197	Technical Reporting	3
804-134	Mathematical Reasoning	3
	<b>--OR--</b>	
804-189	Introductory Statistics	3
699-125	Proposal/Grant Writing	3
699-127	Digital Media Communications	3
699-133	Digital Content Writing	3
801-141	Intro to Mass Comm	3
809-196	Intro to Sociology	3
102-188	Project Management	3
699-131	Information Design	3
699-135	Writing and Publishing	3
699-137	Technical Documentation	3
699-138	Professional Comm Capstone	2
699-139	Professional Comm Internship	1

# Individualized Technical Studies

10-825-1 | 60 Credits | Two Years | Associate Degree

If you've got a career goal in mind and have not been able to find just the right educational program to help you prepare for it, the Individualized Technical Studies program could be what you're looking for. This program allows you to combine courses from two or more major areas of study into an Associate of Applied Science Degree that meets your career preparation goals. You begin by completing a program plan outlining your career objectives and the courses you'll need to meet those objectives.

This program is designed to focus on your needs and plans: • Provides the flexibility to meet your educational needs based on your career goals • Accepts that your goals cannot be achieved through enrollment in any single instructional program offered at CVTC, and allows you to create your own educational program • Allows you to pursue the Associate of Applied Science Degree full- or part-time • Works with employers to provide a flexible program of study to meet the educational needs of their employees

The Individualized Technical Studies program may be just what you need to help take your career to the next level.

## Program Courses

Course #	Course Title	Credits
	<i>Elective</i>	9
<i>Choose 6 credits from the following:</i>		
801-136	English Composition 1	3
	--OR--	
801-196	Oral/Interpersonal Comm	3
	--OR--	
801-197	Technical Reporting	3
	--OR--	
801-198	Speech	3
	<i>Elective</i>	12
<i>Choose 3 credits from the following:</i>		
809-122	Intro to Amer Government	3
	--OR--	
809-128	Marriage & Family	3
	--OR--	
809-166	Intro to Ethics: Theory & App	3
	--OR--	
809-172	Intro to Diversity Studies	3
	--OR--	
809-195	Economics	3
	--OR--	
809-196	Intro to Sociology	3
	<i>Elective</i>	12
<i>Choose 3 credits from the following:</i>		
809-159	Abnormal Psychology	3
	--OR--	
809-188	Developmental Psychology	3
	--OR--	
809-198	Intro to Psychology	3
	--OR--	
809-199	Psychology of Human Relations	3

Course #	Course Title	Credits
	<i>Elective</i>	12
<i>Choose 3 credits from the following:</i>		
804-107	College Mathematics	3
	--OR--	
804-113	College Technical Math 1A	3
	--OR--	
804-118	Interm Algebra w Apps	3
	--OR--	
804-123	Math w Business Apps	3
	--OR--	
804-133	Math & Logic	3
	--OR--	
804-134	Mathematical Reasoning	3
	--OR--	
806-134	General Chemistry	4

# Liberal Arts - Associate of Arts

20-800-1 | 60 Credits | Two Years | Liberal Arts Transfer

Do your interests lie in the humanities, business, and/or social science fields? If you have a wide variety of academic interests or if you are currently uncertain about a specific academic program in which to specialize, the Associate of Arts – Liberal Arts degree may be for you. While earning this degree you will gain diverse knowledge and skills that broaden perspectives in critical-thinking, problem-solving, and communication abilities.

Courses in the Associate of Arts - Liberal Arts degree program serve two purposes: (1) they may be used toward an Associate of Arts degree in Liberal Arts at CVTC; and (2) they may transfer to a university to be included in a baccalaureate (4-year) degree from that university.

If you have not chosen a major field of post-secondary study, enrolling in the Associate of Arts - Liberal Arts degree program will offer a variety of general education courses that may prove helpful in that selection process while - at the same time - fulfilling many requirements of a university baccalaureate program. If you have chosen a major field of post-secondary study, CVTC advisors are available to assist in the course selection process to assure that selected courses will meet the minimum credit requirements of each area of the Associate of Arts - Liberal Arts degree while also achieving the degree requirements of a specific university baccalaureate program.

CVTC has three principal partners in the Associate of Arts - Liberal Arts degree program, the University of Wisconsin-Eau Claire, the University of Wisconsin-River Falls, and the University of Wisconsin-Stout. However, you should work directly with these and other universities to see how your credits will transfer into your chosen program.

## Program Courses

Course #	Course Title	Credits
<b>Communication</b>		<b>9</b>
801-219	English Composition 1	3
801-223	English Composition 2	3
810-201	Fundamentals of Speech	3
810-205	Interpersonal/Small Group Comm	3
<b>Humanities &amp; Fine Arts/Social &amp; Behavioral Sciences</b> <i>21 overall credits (minimum in each category below)</i>		
<b>Humanities &amp; Fine Arts</b>		<b>6</b>
801-204	Introduction to Literature	3
801-239	American Literature Since 1865	3
801-240	Intro to Creative Writing	3
801-243	American Literature to 1865	3
802-218	Latin American Studies <i>(Can also count for Global Studies &amp; Languages)</i>	3
803-211	U.S. History to 1877	3
803-212	U.S. History 1877-Present	3
803-214	Native American History <i>(Can also count for Diversity/Ethnic Studies)</i>	3
803-236	The Vietnam Era <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-225	Ethics	3
809-230	Applied Research	3

Course #	Course Title	Credits
<b>Humanities &amp; Fine Arts, (cont.)</b>		
815-201	Art Appreciation	3
815-205	Introduction to Drawing	3
890-261	Foundation of Research Methods	4
<b>Social &amp; Behavior Sciences</b>		<b>6</b>
809-202	Social Problems	3
809-214	Introduction to Gender Studies <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-223	International Relations <i>(Can also count for Global Studies &amp; Languages)</i>	3
809-227	American Government	3
809-229	Political Theory	3
809-251	General Psychology	3
809-271	Introductory Sociology	3
809-272	Race & Ethnicity in the U.S. <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-291	Principles of Microeconomics	3
809-292	Principles of Macroeconomics	3
<b>Natural Sciences</b> <i>(must include 1 lab course)</i>		<b>6</b>
806-201	Principles of Biology*	4
806-271	Cellular and Molecular Biology*	4

\* Indicates lab course

CONT. ON NEXT PAGE

# Liberal Arts - Associate of Arts, (cont.)

20-800-1 | 60 Credits | Two Years | Liberal Arts Transfer

Course #	Course Title	Credits
<b>Natural Sciences, (cont.)</b>		<b>6</b>
806-207	Anatomy & Physiology 1*	4
806-208	Anatomy & Physiology 2*	4
806-225	Introduction to Astronomy*	3
806-232	Human Reproductive Biology	3
806-245	Principles of Gen Chemistry 1*	5
806-249	Principles of Gen Chemistry 2*	5
806-276	Principles of General Physics*	5
806-286	Environmental Science*	4
<b>Math</b>		<b>3</b>
804-205	Precalculus	4
804-211	Quantitative Reasoning	4
804-224	College Algebra	4
804-228	Trigonometry	3
804-230	Statistics	4
804-236	Calculus & Analytic Geometry 1	5
804-240	Calculus & Analytic Geometry 2	5
<b>Global Studies &amp; Languages</b>		
<b>Complete 1 course - Additional options indicated above</b>		
Requirement can also be met with one year of World Language in high school with a "C" or better.		
802-211	Spanish 1	4
802-212	Spanish 2	4
<b>Diversity/Ethnic Studies</b>		
<b>Complete 1 course - Additional options indicated above</b>		
803-214	Native American History (Can also count for Humanities & Fine Arts)	3
809-272	Race & Ethnicity in the U.S. (Can also count for Social & Behavioral Sciences)	3
<b>Electives</b>		<b>Up to 21 credits</b>
Electives should be selected based on individual academic, career, or transfer goals. Electives can include Associate Degree level classes from other programs or excess credits from other categories listed on this Program Requirement sheet. Please work with your advisor to select electives based on your goals.		
807-268	Wellness Today	1
890-204	Transfer Planning for U	1

\* Indicates lab course

# Liberal Arts - Associate of Science

20-800-2 | 60 Credits | Two Years | Liberal Arts Transfer

Do your interests lie in the natural, physical, medical sciences, and/or mathematics? If you have a wide variety of academic interests or if you are currently uncertain about a specific academic program in which to specialize, the Associate of Science - Liberal Arts degree may be for you. While earning this degree you will gain diverse knowledge and skills that broaden perspectives in critical-thinking, problem-solving, and communication abilities.

Courses in the Associate of Science - Liberal Arts degree program serve two purposes: (1) they may be used toward an Associate of Science degree in Liberal Arts at CVTC; and (2) they may transfer to a university to be included in a baccalaureate (4-year) degree from that university. For students who have not chosen a major field of post-secondary study, enrolling in the Liberal Arts degree program will offer a variety of general education courses that may prove helpful in that selection process while - at the same time - fulfilling many requirements of a university baccalaureate program.

If you have chosen a major field of post-secondary study, CVTC advisors are available to assist in the course selection process to assure that selected courses will meet the minimum credit requirements of each area of the Associate of Science - Liberal Arts degree while also achieving the degree requirements of a specific university baccalaureate program.

CVTC has three principal partners in the Associate of Science - Liberal Arts degree program, the University of Wisconsin-Eau Claire, the University of Wisconsin-River Falls, and the University of Wisconsin-Stout. However, you should work directly with these and other universities to see how your credits will transfer into your chosen program.

## Program Courses

Course #	Course Title	Credits
<b>Communication</b>		<b>9</b>
801-219	English Composition 1	3
801-223	English Composition 2	3
810-201	Fundamentals of Speech	3
810-205	Interpersonal/Small Group Comm	3
<b>Humanities &amp; Fine Arts</b>		<b>6</b>
801-204	Introduction to Literature	3
801-239	American Literature Since 1865	3
801-240	Intro to Creative Writing	3
801-243	American Literature to 1865	3
802-218	Latin American Studies <i>(Can also count for Global Studies &amp; Languages)</i>	3
803-211	U.S. History to 1877	3
803-212	U.S. History 1877-Present	3
803-214	Native American History <i>(Can also count for Diversity/Ethnic Studies)</i>	3
803-236	The Vietnam Era <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-225	Ethics	3
809-230	Applied Research	3
815-201	Art Appreciation	3
815-205	Introduction to Drawing	3
890-261	Foundation of Research Methods	4

Course #	Course Title	Credits
<b>Social &amp; Behavior Sciences</b>		<b>6</b>
809-202	Social Problems	3
809-214	Introduction to Gender Studies <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-223	International Relations <i>(Can also count for Global Studies &amp; Languages)</i>	3
809-227	American Government	3
809-229	Political Theory	3
809-251	General Psychology	3
809-271	Introductory Sociology	3
809-272	Race & Ethnicity in the U.S. <i>(Can also count for Diversity/Ethnic Studies)</i>	3
809-291	Principles of Microeconomics	3
809-292	Principles of Macroeconomics	3

<b>Natural Sciences and Math</b>		
<b>18 overall credits (minimum in each category below)</b>		
<b>Natural Sciences</b> <i>(must include 2 lab* courses from different disciplines)</i>		<b>6</b>
<b>CHEMISTRY</b>		
806-245	Principles of Gen Chemistry 1*	5

\* Indicates lab course

CONT. ON NEXT PAGE

# Liberal Arts - Associate of Science, (cont.)

20-800-2 | 60 Credits | Two Years | Liberal Arts Transfer

Course #	Course Title	Credits
<b>CHEMISTRY, (cont.)</b>		
806-249	Principles of Gen Chemistry 2*	5
<b>LIFE SCIENCE</b>		
806-201	Principles of Biology*	4
806-271	Cellular and Molecular Biology*	4
806-207	Anatomy & Physiology 1*	4
806-208	Anatomy & Physiology 2*	4
806-232	Human Reproductive Biology	3
806-286	Environmental Science*	4
<b>PHYSICS</b>		
806-225	Introduction to Astronomy*	3
806-276	Principles of General Physics*	5
<b>Math</b>		<b>3</b>
804-205	Precalculus	4
804-211	Quantitative Reasoning	4
804-224	College Algebra	4
804-228	Trigonometry	3
804-230	Statistics	4
804-236	Calculus & Analytic Geometry 1	5
804-240	Calculus & Analytic Geometry 2	5

\* Indicates lab course

Course #	Course Title	Credits
<b>Global Studies &amp; Languages</b>		
<b>Complete 1 course - Additional options indicated above</b>		
Requirement can also be met with one year of World Language in high school with a "C" or better.		
802-211	Spanish 1	4
802-212	Spanish 2	4
<b>Diversity/Ethnic Studies</b>		
<b>Complete 1 course - Additional options indicated above</b>		
803-214	Native American History (Can also count for Humanities & Fine Arts)	3
809-272	Race & Ethnicity in the U.S. (Can also count for Social & Behavioral Sciences)	3
809-272	Race & Ethnicity in the U.S.	3
<b>Electives</b>		<b>3</b>
Electives should be selected based on individual academic, career, or transfer goals. Electives can include Associate Degree level classes from other programs or excess credits from other categories listed on this Program Requirement sheet. Please work with your advisor to select electives based on your goals.		
807-268	Wellness Today	1
890-204	Transfer Planning for U	1

# **ADVANCED TECHNICAL CERTIFICATES**

# Expanded Function Dental Auxiliary

11-508-1 | 11 Credits | One Year | Advanced Technical Certificate

Wisconsin EFDA certification permits the holder to perform the following activities as delegated and supervised by a dentist: Placement and finishing of restoration material after dentist prepares a tooth; Application of sealants; Coronal polishing; Impressions; Temporizations; Packing cord; Removal of cement from crowns; Adjustment of dentures and other removable oral appliances; Removal of sutures and dressings; Application of topical fluoride, fluoride varnish, or similar dental topical agents.

## Program Courses

Course #	Course Title	Credits
508-101	Dental Health Safety	1
508-121	EFDA Dental Procedures	3
508-122	EFDA Preventative Procedures	1
508-123	EFDA Prosthodontic Procedure	2
508-124	EFDA Clinical	2
508-304	Dental & General Anatomy	2

# TECHNICAL DIPLOMAS

# Farm Business & Production Management

30-090-1 | 24 Credits | Six years, Part Time | Technical Diploma

The Farm Business & Production Management program is designed to further your education in production agriculture, whether you are just entering this career area or have years of experience: • Farmers • Farm family members • Farm employees • Ag professionals • FSA borrowers • Bankers and lenders • Non-traditional farmers

Day and evening courses are offered to provide you with practical information you can use immediately: • Farm Business Production Management - Six courses offered; topics include crop production, land use management, livestock production, financial and business planning, and livestock health and biosecurity • Cash Grain Production - Three courses offered in a three-year rotation; topics include agronomy cultural practices, facilities and equipment management, and marketing and financial management In addition to classroom experiences, you'll receive individualized instruction: • Implementing technologies, including computer assistance • Farm business analysis, financial planning, and record keeping assistance • Livestock and crop production practices

The Farm Business & Production Management program can help you make the most of your resources part-time, while you continue with your usual career responsibilities.

## Program Courses

Course #	Course Title	Credits
090-310	Farm Bus Planning & Risk Mgmt	4
090-320	Land Use Management	4
090-330	Precisn Agronomics&EnergyMgmt	4
090-340	Livestock Nutrition&Reproductn	4
090-350	Farm Bus Analysis&Mrkt Strat	4
090-360	Livestk Fac,Health&Biosecurity	4

# Bookkeeper

30-101-3 | 9 Credits | Less Than One Year | Technical Diploma

Designed for small businesses seeking to better perform routine accounting and payroll transactions, individuals seeking employment as an entry-level bookkeeper, or individuals currently employed seeking to expand their basic accounting skills and knowledge. Participants will learn to process basic financial transactions and perform payroll operations. With this credential, learners can advance their skills to better meet the needs of small businesses to perform routine accounting tasks and reduce costs for accounting services.

## Program Courses

Course #	Course Title	Credits
101-111	Accounting I	4
101-121	Payroll Accounting	3
101-149	Intro to QuickBooks	2

# Business Generalist

30-102-5 | 22 Credits | Less Than One Year | Technical Diploma

Whether you're an entry-level employee or you're a seasoned worker looking to update your skills, the Business Generalist technical diploma is a great fit for you. You'll learn how to apply supervision, marketing, and human resources skills in a business setting. This diploma can be completed in one year so you can apply your new skills right away.

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
102-133	Leadership for Bus Excellence	3
104-102	Marketing Principles	3
116-193	Human Resources, Intro	3
103-170	Microsoft Excel	1
102-109	Business Analytics	3
102-113	Business Ethics	3
102-130	Innovative Business Mindset	3

# Office Receptionist

30-106-3 | 14 Credits | Less Than One Year | Technical Diploma

The Receptionist embedded technical diploma (one-semester) program prepares students with basic receptionist skills necessary in today's business office. Those working in this career may be expected to answer the telephone, greet customers, work with basic office equipment, and assist with various administrative support tasks. Students will learn how to interact with customers, perform various office procedures, and utilize computer skills. After successful completion of the Receptionist embedded technical diploma program, the student has the opportunity to apply these credits to the Office Assistant embedded technical diploma 1-year program.

## Program Courses

Course #	Course Title	Credits
101-105	Accounting, Intro to	3
103-102	Microsoft Office Suite	2
106-201	Innovative Customer Service	3
106-202	Intro to the Smart Office	3
106-203	AI Foundations for Business	3

# Legal Studies/Paralegal Post-Baccalaureate

30-110-2 | 24 Credits | Less Than One Year | Technical Diploma

The Legal Studies/Paralegal Post-baccalaureate program prepares students for highly responsible entry-level positions as paralegals or legal assistants. Students take courses that provide them with the basic competencies to begin a career as a paralegal or legal assistant. The Legal Studies/Paralegal Post-baccalaureate diploma is appropriate for those persons who already have earned a bachelor's degree. Students who have not earned a bachelor's degree should apply to the Legal Studies/Paralegal Associate Degree Program. A paralegal or legal assistant is a person qualified by education, training, or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity to perform specifically-designated substantive legal work for which a lawyer is responsible. Paralegals may not provide legal services to the public, except as permitted by law.

## Program Courses

Course #	Course Title	Credits
110-101	Paralegal & Legal Ethic, Intro	3
110-102	Civil Litigation I	3
110-104	Legal Research	3
110-114	Administration of Estates	3
	<b>--OR--</b>	
110-168	Criminal Law-Paralegal	3
110-103	Civil Litigation II	3
110-105	Legal Writing	3
110-106	Family Law	3
	<b>--OR--</b>	
110-147	Immigration Law	3
110-142	Paralegal Internship	3
	<b>--OR--</b>	
110-143	Paralegal Field Study	3

# Library Director

30-557-1 | 12 Credits | Less Than One Year | Technical Diploma

Wisconsin library directors are required to be certified by the Wisconsin DPI, this helps to ensure that the public libraries in the state are administered by highly qualified library personnel. Qualifications for the certification are based on education, training and experience. Graduates of the LIS program will have the required coursework for a Grade III certification, which includes 54 semester credit hours from a college and the four required library-specific courses.

## Program Courses

Course #	Course Title	Credits
557-113	Basic Public Library Admin	3
557-127	Outreach & Community Services	3
557-117	Managing & Org Collections	3
557-147	Advanced Public Library Admin	3

# IT - Software Development Specialist

30-152-5 | 15 Credits | Less Than One Year | Technical Diploma

The IT - Software Development Specialist credential prepares individuals to provide technical assistance in resolving software based computer problems in today's digital office environments. This program takes one semester to complete.

## Program Courses

Course #	Course Title	Credits
152-101	Programming Fundamentals	3
152-107	Web 1-HTML & CSS	3
152-118	Intro to Computers & Programmng	3
152-132	Database 1	3
801-196	Oral/Interpersonal Comm	3

# Baking and Pastry Specialist

30-314-4 | 24 Credits | Less Than One Year | Technical Diploma

The Baking & Pastry Specialist program will help you develop the skills necessary to pursue a career in the food-service industry within restaurants, bakeries, catering services, delis, hotels, resorts, healthcare facilities and schools. In this hands-on program you will spend time in the lab developing basic through advanced industry skills by creating breads, desserts, and pastries. You will also gain skills related to managing a bakery department.

## Program Courses

Course #	Course Title	Credits
314-100	Intro to Baking & Pastry	5
316-101	Food Theory	3
316-102	Intro to Culinary Arts	5
316-105	Food Safety & Sanitation	2
314-103	Advanced Baking and Pastry	5
316-108	Service Management	2
316-143	Purchasing & Cost Control	1
316-145	Menu Design & Development	1

# Renewable Energy

30-401-3 | 15 Credits | Less Than One Year | Technical Diploma

This embedded technical diploma prepares students with skills necessary for basic geothermal, solar photovoltaic, solar thermal, and wind services. After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.

## Program Courses

Course #	Course Title	Credits
601-106	Refrigeration Theory	1
601-107	Heating Theory	1
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2
601-118	Sustainability for HVAC	1
601-144	Solar/Wind Applications	2
601-145	Geothermal Applications	1
601-147	Schematic Wiring-Trblshtng	1
801-196	Oral/Interpersonal Comm	3

# Truck Driving

30-458-1 | 12 Credits | Less Than One Year | Technical Diploma

*\*This program is partially eligible for student loans.*

The trucking industry needs trained professionals with the skills and personal characteristics to get the job done: • Independent, but able to follow regulations • Excellent driving skills • Responsible; concerned for safety • Able to follow directions

If that's how you'd describe yourself, the Truck Driving program could be the training you've been looking for. Your course will provide you with the knowledge you need to begin your truck driving career: • Federal and state regulations • How to maintain the driver's logbook • Safe operating procedures • Loading and securing loads • Engines, transmissions, and differentials • Map-reading • Handling related tools and equipment • Bills of lading, hazardous materials

Through hands-on, simulation, and on-line instructional experiences, you'll receive training patterned after the day-to-day demands of this career: • Shifting 9-, 10-, and 13-speed transmissions • Conducting the pre-trip inspection • Coupling and uncoupling • Backing maneuvers • Operating tractors and 48-/53-foot trailers

You may also gain training to give you a competitive edge in your career, including a Class "A" Commercial Driver's License with air brakes: hazardous materials and advanced training in off-road recovery, evasive maneuvers, controlled braking, and skid control. This program will be a combination of traditional classroom, lab and online computer-based learning. The first 2 days of instruction will be delivered in a face-to-face computer lab. The remaining lecture portion of the courses will be delivered online, facilitated by your instructor. This program could be what you need to begin a rewarding career!

## Program Courses

Course #	Course Title	Credits
458-341	Truck Driving 1	4
458-342	Truck Driving 2	3
458-343	Truck Driving 3	3
458-344	Truck Driving 4	2

# Electrical Maintenance

30-462-1 | 10 Credits | Less Than One Year | Technical Diploma

This program will allow you to develop skills in electrical related maintenance concepts that will help you be successful at an entry level in an organization. Students will work with programming logic controllers, industrial electricity principles, automated equipment and entry-level computer applications.

## Program Courses

Course #	Course Title	Credits
462-118	Industrial Electric Principles	3
462-121	IOT Automated Manufacturing	4
462-123	PLC Manufacturing Applications	3

# Mechanical Maintenance

30-462-2 | 10 Credits | Less Than One Year | Technical Diploma

This program will allow you to develop skills in mechanical related maintenance concepts that will help you to be successful at an entry level in an organization. Students will work with hydraulics, pneumatics, mechanical gears and linkages, print reading and entry-level computer applications.

## Program Courses

Course #	Course Title	Credits
419-116	Basic Hydraulics	2
419-117	Basic Pneumatics	2
462-111	Mechanical Concepts	2
462-119	Industrial Mechanical Skills	2
625-180	Manufacturing Skills Standards	2

# Aesthetician

30-502-3 | 21 Credits | Less Than One Year | Technical Diploma

Aestheticians are skin care specialists who perform a variety of facial and body treatments to help their clients maintain the health and appearance of their skin. Students will learn to perform basic facials, spa body treatments, waxing, hair removal and other specialized skin treatments. Students will prepare for the licensure exam administered by Wisconsin Department of Safety and Professional Services.

## Program Courses

Course #	Course Title	Credits
502-103	Aesthetic Health & Safety	2
502-104	Intro to Facial Theory & Skill	2
502-105	Anatomy & Phys Aesthetics	2
502-106	Intro to Aest Skills & Product	4
502-107	Aesthetic Guest Service & Prac	3
502-108	Gen Aesth Thrp & Chem Trtmnts	2
502-109	Aesth Assessment & Intervntion	2
502-110	Aesthetic Microdermabrasion	2
502-111	Beginner Practical Client Serv	2

# Nail Technician

30-502-4 | 9 Credits | Less Than One Year | Technical Diploma

Chippewa Valley Technical College's Nail Technician program prepares students for a field in nails by teaching methods that apply salon sciences with artistic talents for creative nail results. Students will gain a complete understanding of salon operations - from marketing and retailing to communication skills. This career provides excellent opportunities for full-time and part-time employment and attracts creative people of all ages. The income potential is unlimited.

## Program Courses

Course #	Course Title	Credits
502-320	Nail Technology	2
502-331	Advanced Nail Technology	2
502-332	Nail Salon Service	4
806-323	Salon Science 1	1

# Criminal Justice-Law Enforcement 720 Academy

30-504-2 | 22 Credits | Less Than One Year | Technical Diploma

The Criminal Justice-Law Enforcement 720 Academy is designed for potential law enforcement officers who need or want to meet Wisconsin certification requirements. You may be considered for admission to the Academy if you meet one of the following criteria: • Are a full-time or part-time law enforcement officer • Have graduated from CVTC's Criminal Justice Associate Degree program • Have earned at least 60 college credits or the equivalent

The 720-hour training program is competency-based and meets the criteria set by the Wisconsin Law Enforcement Standards Board (LESB). Training is delivered through lecture, multimedia presentations, interactive group discussion, hands-on instruction, and field exercises. All classes are conducted at CVTC's Criminal Justice Division in Eau Claire, Wisconsin.

Full-time students are expected to participate from 8 a.m. to 5 p.m. Monday through Friday and be available for scheduled evening and weekend instruction designed to simulate actual conditions. Some training will take place outdoors. This is a challenging program designed to help you take your law enforcement career to the next level.

## Program Courses

Course #	Course Title	Credits
504-500	Overview of Patrol Response	2
504-501	Physical Fitness	1
504-502	Application of Investigations	1
504-503	Overview of Criminal Justice	1
504-504	Principles of Emerg Vehicles	2
504-505	Sensitive Crimes	2
504-506	Overview of Investigations	2
504-507	Application Traffic Response	3
504-508	Principles of Investigations	1
504-509	Principles of Tactics	5
504-510	Overview of Tactics	1
504-511	Scenario Assessment	1

# Dental Assistant

30-508-2 | 16 Credits | Less Than One Year | Technical Diploma

Self-directed, motivated, able to anticipate the needs of others, detail oriented, good dexterity, able to work as part of a team, interested in helping people: if that sounds like you, the Dental Assistant program could be what you're looking for. This program is a combination of theory and hands-on experiences.

You'll gain the knowledge and skills you'll need to:

- Assist the dentist in dental procedures
- Sterilize and prepare instruments
- Take impressions; prepare models and lab work
- Assist with general office procedures
- Learn radiographic (xray) techniques using digital sensors as well as analog or traditional film-based xrays
- Maintain and update dental charts

After two years' on-the-job experience, you will be eligible to apply for the certification examination of the Dental Assistant National Board.

## Program Courses

Course #	Course Title	Credits
508-101	Dental Health Safety	1
508-103	Dental Radiography	2
508-113	Dental Materials	2
508-302	Dental Chairside	5
508-304	Dental & General Anatomy	2
508-306	Dental Assistant Clinical	3
508-307	Dental Assistant Professional	1

# Clinical Assistant

30-509-4 | 17 Credits | Less Than One Year | Technical Diploma

Clinical Assistants are healthcare specialists who perform minor diagnostic tests and procedures, promote patient safety, mediate between patients and providers, guide patients through a clinic's facilities and procedures, and prepare stock examination rooms. The program will focus on patient care skills, medical terminology, anatomy, disease, medical laboratory basics, administrative basics, law, and ethics. Graduates could take the Certified Clinical Medical Assistant (CCMA) exam.

## Program Courses

Course #	Course Title	Credits
501-308	Pharmacology for Allied Health	2
509-302	Human Body in Health & Disease	3
509-303	Medical Asst Lab Procedures 1	2
509-304	Medical Asst Clin Procedures 1	4
509-306	Med Asst Clin Procedures 2	3
509-309	Medical Law, Ethics & Profess	2
509-320	Clinical Assistant Practicum	1

# Lab Assistant

30-513-4 | 3 Credits | Less Than One Year | Technical Diploma

The Lab Assistant Technical Diploma introduces students to the fundamental principles and procedures performed in the laboratory, utilizing medical terminology and basic laboratory equipment. Coursework includes safety and infection control procedures and performance of simple laboratory tests including routine venipuncture, capillary puncture, and special collection procedures.

## Program Courses

Course #	Course Title	Credits
513-110	Basic Lab Skills	1
513-111	Phlebotomy	2

# Patient Service Specialist

30-509-2 | 11 Credits | Less Than One Year | Technical Diploma

The Patient Services Specialist technical diploma prepares students to perform medical support duties using specific knowledge of medical terminology, customer service, and technology within a hospital, clinic, or laboratory. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence as well as schedule and confirm patient diagnostic appointments, surgeries, or medical consultations.

## Program Courses

Course #	Course Title	Credits
501-107	Digital Literacy Healthcare	2
509-301	Medical Asst Admin Procedures	2
509-302	Human Body in Health & Disease	3
509-307	Med Office Insurance & Finance	2
509-309	Medical Law, Ethics & Profess	2

# Autism Assistant

30-522-3 | 18 Credits | Less Than One Year | Technical Diploma

The Autism Assistant technical diploma will train students to learn characteristics, strategies and techniques to promote educational and social success in individuals diagnosed with Autism Spectrum Disorder (ASD). This certificate is designed for educators and paraprofessionals interested in learning how to support individuals with ASD in classroom settings.

## Program Courses

Course #	Course Title	Credits
522-105	EDU: Behavior Management	3
522-112	EDU: Equity in Education	3
522-134	EDU: Overview of Autism	3
522-129	EDU: Practicum 1	3
522-135	EDU: Autism in the Classroom	3
522-138	Communication and Autism	3

# Emergency Medical Technician

30-531-3 | 5 Credits | Less Than One Year | Technical Diploma

These courses prepares students for all aspects of emergency medical care, both medical and trauma situations, sanctioned by the Wisconsin Division of Health, at the basic level. Following the most current Wisconsin Revision of the National Standard Curriculum, these courses include didactic and practical skill information in the following areas: legal aspects, anatomy and physiology, patient assessment, critical thinking skills, airway adjuncts, fractures and dislocations, spinal injuries, soft tissue wounds, pharmacology, stroke, cardiac, diabetic, respiratory, altered mental status, pediatric, geriatric, ambulance operations, and triage.

A student should be prepared to obtain 100 percent proficiency in all areas through punctuality, attendance, completion of assignments, class participation, and full cooperation with the instructor.

## Program Courses

Course #	Course Title	Credits
531-312	EMT 1	2
531-313	EMT 2	3

# Advanced EMT

30-531-6 | 4 Credits | Less Than One Year | Technical Diploma

Chippewa Valley Technical College's Advanced EMT program provides the knowledge and skills needed to work competently as an entry-level paramedic. Students enter a joint core course cohort with Paramedic Technician degree students. Graduates earn a technical diploma upon successful completion of this program. This program consists of classroom lectures, practical skills lab, laboratory simulations, and hospital and pre-hospital clinical experiences.

## Program Courses

Course #	Course Title	Credits
531-303	Advanced EMT	4

# Sterile Processing Technician

30-534-2 | 6 Credits | Less Than One Year | Technical Diploma

The Sterile Processing Technician program could be for you if you are:

- Interested in a career in the healthcare field
- Seeking a short-term educational program
- Able to work as part of a team
- Well-organized, with an eye for detail
- Able to work accurately
- Have a high degree of manual dexterity

As a Sterile Processing Technician, you would:

- Maintain an uninterrupted supply of instrumentation and supplies used in patient care
- Support patient care services and be especially involved in the prevention of infection
- Clean, sterilize and process patient products, including surgical instruments, power equipment, robotic instruments, fiber optic scopes, cameras, and other specialty instrumentation
- Maintain records associated with supply orders, charges, and inventory

Your program will include Sterile Processing technician skill courses, and clinical assignments. Graduates receive a technical diploma and are eligible to write the certification exam offered by the International Association of Sterile Processing Materials Management organization.

After successfully completing your exam, you will be awarded the title of Certified Registered Sterile Processing Technician. With an additional 200 hours working with instrumentation, you will be eligible to write the Instrument Specialist exam. Upon successful completion of this exam you will earn the title of Certified Instrument Specialist through IAHCSSMM. Sterile Processing is an emerging occupation and will expand as health care becomes more specialized. This could be the program you need for a rewarding career!

## Program Courses

Course #	Course Title	Credits
509-309	Medical Law, Ethics & Profess	2
534-300	Sterile Proc Tech Fundamentals	3
534-302	Sterile Process Tech Clinical	1

# Nursing Assistant

30-543-1 | 2 Credits | Less Than One Year | Technical Diploma

If you're seeking a comparatively short educational program that leads to a career in the health care field, consider the Nursing Assistant program. This program may be a good match for you if you:

- Are kind and compassionate
- Have good communication skills
- Can work as a team member
- Are efficient, accurate, and detail oriented
- Can maintain high professional standards

As a nursing assistant, you would provide care to a variety of patients to help them live as comfortably and independently as possible. This program will help you learn basic nursing skills.

- Collect data
- Safeguard patients
- Assist in all activities of daily living
- Communicate with patients

The course requires 120 hours of lecture, laboratory, and clinical work. You'll need to have access to a computer with an Internet hookup. This could be in your home, at a nearby library, at one of the CVTC branch campuses, or another location that is convenient for you. You'll also work in a laboratory setting on simulated laboratory experiences.

During the final portion of your program, you'll work in nursing homes or hospitals and gain actual experience with residents or patients. When you successfully complete the program, you will be eligible to apply for the National Nurse Aide Assessment Program (NNAAP) Examination. You will need to be certified before you can work in this career area. The demand for certified nursing assistants is expected to increase, especially in nursing homes, community-based residential facilities, and through home health care organizations.

## Program Courses

Course #	Course Title	Credits
543-300	Nursing Assistant	2

# Design and Drafting Technology

30-606-3 | 16 Credits | Less Than One Year | Technical Diploma

Industry-standard AutoCAD and SolidWorks software are used to develop detailed design drawings and specifications for mechanical equipment, dies, and tools using CAD equipment. Print reading visualization, sketching, and design document structuring are addressed. Two- and three-dimensional drawings, isometric drawings, and assemblies will be created and a student portfolio developed. Geometric dimensioning and tolerancing principles are applied to mechanical part designs using current ASME Y 14.5 standards.

## Program Courses

Course #	Course Title	Credits
606-103	Mechanical Design Concepts	2
606-130	Solid Modeling I	3
606-142	Additive Manufacturing	1
606-159	CAD, 2D	2
606-104	Geometric Dimen & Tolerancing	1
606-136	Solid Modeling 2	2
606-137	Mfg. Materials Processes	2
606-167	Advanced CAD	2
623-117	Intro to Precision Measurement	1

# Manufacturing Quality

30-623-4 | 16 Credits | Less Than One Year | Technical Diploma

This embedded technical diploma provides technical skills in quality fundamentals, lean fundamentals, print specifications, quality standards, and coordinate measurement inspection tools. It provides developmental knowledge for a manufacturing technician to evaluate hardware documentation, perform laboratory procedures, inspect products, measure process performance, record data, and prepare formal reports. The learner will apply common quality and lean tools, examine tool applications, and be able to participate in quality improvement projects.

## Program Courses

Course #	Course Title	Credits
606-104	Geometric Dimen & Tolerancing	1
623-117	Intro to Precision Measurement	1
623-119	Advanced Inspection Techniques	1
623-130	Lean Fundamentals	2
625-110	Mfg & Quality Assurance	3
804-115	College Technical Math 1	5
804-189	Introductory Statistics	3

# Landscape, Plant & Turf Technician

31-001-1 | 28 Credits | One Year | Technical Diploma

The Landscape, Plant & Turf Technician student will be prepared for a job in the industry by completing one year of course work. The focus will be on landscaping and turf maintenance. An understanding of soils, insects, diseases and weeds will be explored. Students will be able to have many experiences with a variety of hands on learning activities. The Landscape, Plant & Turf Technician includes the Wisconsin Commercial Pesticide Applicator Certification.

## Program Courses

Course #	Course Title	Credits
001-116	Landscape Plants	2
001-120	Horticulture Soils	3
001-121	Intro to Horticulture	2
001-122	Horticulture Lab	1
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
001-103	Turf Management	2
001-108	Bus Apps for Green Industry	2
001-110	Integrated Plant/Pest Mgmt	2
001-113	Pesticide & Fertilizer App	3
001-125	Horticulture Equipmnt & Safety	2
801-196	Oral/Interpersonal Comm	3

# Livestock Technician

31-091-5 | 31 Credits | One Year | Technical Diploma

In CVTC's Livestock Technician program, students learn to test for feeds and feeding methods, animal husbandry, management software programs, breeding and genetics, and what nourishes livestock efficiently and economically. Students gain a thorough understanding of science and husbandry through participation in farm learning labs on 30 CVTC cooperating lab farms. Hands on and classroom instruction provides graduates with technical, management, and economic training that prepares them for successful herd management.

## Program Courses

Course #	Course Title	Credits
006-105	Industry Skills	2
091-110	Livestock Evaluation & Judging	2
091-112	Livestock Modernization	2
091-150	Farm Data and Analysis	2
091-181	Intro to Animal Science	2
091-182	Animal Science Lab	1
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
091-120	Livestock Housing	2
091-122	Animal Breeding & Genetics	2
091-184	Herd Health	3
091-188	Feed Analysis	2
801-196	Oral/Interpersonal Comm	3
802-103	Spanish for the Workplace	2

# Agronomy Technician

31-093-3 | 35 Credits | One Year | Technical Diploma

The Agronomy Technical Diploma is a one-year degree designed to get you in and out of school to put you on the job with the necessary skills, quicker! In the Agronomy Technician Program, you will learn about: soil health, plant science, row crop management, agriculture equipment, agriculture technologies, and nutrient management planning. While in the program, you will walk away with the following certificates: Wisconsin Commercial Pesticide Applicator License, Wisconsin Seed Treatment Certification, and Commercial Driver's License.

## Program Courses

Course #	Course Title	Credits
093-110	Introduction to Agronomy	2
093-112	Precision Farming	2
093-114	Plant Protection Products	2
093-116	Introductory Soils	3
093-118	Agriculture Equipment	2
801-136	English Composition 1	3
804-134	Mathematical Reasoning	3
091-188	Feed Analysis	2
093-122	Nutrient Management	2
093-124	Pest Management	1
093-126	Precision Field Applications 1	1
093-128	Plant Science	2
093-129	Plant Science Lab	1
458-307	CDL License Training-Online	2
458-308	CDL License Training-Pre-Trip	1
458-309	CDL License Training - Lab	1
801-196	Oral/Interpersonal Comm	3
093-132	Crop Scouting	2

# Accounting Assistant

31-101-1 | 30 Credits | One Year | Technical Diploma

Do you enjoy working with numbers and supporting a team? As an accounting assistant, you will maintain timely and accurate records of daily business transactions. Examples include: accounts receivable, accounts payable, payroll, inventory management, and other business records. Learn to assist an accountant in preparing important financial statements. You will learn how to compile and report financial data. Students will gain experience with QuickBooks and spreadsheet applications related to business. You'll also learn and practice written, oral, and interpersonal communication skills.

## Program Courses

Course #	Course Title	Credits
101-111	Accounting I	4
101-149	Intro to QuickBooks	2
804-134	Mathematical Reasoning	3
809-198	Intro to Psychology	3
801-136	English Composition 1	3
101-106	Accounting Spreadsheets	2
101-113	Accounting II	4
101-121	Payroll Accounting	3
102-160	Business Law	3
801-196	Oral/Interpersonal Comm	3

# Sales and Marketing Specialist

31-104-10 | 30 Credits | One Year | Technical Diploma

The one-year Sales and Marketing Specialist ETD consists of students' learning basic sales and marketing skills to compete in today's job market. Students get a strong start with knowledge of the key components of marketing, including professional sales, effective writing and communication skills, and learning the framework of customer service. Additionally, they will learn to use customer relations software and understand the fundamentals of advertising and research.

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
104-102	Marketing Principles	3
104-110	Customer Relationship Mgmt	3
104-140	Professional Sales	3
106-204	Foundations of Bus Writing	3
104-105	Marketing Research	3
104-119	Digital Marketing Strategy	3
104-125	Promotions	3
104-191	Service Marketing	3
801-198	Speech	3

# Office Assistant

31-106-1 | 29 Credits | One Year | Technical Diploma

The Office Assistant program prepares students to perform a variety of administrative tasks in today's rapidly changing office. Students learn to integrate computer, human relations, and communication skills working individually and in a business team environment.

You will develop or enhance the following professional skills in the Office Assistant program. The ability to:

- Keyboard quickly and accurately, using a variety of computer software packages
- Format and produce business documents
- Exhibit excellent customer relations skills in person and over the telephone
- Use accurate filing and records management procedures
- Understand the basics of email and the Internet
- Use spelling, punctuation, and grammar correctly
- Display a professional attitude, appearance, and behavior
- Show your organizational skills
- Communicate effectively in oral and written communication

Many qualities and traits are essential to a successful office assistant. Some characteristics you'll find emphasized in this program are:

- honesty and integrity
- flexibility, a positive attitude, confidence, and poise
- communication skills-both written and oral
- organizational and time management skills
- a professional image

An internship in a local business office is included in the second semester of this program. After successful completion of the Office Assistant technical diploma program, the student may apply these credits to the Administrative Professional associate degree program and enter the second year of the program.

## Program Courses

Course #	Course Title	Credits
101-105	Accounting, Intro to	3
103-102	Microsoft Office Suite	2
106-201	Innovative Customer Service	3
106-202	Intro to the Smart Office	3
106-203	AI Foundations for Business	3
101-149	Intro to QuickBooks	2
102-109	Business Analytics	3
106-135	Bus Support Prof. Internship 1	1
106-204	Foundations of Bus Writing	3
106-205	Adv Software Applications	3
809-196	Intro to Sociology	3

# Entrepreneurship

31-145-2 | 30 Credits | One Year | Technical Diploma

The entrepreneurship diploma program gives students the fundamentals to start and operate their own businesses. Coursework includes developing and evaluating a business idea, preparing a business plan, managing finances, analyzing legal issues, evaluating successful entrepreneurial marketing strategies, developing entrepreneurial communication skills, and more. Students will be encouraged to develop valuable mentor relationships with local seasoned entrepreneurs.

## Program Courses

Course #	Course Title	Credits
101-105	Accounting, Intro to	3
101-149	Intro to QuickBooks	2
102-130	Innovative Business Mindset	3
104-102	Marketing Principles	3
145-103	Entrepreneurial Ideas	3
145-104	Entrepreneurial Communication	2
101-172	Business Finance	3
102-160	Business Law	3
145-106	Entrepreneurial Management	3
145-108	Entrepreneurial Marketing	2
145-109	Entrepreneurial Capstone	3

# IT - Desktop Support Technician

31-154-1 | 26 Credits | One Year | Technical Diploma

The IT - Desktop Support Technical Diploma prepares you to be the first line technical support to resolve software, hardware, and network problems. You will develop your technical skills to provide great customer service to internal and external customers. These technical skills include hardware and software installation, configuration, and troubleshooting, basic network concepts, supporting new technologies, repairing workstations and performing upgrades.

## Program Courses

Course #	Course Title	Credits
150-102	IT - Fundamentals	2
150-111	IT Software for Networking	2
150-131	Technical Support Fundamentals	1
150-133	Bits/Bytes of Computer Network	1
150-165	Microsoft Server 1	2
154-110	Research & Troubleshooting	2
154-111	Endpoint Management	3
150-135	Become an OS Power User	1
150-137	System Adm/IT Infrastructure	1
150-139	IT Security: Defense Digital	1
150-143	IT Essentials	3
150-150	CCNA 1: Intro to Networks	3
154-112	IT Service Management	2
154-113	Documentation	1
154-114	Professional Skills	1

# Child Care Services

31-307-1 | 30 Credits | One Year | Technical Diploma

Do you want to make a difference in the lives of children? If that's your goal, the Child Care Services program may be a good match for you. As a graduate of this program, you'll care for children while their parents are at work or unavailable for other reasons. You'll attend to the children's health, safety, and nutrition, and have a role in their physical, emotional, intellectual, and social growth. The Child Care Services Program offers a strong framework of child development, nutrition, creative activities, and practical experience with young children in area child care facilities. As a final project, you'll help produce a puppet show enjoyed by hundreds of children.

You may enroll in this program full- or part-time. If you have related work experience, you could qualify for credit for prior learning. If you decide to continue your education, the credits you earn in this program apply toward the two-year Early Childhood Education associate degree program, and selected credits transfer to some universities.

The ever-expanding field of child care demands higher standards and a larger, better-trained work force to meet the needs of families. Career opportunities vary. You could serve as the lead teacher in a group center, provide family child care in a home setting, oversee child care on cruise ships, or work as a nanny. Many child care providers operate their own successful businesses. You have options!

## Program Courses

Course #	Course Title	Credits
307-148	ECE: Foundations of ECE	3
307-151	ECE: Infant & Toddler Dev	3
307-160	ECE: Field Experience 1	3
307-167	ECE: Hlth Safety & Nutrition	3
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-198	Speech	3
307-170	ECE: Field Experience 2	3
307-179	ECE: Child Development	3
307-187	ECE: Children w Diff Abilities	3
307-188	ECE: Guiding Child Behavior	3
307-195	ECE: Family & Community Rel	3

# Culinary Production Specialist

31-316-2 | 28 Credits | One Year | Technical Diploma

The Culinary Production Specialist program will help you develop the skills necessary to pursue a career in the food-service industry within restaurants, bakeries, catering services, delis, hotels, resorts, healthcare facilities and schools. Statistics show that the food service industry is America's #1 retail employer. In Wisconsin and throughout the nation, there is an increasing need for well-trained food service personnel for restaurants, catering enterprises, healthcare facilities and other institutional food service.

## Program Courses

Course #	Course Title	Credits
316-101	Food Theory	3
316-102	Intro to Culinary Arts	5
316-105	Food Safety & Sanitation	2
804-134	Mathematical Reasoning	3
316-108	Service Management	2
316-111	Advanced Culinary Arts	5
316-143	Purchasing & Cost Control	1
316-145	Menu Design & Development	1
801-196	Oral/Interpersonal Comm	3
809-198	Intro to Psychology	3

# Air Conditioning, Heating & Refrigeration Technician

31-401-1 | 33 Credits | One Year | Technical Diploma

If this is how you would describe yourself, you could be a good candidate for the Air Conditioning, Heating & Refrigeration Technician program: • Enjoy solving problems • Good mechanical aptitude • Can work independently and as a member of a team • Like working with tools • Interested in latest energy-saving technologies • Detail-oriented • Physically fit

As a graduate of this program, you will be responsible for installation, service and maintenance of refrigeration, air conditioning, and heating equipment as well as geothermal, solar, and other renewable energy equipment. The program prepares you to take the Environmental Protection Agency (EPA) Certification Exam for safe handling of refrigerants. The Industry Competency Exam (ICE) sponsored by the Air Conditioning and Refrigeration Institute for HVAC/R technicians is a requirement for all students. Your coursework the first semester covers the fundamentals: • Gas, oil, and electric furnaces • Basic refrigeration and air conditioning systems • HVACR technical problem solving • Related electricity

Your second semester coursework will build on what you've learned, with emphasis on geothermal and solar systems, and HVAC/R maintenance, service, and installation. As part of your program, you'll be provided with hands-on technical installation and service situations to complete. Nationally there is a shortage of HVAC/R installation, service, and maintenance technicians. This is a career area full of opportunity!

## Program Courses

Course #	Course Title	Credits
601-105	Refrigeration Principles	2
601-106	Refrigeration Theory	1
601-107	Heating Theory	1
601-108	Prncples of Gas Heat & Airfl	2
601-109	Prin of Oil, Elec & Hydron Htg	1
601-116	Principles of Air Conditioning	2
601-123	HVACR Industry Skills 1	1
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2
601-118	Sustainability for HVAC	1
601-121	HVAC/R Service & Applications	3
601-122	HVACR Industry Skills 2	1
601-130	Sheet Metal Layout	1
601-144	Solar/Wind Applications	2
601-145	Geothermal Applications	1
601-147	Schematic Wiring-Trblshtng	1
601-151	Technical Problems-HVAC	2
601-153	Basic Home Automation	1
601-163	Residential HVAC Load Calcs	2
801-196	Oral/Interpersonal Comm	3

# Automotive Maintenance Technician

31-404-3 | 29 Credits | One Year | Technical Diploma

If you enjoy working on vehicles and want an educational program you can complete in just one year, consider the Automotive Maintenance Technician program. This program can help you gain the entry-level skills you need for a career servicing and repairing vehicles. You'll receive training in the Automotive Service Excellence (ASE) areas identified as automotive industry standards: • Brakes • Suspension and steering • Engine performance • Electrical/electronic systems

If you complete this program and decide you would like more training, you could apply what you've learned and enter CVTC's two-year Automotive Technician program. This is a time of change and challenge in the automotive industry, with demand for vehicles that deliver better mileage, higher safety ratings, and increased performance and style. The industry needs trained technicians. Most employers consider completing a vocational training program as the best preparation for entry-level jobs. CVTC's program is a combination of classroom instruction and hands-on practice to give you the background you need to succeed.

## Program Courses

Course #	Course Title	Credits
404-335	Automotive Fundamentals	1
404-336	Basic Vehicle Maintenance	3
404-337	Automotive Electricity 1	2
404-339	Automotive Brake Systems	4
404-351	Auto Engine Performance 1	3
804-360	Math for Technical Trades	2
404-338	Automotive Electricity 2	3
404-350	Auto Steering & Suspension Sys	4
404-352	Auto Engine Performance 2	3
404-355	Automotive Computer Systems	2
442-313	Welding-Automotive Technician	1
801-357	Applied Written/Job Seek Comm	1

# Auto Collision Repair & Refinishing Technician

31-405-1 | 35 Credits | One Year | Technical Diploma

If you've ever wanted to know how to turn a damaged vehicle into something that looks like new, this could be the program you're looking for. Through classroom instruction and work on customers' vehicles, you'll learn the skills you'll need for this career area: • Estimating • Non-structural repair • Plastic repair • Weld-on panel replacements • Vehicle refinishing • Frame and structural repair • Paint technology • Mechanical systems repair

In all course activities, you'll find an emphasis on safety. The latest, most advanced equipment and repair techniques are used. Your classes will incorporate I-CAR curriculum, and you may be I-CAR certified when you successfully complete the program. Employment opportunities are best for people with formal training in automotive body repair and refinishing.

The number of vehicles on the road is increasing, leading to a need for people to repair damaged vehicles. This program could be the training you need to prepare for a rewarding career! This program is certified by the National Institute for Automotive Services Excellence in the areas of painting and refinishing, nonstructural analysis and damage repair, structural analysis and damage repair, and mechanical and electrical components.

## Program Courses

Course #	Course Title	Credits
405-302	Intro to Collision Fundamental	2
405-304	Structural Fundamentals	1
405-306	Non-Structural Fundamentals	4
405-308	Refinish/Painting Fundamentals	4
442-311	Transportation Welding	1
442-312	Welding for Auto Collision	1
804-360	Math for Technical Trades	2
405-310	Collision Internship	1
405-312	Intermediate Collision	1
405-314	Structural Applications	1
405-316	Non-Structural Applications	5
405-318	Refinish/Painting Applications	5
801-357	Applied Written/Job Seek Comm	1
405-320	Advanced Collision	1
405-322	Collision Capstone	5

# Diesel Mechanic

31-412-5 | 32 Credits | One Year | Technical Diploma

The Diesel Mechanic technical diploma is a one-year program designed to prepare an entry-level diesel technician. The 30-credit program covers over-the-road, off-road and stationary applications emphasizing the fundamentals and repair of diesel engines and basic diesel vehicle systems. These systems include brakes, steering and suspension, heating, cooling and electrical systems. Diesel Mechanic courses make up the first year of the Diesel Technical Diploma.

## Program Courses

Course #	Course Title	Credits
412-305	Chassis I	5
412-306	Chassis II	5
412-345	Basic DC Electricity	2
412-360	Diesel Fundamentals	1
442-316	Related Welding for Diesel	2
801-357	Applied Written/Job Seek Comm	1
412-307	Chassis Electrical	5
412-308	Mechanical Gear Trains	4
412-309	Heavy Duty HVAC	3
804-360	Math for Technical Trades	2
809-351	Occupational Relations	2

# Electrical Power Distribution

31-413-2 | 35 Credits | One Year | Technical Diploma

If you enjoy working outdoors and like solving problems with both your head and your hands, the Electrical Power Distribution program might be a good match for you. Graduates of this program are helping to keep our country's electrical distribution network in good working order and expanding the network to provide better service.

The program includes instruction in the fundamentals of electrical theory. Through classroom and outdoor lab activities you'll learn the skills you need to succeed in this career area: • Operate line equipment • Climb distribution and transmission structures • Build and maintain overhead and underground power lines • Install transformers, capacitors, and KWH meters • Tie rope knots • Perform hotline maintenance

You'll learn how to use protective equipment such as fuses, circuit breakers, and lightning arrestors. You'll operate hydraulic equipment such as aerial lift trucks, digger/derrick trucks, and trencher/backhoes. You'll receive training in performing first aid, CPR, and AED (Automatic External Defibrillator). And since you'll need a commercial driver's license to haul equipment, a three-credit unrestricted Class "A" CDL course is included in the program.

To succeed, you'll need good reading and math skills. As a student, you'll be subject to random controlled substance and alcohol testing. As an employee, you'll need a good driving record. It's a rewarding, challenging career area. This could be the educational program you're looking for!

## Program Courses

Course #	Course Title	Credits
413-310	Basic EPD Safety	2
413-311	Intro to Pole Climbing	2
413-312	Basic EPD Electricity	1
413-313	URD Installation & Termination	2
804-360	Math for Technical Trades	2
413-320	Intermediate EPD Electricity	4
413-321	OH Line Design & Construction	5
458-307	CDL License Training-Online	2
458-308	CDL License Training-Pre-Trip	1
458-309	CDL License Training - Lab	1
801-357	Applied Written/Job Seek Comm	1
809-351	Occupational Relations	2
413-330	Advanced EPD Safety	2
413-331	Power Line Apparatus	2
413-332	Advanced EPD Electricity	2
413-333	Transmission Line Construction	2
806-342	Science for Technical Trades	2

# Machine Tool Operator

31-420-8 | 31 Credits | One Year | Technical Diploma

The Machine Tooling Operation Program (1 year) provides training for entry-level employment in a machining environment. Students will be exposed to manual lathes & mills, Computer Numerical Control (CNC) machines, Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) workstations, and Coordinate Measuring Machines (CMM). Students will gain the foundational knowledge and skills necessary to operate a variety of machine tools, along with other support equipment, to be able to produce parts to meet print specifications.

## Program Courses

Course #	Course Title	Credits
420-300	Machine Shop Theory	1
420-321	Manual Turning Processes	5
420-322	Manual Milling Processes	5
420-332	CNC Equations 1	1
420-373	Precision Measurement	1
421-385	MT Blueprint Reading and GD&T	2
420-310	CNC Programming Theory	1
420-325	Basic CNC Mill Programming	5
420-330	Basic CNC Lathe Programming	5
420-333	CNC Equations 2	1
420-341	Materials for Machinists	2
420-380	2-D CAM	2

# Welding

31-442-1 | 33 Credits | One Year | Technical Diploma

If you enjoy problem solving as well as working with your hands, the Welding program could be for you. It combines theory, demonstrations, and hands-on experiences to prepare you to take a welding project from blueprints through final inspection.

The Welding program offers training in basic welding techniques you'll rely on in your career: • Oxyacetylene welding and cutting • Shielded metal arc welding (SMAW, stick welding) • Gas metal arc welding (GMAW, MIG, wire-feed) • Flux-cored arc welding (FCAW) • Gas tungsten arc welding (GTAW, TIG)

Your training will include advanced welding techniques and credentials such as: • Robotic welding - set-up, programming, operation, and fixturing for automatic welding • CNC plasma cutting - using a computer program to control the cutting on an automated plasma cutter • CNC equipment processes • Welding certification • OSHA 10 certification

You'll also learn plasma arc cutting, blueprint reading, layout and fabrication techniques, and metallurgy concepts. Your job prospects are best when you're trained in the latest technologies - and that's what CVTC's Welding program has to offer you: instruction and skill development to meet the demands of today's workplace. This could be the career area you've been looking for!

## Program Courses

Course #	Course Title	Credits
442-303	Metals Technology	1
442-307	Welding Print Reading	2
442-310	Welding Safety and Orientation	1
442-325	Shielded Metal Arc Welding	3
442-380	Industrial Skills Welders	2
457-300	Fabrication	3
442-362	Gas Metal Arc Welding	4
442-300	Adv Shielded Metal Arc Welding	3
442-327	Welding Theory	2
442-360	Robotic Welding	2
442-363	Adv Wire-Feed Welding	4
442-364	Gas Tungsten Arc Welding	4
457-305	CNC Fabrication	2

# Motorcycle, Marine & Outdoor Power Products

31-461-2 | 37 Credits | One Year | Technical Diploma

If you enjoy figuring out how things work, repairing engines, and associating with late-breaking technology, you are a good candidate for the Motorcycle, Marine and Outdoor Power Products Technician program. You'll learn how to efficiently diagnose mechanical, fuel, and electrical problems and make repairs quickly.

In addition to classroom activities, you'll learn through hands-on practice in a lab designed to be as much like real-life experience as possible. Throughout the semester, you'll develop the broad skill base employers are looking for through working on inboard and outboard engines as well as engines that power motorcycles, ATVs, snowmobiles, and other recreational vehicles; lawn mowers, chain saws, and more. Your program includes experience with E-TEC, the technology behind today's energy-efficient, low-emissions two-stroke engines. This new engineering has produced two-stroke engines that meet Environmental Protection Agency (EPA) standards, and the entire industry will be affected. Your ability to diagnose and repair boat motors, snowmobiles, and other recreational vehicles with E-TEC engineering can give you a competitive edge in the marketplace.

There are few training centers nationwide with the facilities and capabilities of CVTC's Motorcycle, Marine and Outdoor Products Technician program. With just one year of training, you could be well on your way to a career as a motorcycle, marine and outdoor power products technician. This could be the program for you!

## Program Courses

Course #	Course Title	Credits
461-310	Basic Engines/Systems,Intro to	5
461-315	Engine Theory 1A	1
461-316	Engine Theory 1B	1
461-317	Electricity for Powersports 1	1
461-318	Electricity for Powersports 2	1
461-320	Snowmobiles & ATVs	5
461-330	Marine Outboards	5
804-360	Math for Technical Trades	2
442-317	Related Welding, Marine	2
461-319	Transmission and Final Drives	1
461-340	Marine Inboards	5
461-360	Motorcycles	5
801-357	Applied Written/Job Seek Comm	1
809-351	Occupational Relations	2

# Mechatronics Technician

31-462-2 | 37 Credits | One Year | Technical Diploma

If you have an interest in working with technology, enjoy troubleshooting systems, and take pride in craftsmanship, the Mechatronics Technician program could be a good match for you. This program will prepare you to install, maintain, operate, diagnose, and repair automated equipment used in manufacturing industries.

Your career could take you to facilities with automated systems that create the products we use every day. In just 40 weeks, the Mechatronics Technician program provides you with the skills you need in essential career areas: • Mechanics • Electrical • Pneumatics • Troubleshooting • Welding • Hydraulics • Programmable Logic Controllers (PLCs) • Maintenance

As a multi-skilled industrial mechanic, you will become proficient in areas that greatly enhance your employment opportunities: • Laser alignment • Thermal and vibration analysis • Mechanical equipment installation, disassembly, and assembly • Pneumatics and hydraulics • Conveyance systems • Machine tool • Electrical troubleshooting • Building System Maintenance • Welding • Preventative maintenance • Automated machine troubleshooting • Programmable Logic Controllers (PLCs)

According to the Department of Labor, graduates with broad skills in machine repair and maintenance should have favorable job prospects. Some employers have reported difficulty in recruiting workers with the necessary skills. This could be the career area and educational program you've been searching for!

## Program Courses

Course #	Course Title	Credits
419-116	Basic Hydraulics	2
419-117	Basic Pneumatics	2
442-120	Related Welding-Indust Mech	2
462-111	Mechanical Concepts	2
462-115	Industrial PC Network Concepts	2
462-119	Industrial Mechanical Skills	2
462-130	Mfg Prints & Networks	1
625-180	Manufacturing Skills Standards	2
462-118	Industrial Electric Principles	3
462-120	Centrifugal Pumps & Alignment	3
462-121	IOT Automated Manufacturing	4
462-123	PLC Manufacturing Applications	3
462-126	Mechanical Alignment & Bearing	2
419-102	Hydraulic System Operations	2
419-118	Pneumatic System Operations	2
462-122	Prev and Periodic Maintenance	1
462-132	Mach Trbleshting & Repair Adv	2

# Gas Utility Construction & Service

31-469-2 | 33 Credits | One Year | Technical Diploma

Highly skilled professionals in the utilities industry are needed to install, maintain, and operate natural and propane gas distribution systems used to supply residential, commercial, and industrial customers. Typical careers in this field include gas distribution worker, gas service person, gas meter and regulation mechanic, gas clerk-estimator, gas inspector, gas appliance repair mechanic, underground facilities locator, pipeline welder, pipe layer, PE pipe fusion, and equipment operator.

## Program Courses

Course #	Course Title	Credits
458-307	CDL License Training-Online	2
458-310	CDL Lab Pintle Hook Restrict	1
458-311	CDL License Pre-trip Restrict	1
469-302	Gas Utility Field Training 1	5
469-315	Gas Utility Industry Skills	1
442-332	Welding-Gas Service	2
469-304	Gas Utility Field Training 2	5
469-306	Gas Utility Field Training 3	5
469-340	Basic Elect for Gas Utility	1
801-357	Applied Written/Job Seek Comm	1
469-310	Gas Utility Field Training 4	5
601-341	Basics of Gas Appliances	2
809-351	Occupational Relations	2

# Residential Construction

31-475-3 | 33 Credits | One Year | Technical Diploma

The Residential Construction program can help you prepare for a variety of careers in the home building industry. This field needs people with physical abilities and good analytical skills such as:

- Strong Initiative
- Excellent manual dexterity
- Good eye-hand coordination
- Good sense of balance
- Good business sense and math skills
- Well-developed organizational skills
- Good attention to detail

During your first semester you'll learn the basics of the residential construction industry:

- Construction safety
- Construction concepts
- Blueprint reading
- Materials and fasteners
- Rough framing
- Stair systems
- Roof framing
- Roofing

The second semester of instruction builds on that background:

- Estimating (residential)
- Construction planning
- Sustainability
- Doors and windows
- Energy conservation
- Exterior finish
- Interior finish
- Cabinet installation

You'll also receive instruction in incorporating "green" technologies and materials in construction projects, and Wisconsin New Homes Program (formerly Wisconsin Energy Star) specifications. This program includes plenty of hands-on experience. Your final project will be to help construct a full-scale, high-quality home on an actual job site under the close supervision of an experienced instructor. The construction industry fluctuates with the strength of the economy, but the employment outlook for skilled people with training is expected to be excellent. You have options!

## Program Courses

Course #	Course Title	Credits
475-103	Construction Safety	2
475-108	Construction Industry Skills	1
475-109	Framing Methods/Bldg the Envel	3
475-111	Frmng Mthds/Bldng the Envl Lab	5
475-112	Const Basics & Print Reading	2
475-115	Roof Systems and Stairs	3
475-119	Finish Carpentry Int/Ext	3
475-121	Finish Carpentry Int/Ext Lab	5
475-124	Construction Planning	2
475-125	Est Residential Construction	3
475-145	Residential Const Internship	1
801-196	Oral/Interpersonal Comm	3

# Cosmetology

31-502-1 | 44 Credits | One Year | Technical Diploma

If you have a strong interest in personal appearance, have artistic flair, enjoy working with people, and are seeking a career with many excellent employment opportunities, consider the Cosmetology program. CVTC has a state-of-the-art cosmetology lab. You will gain hands-on experience in a setting as close as possible to the work environment you'll find in this career area.

You will gain a complete understanding of salon operations, from marketing and retailing to hygiene and communication skills. The program includes classroom and hands-on instruction to develop the skills you need: • Basic and specialty haircutting • Ethnic hair care • Manicure, pedicure, and nail enhancements • Facials, makeup artistry, and color analysis • Hair designing and styling • Salon sciences • Salon operations and management • Retail sales/marketing • Wisconsin cosmetology laws • Bacteriology and sanitation • Perming and coloring • Hair, skin, and scalp conditioning • Professionalism and ethics

The possibilities for employment related to this career are excellent, with good earning potential. More than 40 percent of all the people in this profession are self-employed, and many more work flexible schedules. With a career in the cosmetologist field, you have options!

## Program Courses

Course #	Course Title	Credits
502-301	Haircutting 1	3
502-304	Haircutting 2	3
502-310	Chemical Services 1	3
502-311	Hair Styling	2
502-320	Nail Technology	2
502-321	Salon Services 1	4
806-323	Salon Science 1	1
806-324	Salon Science 2	1
502-314	Chemical Services 2	3
502-322	Salon Services 2	4
502-323	Salon Services 3	4
502-326	Salon Services Lab	2
502-330	Facial Services	2
801-196	Oral/Interpersonal Comm	3
	<b>--OR--</b>	
801-357	Applied Written/Job Seek Comm	1
102-306	Salon Business & Mktg	1
502-305	Haircutting 3	2
502-324	Salon Services 4	4
502-371	Advanced Salon Operations	2

# Medical Assistant

31-509-1 | 27 Credits | One Year | Technical Diploma

If you enjoy working with people, are detail oriented, have good communication skills, and seek a career in the health care field, the Medical Assistant program could be a good match for you. Medical assistants help physicians by providing patient care, obtaining vital signs, and assisting with examinations and minor office surgery. Medical assistants also administer injectable medications and perform basic diagnostic testing (e.g. EKGs). They instruct patients about tests, procedures, and treatments. Besides patient care skills, medical assistants also perform:

- Administrative and laboratory functions
- Schedule appointments
- Maintain paper and electronic medical records
- Perform bookkeeping
- Complete insurance forms
- Perform medical correspondence
- Collect specimens
- Prepare lab specimens
- Perform basic laboratory tests

As a graduate of the program, you are eligible to take the American Association of Medical Assistant national certification exam. Upon successful completion of this test, you can use the title Certified Medical Assistant [CMA (AAMA)].

The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)), upon the recommendation of the Medical Assisting Education Review Board (MAERB). Commission on Accreditation of Allied Health Education Programs, 25400 US Highway 19 N., Suite 158, Clearwater, FL 33763, phone 727-210-2350.

There is a strong demand for people who are trained for clinical and administrative duties. This could be an excellent career area for you!

## Program Courses

Course #	Course Title	Credits
501-107	Digital Literacy Healthcare	2
509-301	Medical Asst Admin Procedures	2
509-302	Human Body in Health & Disease	3
509-303	Medical Asst Lab Procedures 1	2
509-304	Medical Asst Clin Procedures 1	4
509-309	Medical Law, Ethics & Profess	2
501-308	Pharmacology for Allied Health	2
509-305	Med Asst Lab Procedures 2	2
509-306	Med Asst Clin Procedures 2	3
509-307	Med Office Insurance & Finance	2
509-310	Medical Assistant Practicum	3

# Medical Coder

31-530-3 | 28 Credits | One Year | Technical Diploma

The Medical Coding Specialist one-year technical diploma will prepare you for entry-level diagnosis and procedure coding positions in a variety of health care settings as well as governmental agencies, computer software companies and consulting firms. Medical coding involves reviewing health care provider documentation located in medical records and translating this documentation into alpha-numeric formats called codes. Graduates can be certified by the American Health Information Management Association and the American Academy of Pro. Coders.

## Program Courses

Course #	Course Title	Credits
501-101	Medical Terminology	3
806-177	Gen Anatomy & Physiology	4
530-107	HIMT Fundamentals	3
530-182	Human Diseases for Hlth Profes	3
530-184	CPT Coding	3
530-197	ICD Diagnosis Coding	3
530-199	ICD Procedure Coding	2
530-103	Medical Insurance & Billing	2
530-159	Healthcare Revenue Management	3
530-195	Applied Coding	2

# Paramedic

31-531-1 | 44 Credits | One Year | Technical Diploma

Chippewa Valley Technical College offers a one-year technical diploma in Emergency Medical Technician-Paramedic Advanced that allows graduates to become licensed Emergency Medical Technician-Paramedics. This program is offered as a full-time program starting in August.

Students learn advanced prehospital skills in the classroom, skills laboratory, hospital clinical setting, and in prehospital clinical settings. Students will learn to: • provide advanced airway maintenance, advanced trauma and cardiac life support • provide special care of the obstetric, neonatal, pediatric, and geriatric patient • initiate IV lines • administer emergency medications

The program includes both classroom and clinical training that runs over three semesters. Students spend an average of 16 hours per week in the hospital clinical setting, with hospital clinicals offered concurrently with classroom training. In addition to classroom and clinical experience, the students will also participate in a supervised field experience. There will be some travel required for clinical and supervised field experience.

Students who successfully complete the program are eligible to take the National Registry examination for EMT-Paramedics.

## Program Courses

Course #	Course Title	Credits
531-911	EMS Fundamental	2
806-177	Gen Anatomy & Physiology	4
531-182	Advanced Prehospital Skills	2
531-912	Paramedic Medical Principles	4
531-913	Adv. Patient Assess Principles	3
531-914	Adv. Pre-hospital Pharmacology	3
531-915	Paramedic Respiratory Mgt.	2
531-916	Paramedic Cardiology	4
531-925	Paramedic Clinical Field 1A	2
531-918	Adv Emergency Resuscitation	1
531-919	Paramedic Medical Emergencies	4
531-920	Paramedic Trauma	3
531-921	Special Patient Populations	3
531-926	Paramedic Clinical Field 1B	1
531-922	EMS Operations	1
531-923	Paramedic Capstone	1
531-924	Paramedic Clinical/Field 2	4

# Therapeutic Massage

31-537-1 | 27 Credits | One Year | Technical Diploma

This program will provide training for a professional career in massage therapy. Students will gain knowledge of human anatomy with a focus on the musculoskeletal system. Students will be trained in key massage therapy techniques and applications. Students will be prepared to take exams for the Wisconsin Department of Safety and Professional Services Massage Therapy and Bodywork license.

## Program Courses

Course #	Course Title	Credits
537-100	Massage Therapy 1	3
537-101	MT Ethics & Business Practices	3
537-102	MT Applied Kinesiology 1	3
537-104	Massage Therapy 2	3
806-177	Gen Anatomy & Physiology	4
537-106	MT Pathology & Pharmacology	2
537-108	MT Applied Kinesiology 2	3
537-110	Massage Therapy 3	3
537-112	Massage Therapy Practice 1	1
537-114	Massage Therapy Practice 2	2

# Practical Nursing

31-543-1 | 32 Credits | One Year | Technical Diploma

The Practical Nursing program is 40 weeks in length and includes 32 credits. Students receive clinical instruction, laboratory practice, and clinical nursing experience in medical, surgical, obstetric, geriatric, and community agencies. Community experiences include home care and clinic settings. Through guided learning experiences, students provide nursing care to patients with basic health needs. Students work as a member of the healthcare team under the supervision of a registered nurse. Upon completion of the program, the graduate is awarded a diploma in Practical Nursing and is eligible to take the National Council of State Boards Licensure Examination to become a Licensed Practical Nurse.

## Program Courses

Course #	Course Title	Credits
806-177	Gen Anatomy & Physiology	4
543-101	Nursing Fundamentals	2
543-102	Nursing Skills	3
543-103	Nursing Pharmacology	2
543-104	Nurs Intro Clinical Practice	2
809-188	Developmental Psychology	3
801-136	English Composition 1	3
543-105	Nursing Health Alterations	3
543-106	Nursing Health Promotion	3
543-107	Nsg: Clin Care Across Lifespan	2
543-108	Intro to Clinical Care Mgmt	2
801-196	Oral/Interpersonal Comm	3

# Electromechanical Maintenance Technician

31-620-3 | 27 Credits | One Year | Technical Diploma

The Electromechanical Maintenance Technician program prepares individuals with a diverse skill set that is in high demand in modern manufacturing facilities. The program develops knowledge and skills in electrical and electronic circuits, AC and DC motors, industrial wiring and relay logic and fluid power applications. After successful completion of the Electromechanical Maintenance Technician Technical Diploma, the student has the opportunity to apply these credits to the Automation Systems Technology Associate Degree two-year program and enter the second year of the program.

## Program Courses

Course #	Course Title	Credits
605-118	Basic Electronics with Digital	2
606-185	Blueprint Reading	1
612-101	Related Fluid Power	2
620-101	Automated Processes	2
620-193	Electronic Software Applic	2
804-113	College Technical Math 1A	3
620-155	Industrial Electronics I	2
605-136	Electronic Control Devices	2
620-135	PLC Introduction	2
620-144	Applied EM Machine Principles	2
620-156	Industrial Electronics II	2
631-109	Industrial Internet of Things	2
801-136	English Composition 1	3

# Automotive Technician

32-404-2 | 57 Credits | Two Years | Technical Diploma

If you enjoy working on vehicles, the Automotive Technician program could provide the training you're looking for. You'll gain a theoretical understanding of and practice in all aspects of vehicle maintenance and repair. Much of your training will take place in CVTC's automotive lab, where you will learn while working on customers' cars. The lab provides experience that is very similar to what you will encounter every day on the job as a professional automotive technician.

Training will be offered in all eight areas of the Automotive Service Excellence (ASE) certification areas identified as automotive industry standards: • Engine repair • Automatic transmission/transaxles • Manual drive train and axles • Suspension and steering • Brakes • Electrical/electronic systems • Heating and air conditioning • Engine performance

Skilled automotive technicians are always in demand. You can gain a competitive edge with training in specialized systems, such as electronics or working with hybrid vehicles. The Automotive Technician program could be the program you've been looking for!

## Program Courses

Course #	Course Title	Credits
404-335	Automotive Fundamentals	1
404-336	Basic Vehicle Maintenance	3
404-337	Automotive Electricity 1	2
404-339	Automotive Brake Systems	4
404-351	Auto Engine Performance 1	3
804-360	Math for Technical Trades	2
404-338	Automotive Electricity 2	3
404-350	Auto Steering & Suspension Sys	4
404-352	Auto Engine Performance 2	3
404-355	Automotive Computer Systems	2
442-313	Welding-Automotive Technician	1
801-357	Applied Written/Job Seek Comm	1
404-356	Automotive HVAC Systems	3
404-360	Auto Axles & Drive Trains	2
404-361	Manual Trnsmission & Trnsaxles	3
404-362	Auto Trnsmission & Trnsaxles	4
806-342	Science for Technical Trades	2
404-357	Auto Safety & Security Systems	2
404-363	Engine Repair	4
404-370	Adv Auto Chassis Systems	3
404-371	Adv Engine Perf & Alt Fuels	3
809-351	Occupational Relations	2

# Diesel Technician

32-412-1 | 64 Credits | Two Years | Technical Diploma

If you have a talent for working with mechanical systems and good problem-solving skills, the Diesel Technician program could be a good match for you. As a graduate, you would inspect, analyze, and repair heavy trucks and equipment. Many employers require NATEF/ASE and Department of Transportation certification. The Diesel Technician program at CVTC helps you meet those requirements, giving you an edge when it comes time to start your career. Your instructors are ASE Certified Heavy Duty Truck Technicians with many years of trade and teaching experience.

Your program will include instruction in several core areas, all required for NATEF/ASE certification: • Diesel engines • Suspension and steering • Brakes • Electrical/electronic systems • Preventive maintenance inspection • Drive train • HVAC heating, ventilation, and air conditioning systems

All students graduate from the program with DOT certifications as a 396.25 Brake Inspector and 396.19 Vehicle Inspector. The job outlook is very good for people with strong technical skills who complete formal training in diesel mechanics. This program offers the training you need for a competitive edge toward starting your career!

## Program Courses

Course #	Course Title	Credits
412-305	Truck Chassis I	5
412-306	Truck Chassis II	5
412-345	Basic DC Electricity	2
412-360	Diesel Fundamentals	1
442-316	Related Welding for Diesel	2
801-357	Applied Written/Job Seek Comm	1
412-307	Chassis Electrical	5
412-308	Mechanical Gear Trains	4
412-309	Heavy Duty HVAC	3
804-360	Math for Technical Trades	2
809-351	Occupational Relations	2
412-380	Diesel Internship	1
412-310	Diesel Engine Oper & Tune-up	4
412-311	Applied Mobile Hydraulics	2
412-312	Intro to Electronic Control	4
412-320	Diesel Equipment Service Mgmt	2
412-350	Mobile Hydraulic Concepts	1
458-307	CDL License Training-Online	2
806-342	Science for Technical Trades	2
412-313	Diesel Engine Overhaul	5
412-314	Electronic Diagnostics	4
412-315	Preventive Maintenance	1
442-318	Related Welding Diesel, Adv	2
458-308	CDL License Training-Pre-Trip	1
458-309	CDL License Training - Lab	1

# Welding Fabrication

32-457-1 | 64 Credits | Two Years | Technical Diploma

This two-year technical diploma in Welding Fabrication will prepare individuals to enter the fields of welding, metal fabrication, production manufacturing, construction, maintenance welding, plus many other opportunities in the career of working with metals. Students will gain skills and knowledge in advanced welding processes, along with the traditional processes of SMAW, GMAW, FCAW, GTAW, and Oxy-Fuel welding and cutting.

Students will learn to operate/program manual and CNC cutting and forming equipment. Additional areas of study include blueprint reading, computer drafting software, and fabrication techniques. Students will operate and perform advanced manufacturing processes and equipment such as welding robotics and more. Students will also gain knowledge of welding codes, inspection techniques, and the certification process in the welding/fabrication field. This program will prepare the student for the demands of the ever-advancing skill sets needed in the manufacturing and construction industries of today.

## Program Courses

Course #	Course Title	Credits
442-303	Metals Technology	1
442-307	Welding Print Reading	2
442-310	Welding Safety and Orientation	1
442-325	Shielded Metal Arc Welding	3
442-380	Industrial Skills Welders	2
457-300	Fabrication	3
442-362	Gas Metal Arc Welding	4
442-300	Adv Shielded Metal Arc Welding	3
442-327	Welding Theory	2
442-360	Robotic Welding	2
442-363	Adv Wire-Feed Welding	4
442-364	Gas Tungsten Arc Welding	4
457-305	CNC Fabrication	2
442-301	Welding Metallurgy	2
442-309	Weld Applications & Sense	4
442-350	Pipe Welding	4
457-372	NDT and Welding Codes	2
801-196	Oral/Interpersonal Comm	3
442-371	Advanced Robotic Welding	3
457-320	Adv Processes and Fixturing	4
457-322	Advanced Fabrication	4
457-324	Advanced Fabrication Theory	2
606-135	SolidWorks for Welders	3

# **TECHNICAL CERTIFICATES**

# Cisco Networking Academy

TC-150-1 | 9 Credits | Technical Certificate

Cisco Systems, the worldwide leader in networking for the Internet, is a partner with CVTC. This training program is designed to teach people to design, build, and maintain computer networks capable of supporting national and global organizations. Participants who complete the 9 credits of specially developed curriculum and certifications testing will be ready to begin working in the Information Technology field.

## Program Courses

Course #	Course Title	Credits
150-150	CCNA 1: Intro to Networks	3
150-151	CCNA 2:Switch/Routing/Wire Ess	3
150-153	CCNA 3:Netwkg/Security/Automat	3

# Class B - Truck Driving

TC-458-1 | 5 Credits | Technical Certificate

This set of competencies is designed to prepare students for a Class B Commercial Driver's License (CDL). Certificate completers will be prepared to drive non-combination vehicles such as: short-haul delivery trucks, construction and excavating vehicles and truck used in the sand mining, concrete, or other similar industries.

## Program Courses

Course #	Course Title	Credits
458-340	Straight Truck	5

# Google IT Support Specialist

TC-150-4 | 5 Credits | Technical Certificate

This five-course certificate, developed by Google, includes innovative curriculum designed to prepare you for an entry-level role in IT support. A job in IT can mean in-person or remote help desk work in a small business or at a global company like Google. Through a mix of video lectures, quizzes, and hand-on labs and widgets, the program will introduce you to troubleshooting and customer service, networking, operating systems, system administration and security. Along the way, you'll hear from Googlers with unique backgrounds whose own foundation in IT support served as a jumping off point for their careers.

## Program Courses

Course #	Course Title	Credits
150-131	Technical Support Fundamentals	1
150-133	Bits/Bytes of Computer Network	1
150-135	Become an OS Power User	1
150-137	System Adm/IT Infrastructure	1
150-139	IT Security: Defense Digital	1

# Healthcare Data Analytics

TC-530-6 | 14 Credits | Technical Certificate

Leaners explore healthcare delivery systems and regulatory environment, compliance, healthcare data collection principles, data structure and standardization and interoperability. Further focus involves use of technology in healthcare, including common business software applications, patient portals, healthcare databases, administrative and clinical information systems, and a variety of electronic health record (EHR) simulation.

The courses provide in-depth study of specific tools and hands-on activities including Dia, relational-database, SQL, MySQL, data normalization, information system design, Entity-Relationship Diagrams, and relational data modeling and testing.

## Program Courses

Course #	Course Title	Credits
152-132	Database 1	3
152-136	Database 2	3
501-130	Healthcare IT	2
530-107	HIMT Fundamentals	3
530-160	Healthcare Informatics	3

# Human Resource Generalist

TC-116-2 | 15 Credits | Technical Certificate

This certificate is designed for supervisors or employees who desire or have recently taken on Human Resource responsibilities. The concepts covered in the certificate would also serve those who are looking for a career change or a comprehensive overview of Human Resources, outside their current specialty area.

The certificate consists of six three-credit courses. The first course to be taken should be 116-193, Intro to Human Resources, as it is a prerequisite for all other courses. Each course is conveniently offered in multiple delivery formats.

## Program Courses

Course #	Course Title	Credits
116-112	Training & Development	3
116-113	Human Resource Law	3
116-114	Recruitment & Selection	3
116-116	Employee Relations	3
116-193	Human Resources, Intro	3

# IT - Database Specialist

TC-152-11 | 6 Credits | Technical Certificate

Students will develop a solid foundation in basic database design and development from conventional data analysis through database creation. Students install and configure database management systems that utilize the SQL language to create and manipulate relational databases in both SQLite and MySQL. Students apply these concepts through hands-on activities and database management techniques.

## Program Courses

Course #	Course Title	Credits
152-132	Database 1	3
152-136	Database 2	3

# IT - Python Data Programmer

TC-156-1 | 12 Credits | Technical Certificate

IT - Python Data Programmer certificate is designed to equip individuals with a proficiency in database-driven Python programming. Students will gain comprehensive understanding in Python syntax, data types, control flow, and object-oriented programming, while also learning how to develop applications that effectively interact with databases. SQL will be used to create database reports and manipulate data within Python, providing a practical foundation for data analysis tasks. Additionally, this certificate will introduce students to essential database concepts, SQL queries, and database management systems.

By completing this certificate, individuals will be prepared to pursue careers in data analysis or enhance their existing computer programming skills with Python. This certificate does not require any prior computer programming experience. The included Beginners Guide to Data Analyst course will provide a solid technical foundation, covering essential computer fundamentals to prepare students for learning Python and database concepts.

## Program Courses

Course #	Course Title	Credits
156-104	Beginners Guide-Data Analyst	3
156-105	Python 1-Fundamentals	3
152-132	Database 1	3
156-107	Python 2-Data Essentials	3

# Production Technician

TC-625-3 | 8 Credits | Technical Certificate

Entry-level industrial manufacturing technicians operate industrial production related equipment, work with manufacturing related tools, and perform work processes related to a wide variety of manufacturing settings. Industrial manufacturing technician apprentices will learn to set up, operate, monitor, and control production equipment. They will also help improve manufacturing processes and schedules to meet customer requirements. Industry competency models outline skill sets and competencies that are essential to educate and train a globally competitive workforce.

Entry-level critical work functions include: Understand the various manufacturing types, processes, and products; Understand the manufacturing business as a system that integrates multiple disciplines, processes, and stakeholders; Manage raw materials/consumables; Operate and control production equipment.

## Program Courses

Course #	Course Title	Credits
625-130	MSSC - Safety	2
625-131	MSSC - Quality	2
625-132	MSSC - Process & Production	2
625-133	MSSC - Maintenance	2

# Safety Technician

TC-449-1 | 8 Credits | Technical Certificate

Safety technicians ensure the safety of a company's employees while working to protect equipment and the environment. They monitor workplace conditions, analyze preexisting safety procedures and implement programs that increase employee safety, comfort and productivity.

## Program Courses

Course #	Course Title	Credits
449-800	OSHA Safety Stds-GI	2
449-801	Intro to Safety & Health Mgmt	1
449-802	Incident Investigation	1
449-803	Electrical Standards	1
	--OR--	
449-807	Public Warehousing & Storage	1
	--OR--	
449-810	Evacuation & Emergency Plans	1
	--OR--	
449-814	Recordkeeping & Worker's Comp	1
	--OR--	
449-838	Confined Space Entry & Rescue	1
	--OR--	
449-839	LOTO & Machine Guarding	1
	--OR--	
449-840	Hlth Haz/Bloodborne Pathogens	1
	--OR--	
449-841	Safety Training & Development	1
	--OR--	
449-842	Hazardous Materials	1
	--OR--	
449-843	Ergonomic Fundamentals	1
	--OR--	
449-844	WWS & Fall Protection	1

# Unmanned Aerial Systems (Drone)

TC-487-1 | 7 Credits | Technical Certificate

The Unmanned Aerial Systems (Drone) certificate is designed to give the student a solid foundation in understanding Unmanned Aerial Vehicle systems technologies, capabilities, regulations, safety and legal responsibilities. The certificate will provide the student with the knowledge and practical skills necessary to successfully operate an Unmanned Aerial Vehicle.

This 4-credit certificate consists of web-based ground school followed by leading edge PC-based UAS simulator training.

## Program Courses

Course #	Course Title	Credits
487-176	Drone Recreational Operations	1
487-177	Drone Commercial Operations	2
487-179	Drone Mapping & Modeling	2
487-180	Drone Agriculture Operations	2

# **PATHWAY CERTIFICATES**

# Air Conditioning

61-601-1 | 8 Credits | Certificate

This entry level certificate prepares students with skills necessary for basic air conditioning and cooling services. This certificate prepares students to take the Environmental Protection Agency (EPA) 608 certification exam for refrigerant recovery, recycling and reclamation. After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.

## Program Courses

Course #	Course Title	Credits
601-106	Refrigeration Theory	1
601-116	Principles of Air Conditioning	2
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2

# Business Associate

61-102-3 | 13 Credits | Certificate

Learn the basic business skills you need to compete in today's job market. Get a strong start with knowledge of the key components of business, including the fundamentals of human resources, marketing, and management.

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
102-133	Leadership for Bus Excellence	3
103-170	Microsoft Excel	1
104-102	Marketing Principles	3
116-193	Human Resources, Intro	3

# Customer Sales and Service

61-104-4 | 15 Credits | Certificate

The one-semester Customer Sales and Service Pathway certificate prepares students for entry level customer service, sales and retail positions. Within this semester, the framework for customer service is learned through content to include: professional communications, the use of customer service tools and technology, effective writing through various channels and the basics of customer service strategy.

## Program Courses

Course #	Course Title	Credits
102-112	Principles of Management	3
104-102	Marketing Principles	3
104-110	Customer Relationship Mgmt	3
104-140	Professional Sales	3
106-204	Foundations of Bus Writing	3

# Gas Heating and Airflow

61-601-2 | 8 Credits | Certificate

This entry level certificate prepares students with basic gas heating and air flow skills. After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.

## Program Courses

Course #	Course Title	Credits
601-107	Heating Theory	1
601-108	Prncples of Gas Heat & Airfl	2
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2

# Intro to Gas Metal Arc Welding

61-442-1 | 9 Credits | Certificate

This pathway certificate is designed to provide basic skill levels for entry-level employment in the area of production welding. The certificate covers welding safety, basic welding math, welding print reading and wire feed processes.

## Program Courses

Course #	Course Title	Credits
442-307	Welding Print Reading	2
442-310	Welding Safety and Orientation	1
442-362	Basic Wire-Feed Welding	4
442-380	Industrial Skills Welders	2

# Oil, Electric & Hydronic Heating

61-601-3 | 7 Credits | Certificate

This entry level certificate prepares students with basic oil and electric heating skills. Students will also focus on basic hydronic skills, which is movement of heat using water. After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.

## Program Courses

Course #	Course Title	Credits
601-107	Heating Theory	1
601-109	Prin of Oil, Elec & Hydron Htg	1
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2

# Refrigeration

61-601-4 | 8 Credits | Certificate

This entry level certificate prepares students with skills necessary for basic refrigeration services. This certificate prepares students to take the Environmental Protection Agency (EPA) 608 certification exam for refrigerant recovery, recycling and reclamation.

After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.

## Program Courses

Course #	Course Title	Credits
601-105	Refrigeration Principles	2
601-106	Refrigeration Theory	1
601-125	Safety - HVAC	1
601-140	Electricity Theory	1
601-146	Schematic Wiring-HVACR	1
601-148	Electricity Principles	2

# **COURSE DESCRIPTIONS**

# Horticulture

## **001-102 | Landscape Design/Construction // 2 Credits**

Students will learn how to compile a landscape design including the base plan, functional, preliminary and master plan. Emphasis will be on the landscape design sequence and implementation of the completed landscape design. Hardscape construction topics will be illustrated.

*Restricted to students admitted to the following program(s): 10-001-1*

## **001-103 | Turf Management // 2 Credits**

Examines how to effectively establish and maintain professional lawn/turf. Covers identification and selection of turf grasses, establishment and maintenance practices. The course will include nutrient needs, integrated pest management, diagnosing problems, corrective strategies, irrigation principles and irrigation implementation.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1*

## **001-104 | Greenhouse Management // 3 Credits**

The course will explore the overall operation of a greenhouse facility including types of structures, heating and cooling options, lighting, insect and disease management, watering methods, and equipment. Student will focus on a particular plant area (flowers, herbs or vegetables) and order plant material for the annual plant sale. Marketing of the crop will be required for the sale.

*Restricted to students admitted to the following program(s): 10-001-1*

## **001-108 | Bus Apps for Green Industry // 2 Credits**

Marketing practices of products and services for the Green Industry ranging from product pricing to distribution of product will be studied. Students will analyze new and established strategies for selling through stores, mail order catalogs and Internet sites. Effective techniques for attracting and keeping customers will be covered.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1*

## **001-109 | Horticulture Internship // 2 Credits**

Individuals participating in a work experience will have an opportunity to practice acquired skills and knowledge from their program coursework. This course is designed to help the student, instructor, and site supervisor to focus on major outcomes of the training and general readiness for employment in their chosen field.

*Prerequisite(s): 001-121 Intro to Horticulture and 001-122 Horticulture Lab*

*Restricted to students admitted to the following program(s): 10-001-1*

## **001-110 | Integrated Plant/Pest Mgmt // 2 Credits**

The course will provide students with the knowledge and skill necessary to diagnose plant problems and control strategies in the landscape. Particular attention is given to insects, diseases, weeds and cultural needs of landscape plants.

*Restricted to students admitted to the following program(s): 00-000-0, 10-001-1, 31-001-1, TC-001-2*

## **001-112 | Interior Plants & Plantscaping // 2 Credits**

This course covers topics in foliage plant characteristics, requirements, and identification. Particular attention is placed upon identification of foliage plant material and the classification of these materials according to cultural and interior site use characteristics. The floral design sequence will be demonstrated.

*Restricted to students admitted to the following program(s): 10-001-1*

**001-113 | Pesticide & Fertilizer App // 3 Credits**

This course focuses on the study and application of pesticides and fertilizers used on horticulture crops. Specific areas of study include chemical classification, mode of action in plants, injury symptoms, resistance in plants and pests, mixing and loading concerns, application methods and concerns, recordkeeping and posting requirements. Students will be required to take the Commercial Pesticide Applicator Certification exam as part of this course.

*Restricted to students admitted to the following program(s): 00-000-0, 10-001-1, 31-001-1, TC-001-2, 10-001-1, 31-001-1, TC-001-1, TC-001-2, TC-001-3*

**001-114 | Entrepreneurship for Green Ind // 2 Credits**

Students will investigate businesses utilizing a variety of methods to create a profitable return in the production of goods and services for the Green Industry. Exploring the small business aspects of this industry will be approached through practical learning activities.

*Restricted to students admitted to the following program(s): 10-001-1*

**001-115 | Vegetable and Fruit Production // 3 Credits**

Students will study the commercial production of vegetables in the Midwest while examining the sustainability of the various crops in the industry. Key components will be site selection, integrated cropping systems, cultural and management practices, profitability and efficiencies.

*Restricted to students admitted to the following program(s): 10-001-1*

**001-116 | Landscape Plants // 2 Credits**

Study of annuals, perennials, and roses. Selection, care, and tips to best utilize flowers and foliage plants effectively in their landscape. Groundcovers and vines will be included. Identification of trees and shrubs and their use in the landscape with emphasis on texture, color, bark, flowers, and fruit will be examined. Students will learn proper planting and maintenance practices along with critical pests and diseases that can affect the health of these landscape plants.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1*

**001-117 | Advanced Turf Management // 1 Credits**

This course will simulate advanced lawn and commercial care, golf course maintenance, and drought simulations. Students will care for their test plots by applying fertilizers, pesticides, lawn grooming techniques, and nutrient management. Students will use lawn and golf course equipment.

*Prerequisite(s): 001-103 Turf Management*

**001-120 | Horticulture Soils // 3 Credits**

Explores soil properties, formation, development, and classification in relation to the horticulture industry. Course topics will include horticulture soils uses as a growing medium and as an engineering base for Landscaping.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1, TC-001-2*

**001-121 | Intro to Horticulture // 2 Credits**

This course provides an overview of the horticulture profession. Its role and importance throughout history, current trends, and career opportunities will be covered.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1, TC-001-2*

**001-125 | Horticulture Equipmnt & Safety // 2 Credits**

Focuses on how to maintain and operate a skid steer loader, forklift, til-handlers, turf mowing equipment and general landscape equipment.

*Restricted to students admitted to the following program(s): 10-001-1, 31-001-1*

### **001-132 | Sustainable Land Use Mgmt // 3 Credits**

Analyze the existing landscape to determine the best management practices for the location. Students will gain practical knowledge on procedures for maintaining established landscapes and the economic return. Benefits on well selected and skillful placement of native plant material for the landscape will be an integral part of the overall approach to sustainable land use in this course.

*Restricted to students admitted to the following program(s): 10-001-1*

### **001-133 | Advanced Landscape Plants // 1 Credits**

This course will explore advanced landscape plant techniques. It will include information on planting and pruning of various plant material in the horticulture industry.

## **Agri-Business**

### **006-105 | Industry Skills // 2 Credits**

Want to have a successful career in the Agriculture industry? Learn about what is involved in having a job, managing finances or other people and leadership. This is a class that will help prepare you for your first ag-related job, as well as understanding responsibilities and expectations you will have in the future. This is a course that will get students ready to enter the work force by helping them learn and become aware of some basic skill needed to have success in the work place and provide an individual the ability to become a productive member in the community in which they live, as well as help out their family. It will also help them to become more aware of saving for their own future.

### **006-130 | Agribusiness Financial Mgmt // 2 Credits**

This course focuses on the principles of financial and business management for agricultural businesses with a major focus on farms. Emphasis is given to business types, enterprise budgets, cash flow analysis, tools for analyzing financial decisions, interpreting balance sheets and other financial statements, obtaining credit and comparing methods of reducing price variations.

### **006-138 | Agriculture Marketing // 2 Credits**

This course will apply supply and demand economic principles to the marketing of agricultural commodities with a large focus on grains. This course will focus on the development of marketing strategies for agricultural commodities using cash sales, forward contracts, hedging, and options.

### **006-140 | Agriculture Sales // 2 Credits**

Provides basic knowledge of agribusiness sales and marketing. Topics include recognizing potential customers and building a positive customer relationship, designing marketing plans, and using marketing and sales databases. The concepts will be presented using hands-on activities.

## **Farm Business Management**

### **090-310 | Farm Bus Planning & Risk Mgmt // 4 Credits**

Emphasizes management skills and concepts necessary for farming in today's changing technology and farm business financing. Organize and maintain farm business records, interpret and analyze the records to assist in making sound farm management decisions. Entire farming operation is assessed and plans are developed for future needs, goals and objectives.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-320 | Land Use Management // 4 Credits**

Prepare for land use and nutrient management, develop plan for equipment maintenance and replacement, study alternative energy sources, implement a farm safety plan, and implement environmental land use recommendations. This course is designed for students who have already completed equivalent course in Farm Business Production Management program.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-330 | Precise Agronomics & Energy Mgmt // 4 Credits**

Crop management, including planning, planting, care, harvesting, storage, and marketing.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-340 | Livestock Nutrition & Reproduction // 4 Credits**

Apply livestock nutrition principles and complete a farm business analysis.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-350 | Farm Business Analysis & Market Strat // 4 Credits**

Computerized financial records, credit, budgeting, farm estate planning, financial analysis, and risk management.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-360 | Livestock Facility, Health & Biosecurity // 4 Credits**

Dairy production including housing youngstock, breeding and sire selection, herd health, quality milk production, and marketing.

*Restricted to students admitted to the following program(s): 30-090-1*

**090-390 | Cash Grain Crop Mgmt // 4 Credits**

The course content focuses on issues and concerns of particular interest to the student involved in the production of agronomic or specialty crops for cash sale. Topics addressed include marketing alternatives and strategies; biotechnology applications in crop production; advanced production practices; financial management of the crop enterprise; and human resource issues. The course includes 72 hours of group instruction and 8 hours of individual on-farm instruction.

*Restricted to students admitted to the following program(s): 30-090-1*

## **Animal Husbandry**

**091-110 | Livestock Evaluation & Judging // 2 Credits**

Cattle Evaluation and Judging is a hands-on two credit hour lecture/laboratory course concentrating on the science and art of live animal evaluation. The lectures will cover all aspects of improving the selection of meat and dairy animals and the efficiency of meat animal and dairy production. Laboratory activities will include the evaluation of market animals and the evaluation and selection of breeding animals of all meat animal and dairy species.

**091-112 | Livestock Modernization // 2 Credits**

Livestock Modernization will focus on technology and modernization, robotic milking barn design, data management on farms with robotic milkers, automated feed pushers, precision feeding, using activity monitors for heat detection and decision making tools. Students will participate in various lab opportunities on state-of-the-art dairy farms in western Wisconsin.

**091-120 | Livestock Housing // 2 Credits**

This course will involve planning a total dairy facility. This will include site selection, long-range planning, plan development, specifications, and contracts. It will include facilities for all management groups including replacements and the milking and dry cows. A milking center, special handling and treatment facilities, manure and waste management, and feeding facilities will be included. Emphasis will be placed on environmental issues both within the facility and the effect of the operation on the surrounding area. It will include animal health as it relates to the design and operation of the facility. Utilities to adequately and safely operate the facilities will also be covered.

**091-121 | Livestock Records Software // 3 Credits**

This course will apply the use of dairy and livestock management, decision aid software, database management software, spreadsheets and specialized livestock computer programs.

**091-122 | Animal Breeding & Genetics // 2 Credits**

This course is a study of available and emerging technologies/strategies for controlling the reproductive function of farm animals, including artificial insemination, embryo manipulation and transfer, control of ovulation and animal cloning. Laboratories are “hands on” sessions using available technologies with emphasis on artificial insemination of cattle.

**091-130 | Animal Science Internship // 1 Credits**

This course is required for all students in the Animal Science Management Associate Degree Program. Provides students work experience in an area of their choice and complements on-campus instructional program. Potential for full-time employment for program graduates is available.

*Restricted to students admitted to the following program(s): 10-091-7*

**091-132 | Ruminant Nutrition & Feeding // 2 Credits**

This course covers principles of ruminant nutrition with dairy cows and replacement heifers as the main focus. At the end of this course, students will be familiar with current scientific concepts of ruminant nutrition. In addition, students will gain practical knowledge and critical thinking skills in evaluating dairy rations. Learning is not only acquiring new knowledge, but more importantly, it includes the ability to apply, to analyze, to synthesize, to criticize, and to evaluate.

**091-134 | Advanced Reproduction // 2 Credits**

This course is designed to provide students with learning experiences such as comparative anatomy and physiology of the male and female reproductive systems of domestic animals, endocrinology of reproduction, gestation and parturition. Students will also become AI Certified upon successful completion of the course. Hands on learning will be key to application of these methods in the future. Exams and quizzes are used to enhance the learner process and give feedback to the instructor. This course will also help the student develop the terminology needed to discuss the reproductive process in ruminants. Discussion of the physiology will include the endocrine control of reproduction. The goal of the course is to help the students understand the rationale principles used in developing guidelines for good reproductive management.

**091-140 | Herd Management // 2 Credits**

Herd Management is intended for herd managers and will focus on the development of skills related to managing large herds and also supervising employees. The production phase of the dairy industry will be covered including animal selection, feeding, breeding, herd health, and management practices important to quality milk production.

**091-142 | Lactation and Physiology // 2 Credits**

This course is designed to gain an understanding of the origin of the mammary gland, mammary gland anatomy and physiology, and how the mammary gland develops in mammalian species. Milk properties and quality will also be discussed.

**091-144 | Transition&Replacement Animals // 1 Credits**

Feeding and management of dry cows through calving will be discussed in this course. Calf care through puberty, breeding, and gestation will also be covered. Beef and dairy beef management will be referenced throughout. Facility requirements for these classes of livestock will be reviewed. Record keeping systems will be developed and on-farm recommended practices will be presented to selected producers.

**091-145 | Special Livestock University // 1 Credits**

This two-week special livestock seminar introduces students to an analysis of genetics, reproductive physiology, growth and development, nutrition and digestive physiology, anatomy, meat science, animal classification, current issues and overviews of the poultry, equine, sheep, swine, and aquaculture industries. Content may be enhanced by utilizing appropriate computer applications. Presenters for this course are specialty livestock producers in western Wisconsin.

**091-146 | Animal Science Seminar // 1 Credits**

This class is a clinical. Students will work directly with local industry in the Animal Science profession to further their education and experiences in a real- work setting.

**091-147 | Animal Science Capstone // 2 Credits**

The purpose of the Capstone course is for the students to apply knowledge acquired during the Animal Science program to design a project required for Technical Skills Attainment for the WTCS system. During the project, students engage in the entire process of solving a real-world animal science scenario. This is a last semester course only.

**091-150 | Farm Data and Analysis // 2 Credits**

Farm Data and Analysis Course will guide students on how and where to find farm data; data quality elements, data analysis and visualization.

This course will also cover the topics of conceptual frameworks for sharing data; and the ways to make data findable and accessible.

**091-181 | Intro to Animal Science // 2 Credits**

Provides fundamental knowledge of the animal science field. Topics include animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and job-related safety.

**091-182 | Animal Science Lab // 1 Credits**

Participants will experience animal concepts through the completion of hands-on activities on animal health, genetics and reproduction.

**091-184 | Herd Health // 3 Credits**

Maintain healthy dairy herd; reducing somatic cell count; role of vaccines, antibiotics, and probiotics.

**091-188 | Feed Analysis // 2 Credits**

Provides an understanding of the needs of livestock from a feed perspective. Specific details for forage crops and grain quality and how they relate to livestock feed and nutrition will be taught using hands on technology and tools.

## Crop & Soil

### **093-107 | Precision Management // 2 Credits**

This course focuses on students evaluating agronomic and financial data in agronomy using software programs and field data. Learners will analyze and interpret precision agriculture data, integrating field-generated information with software tools to enhance agronomic and economic decision-making. Learners will also evaluate various software platforms used by producers, agronomists, and other professionals within the industry.

### **093-110 | Introduction to Agronomy // 2 Credits**

This class provides a fundamental introduction to the agronomy careers and opportunities. Through hands on, in-person tours and site visits students will have a basic understanding of the opportunities agronomy careers have to offer.

### **093-112 | Precision Farming // 2 Credits**

This class provides students with an in depth look at all areas of precision farming specifically related to the field equipment. Basic GPS, auto guidance, row clutches, implement steering, drone technology and variations and combinations of both are main topics in this class. Students will learn to calibrate, set up, and operate various precision farming equipment.

### **093-114 | Plant Protection Products // 2 Credits**

This course focuses on the study and application of crop protection products used on agronomic crops in the upper Midwest. Specific areas of study include chemical classification, of action in plants, injury symptoms, resistance in plants and pests, mixing and loading concerns, application methods and concerns, record keeping and posting requirements and the chemical's application to precision agriculture. Students will be required to take the Commercial Pesticide Applicator Certification exam as part of the course.

### **093-116 | Introductory Soils // 3 Credits**

Provides fundamental knowledge of soils and growth media. Course topics include soil formation and development, soil components, soil profile, soil classification, and soil conservation. Participants will experience soils concepts through the completion of hands-on activities.

### **093-118 | Agriculture Equipment // 2 Credits**

This course provides fundamentals of calibration and maintenance of planting, seeding, and harvesting, equipment, including emphasis on precision agricultural concepts. By the end of the course, participants will have the skills and knowledge to operate, maintain, and calibrate agriculture equipment components.

### **093-122 | Nutrient Management // 2 Credits**

This course provides an in-depth evaluation of soil chemistry, nutrient management, and fertilizer applications in modern crop production. Students will analyze soil tests, interpret nutrient requirements, and assess fertilizer sources, application methods, and manure management strategies. Emphasis is placed on environmental stewardship, economic considerations, and sustainable practices to optimize soil fertility and maximize profitability. Critical thinking and data-driven decision-making will be applied to real-world agronomic scenarios.

### **093-124 | Pest Management // 1 Credits**

This course will help students with identifying common field pests for corn, soybeans, and alfalfa crops. Weeds, insects, and fungi are just a few of the topics for identification and management. Management practices that include biological, mechanical, and chemical are all included as part of Pest Management class.

**093-126 | Precision Field Applications 1 // 1 Credits**

This course is 40-hours of hands on time in the field using various farm equipment. Students in the Precision Field Applications 1 course will be responsible for planting the Crop Education Plot, CVTC farmland, and other farms as time allows. Students will be responsible for setting up equipment, proper operation of equipment and the chemical and seed recommendations for the farms.

*Restricted to students admitted to the following program(s): 10-093-9, 31-093-3*

**093-128 | Plant Science // 2 Credits**

Provides fundamental knowledge of plant components and their functions. Topics include pollinating and propagating plants, germinating seeds, plant nutrients, and factors affecting photosynthesis, respiration, and transpiration.

**093-129 | Plant Science Lab // 1 Credits**

This course enhances the lecture portion of the Plant Science class and provides learners with hands-on labs relating to general plant science and crop production techniques. This course will prepare learners to properly identify crop growth stages, find nutrient deficiencies, and determine factors that impact plant growth.

**093-130 | Agronomy Internship // 1 Credits**

The Agronomy Internship is 190 hours of On-the-Job Training: This course is required for all students in the Precision Agronomy Management Associate Degree Program. Provides students work experience in an area of their choice and complements on-campus instructional program. Potential for full-time employment for program graduates is available.

*Restricted to students admitted to the following program(s): 10-093-9*

**093-132 | Crop Scouting // 2 Credits**

The course will focus on scouting practices for the common pests of corn, alfalfa, and soybeans. Students will learn the traditional crop scouting methods as well as using the new drone (UAS) technology. Diagnosing problem areas in the field and giving recommendations will be the key topic of this course.

**093-134 | Precision Field Applications 2 // 1 Credits**

Students will have a continuation of the Precision Field Applications 1 course, this one happening during harvest season. Students will be responsible for setting up harvesting equipment and harvesting the crops. They will also be responsible for any fall tillage work that may be done on the CVTC farmland.

**093-136 | Row Crop Management // 2 Credits**

This course will focus on the cultural practices important in the profitable production of row crops common to Wisconsin (corn and soybeans). Specific attention will be given to seed bed preparation, planting, variety selection, fertilization, weed control, insect control, disease control, harvesting, drying and storing corn and soybeans. Budgeting the row crop enterprise will be covered in instruction.

**093-140 | Fertilizer Systems & Tech // 2 Credits**

This class will focus specifically on the use of pull-type and self-propelled spray equipment. Upon completion of the course students will be able to calibrate and operate spray equipment. This class also will give students the perspective of different cooperative fertilizer operations and equipment. Students will be able to calibrate fertilizer spreaders upon class completion.

**093-142 | Agronomy Capstone Project // 1 Credits**

The purpose of the capstone course is for the students to apply knowledge acquired during the Precision Agronomy Management program to design a project required for Technical Skills Attainment for the WTCS system. During the project, students engage in the entire process of solving some real-world agronomy scenarios. This is a last semester course only.

### **093-144 | Crop Planning // 2 Credits**

This course explores crop rotations and farm financial diversification. The learner will apply topics in tillage and soil management practices, alternative farm income, cover crops, spray residues and residuals, crop insurance, government programs, and total farm planning. The learner will achieve the course competencies through a variety of projects, scenarios, and skills demonstration.

## **Accounting**

### **101-104 | Database for Accounting // 2 Credits**

This course introduces intermediate Microsoft Access concepts with accounting applications. Students will create forms, sub forms, and reports for accounting applications. Students will also learn to use the switchboard manager, create macros, create charts, and administer a database system. In addition, students will also be introduced to PDF applications used for reporting accounting information.

*Prerequisite(s): 101-106 Accounting Spreadsheets*

### **101-105 | Accounting, Intro to // 3 Credits**

This is an introductory course designed to introduce the learner to the basic accounting language and concepts of business entities. Skills such as, analyzing business transactions, applying fundamental accounting concepts, identifying accounting control procedures, and evaluating financial statements will be developed. This course is intended for the non-accounting major.

### **101-106 | Accounting Spreadsheets // 2 Credits**

This course introduces students to intermediate Excel concepts with accounting applications. Students will utilize a variety of financial analysis, and database functions as they create, format, and modify worksheets in Excel.

*Prerequisite(s): 101-111 Accounting I*

### **101-111 | Accounting I // 4 Credits**

This course prepares the learner to understand and apply Generally Accepted Accounting Principles to analyze, record, summarize, and interpret accounting information. The course focuses on completing the accounting cycle, including business transactions and preparing financial statements for service and merchandising businesses.

### **101-113 | Accounting II // 4 Credits**

This course presents basic concepts for partnerships and corporations. It introduces current liabilities, bonds, cash flow statement preparation, financial statement analysis, cost-volume profit, and budgeting. The course includes a practice set in which the student records transactions, records adjusting entries, and prepares financial statements for a corporation.

*Prerequisite(s): 101-111 Accounting I and 101-149 Intro to QuickBooks*

### **101-116 | Intermediate Accounting // 4 Credits**

This course requires the learner to apply accounting information to make business decisions. The course builds upon previously learned accounting principles and stresses a more complex application of these principles.

*Prerequisite(s): 101-113 Accounting II*

### **101-117 | Intermediate Accounting II // 4 Credits**

This course is designed to utilize the students previously learned accounting concepts through a more complex application of accounting principles. Students will study fixed asset utilization, debt and equity investments, EPS calculations, and financial statement analysis. This course is primarily a problem-solving course involving considerable reasoning and logic.

*Prerequisite(s): 101-116 Intermediate Accounting*

**101-118 | Managerial Accounting // 3 Credits**

This course prepares learners to analyze managerial accounting principles in making effective business decisions. Learners will develop proficiency in cost system designs, cost management, budgeting, activity-based costing, and cash management. Through hands-on activities and assessments, learners will demonstrate their knowledge and skills in utilizing accounting information to enhance organizational performance.

*Prerequisite(s): 101-125 Cost Accounting*

**101-121 | Payroll Accounting // 3 Credits**

The learner will make the necessary payroll calculations and record keeping, including social security taxes, income tax withholdings, and other deductions. They will also maintain employee earnings records, record journal entries and generate payroll reports. A comprehensive payroll project is required.

**101-123 | Income Tax I // 4 Credits**

This course introduces the learner to federal and Wisconsin income tax laws with an emphasis on preparation of individual and small business income tax returns. Students learn to apply federal and Wisconsin tax laws relating to gross income, exemptions, filing status, deductions, retirement plans, gains and losses, depreciation, business income and deductions, credits, special taxes, and payments.

*Prerequisite(s): 101-111 Accounting I*

**101-125 | Cost Accounting // 3 Credits**

The study of cost accounting provides a practical approach to job order and process cost accounting systems. The course blends theory with practical application of problems and case studies. Topics include budgeting, standard cost variances, direct costing, and break-even analysis.

*Prerequisite(s): 101-113 Accounting II*

**101-126 | Income Tax Preparation // 2 Credits**

This course provides students with a practical application of individual income tax laws. Students will exhibit professionalism, interview taxpayers, use tax resources, and prepare individual income tax returns using software and electronic filing. Students practice these skills while participating in the Internal Revenue Service sponsored Voluntary Income Tax Assistance program.

*Prerequisite(s): 101-123 Income Tax I*

**101-127 | Auditing // 2 Credits**

This course introduces basic auditing concepts with extensive audit methodology including work paper preparation.

*Prerequisite(s): 101-113 Accounting II*

**101-131 | Accounting Systems // 3 Credits**

Student will examine the systems development life cycle including systems principles and internal controls. They will then apply these principles and controls to various systems analysis, designs, and implementation projects.

*Prerequisite(s): 101-116 Intermediate Accounting*

**101-133 | Acct Govt & Nonprofit Entities // 2 Credits**

This course introduces the learner to fund based accounting concepts used by governmental units, non-profit organizations, and healthcare entities in accordance with GASB. We will explore the governmental fund accounting cycle starting with budgetary requirements, recording journal entries, and concluding with reporting for the various fund types. Accounting and reporting activities for non-profit organizations, including healthcare entities, will be explored.

*Prerequisite(s): 101-113 Accounting II*

### **101-149 | Intro to QuickBooks // 2 Credits**

This is a computerized accounting course where the student is expected to have a basic understanding of the accounting fundamentals to be applied to the QuickBooks bookkeeping system. The learner will post transactions within the system including receipting for cash sales and sales on account as well as purchasing on account and with cash. The learner will also perform the bank reconciliations and financial statement preparation with the QuickBooks system.

### **101-160 | Accounting Internship // 2 Credits**

Culminates the accounting program with 128 hours of accounting experience. Individuals participating in a work experience will have the opportunity to practice acquired skills and knowledge from the Accounting program coursework. This course is designed to help the student, instructor, and site supervisor to focus on major outcomes of the training and general readiness for employment in the accounting field.

*Prerequisite(s): 101-116 Intermediate Accounting*

### **101-163 | Accounting Capstone // 3 Credits**

This project-based course is a culmination of the knowledge and skills from financial accounting, cost accounting, payroll accounting, information systems, accounting spreadsheets, and income tax. The course project entails a service-based business including the sales of goods and services. The project will include creating a business, developing the computerized accounting information system, performing the daily accounting transactions, updating the inventory records, performing financial reporting and analysis, preparing payroll and completing payroll forms, and preparing tax documents.

*Prerequisite(s): 101-116 Intermediate Accounting and 101-121 Payroll Accounting and 101-123 Income Tax I and 101-125 Cost Accounting*

### **101-172 | Business Finance // 3 Credits**

In this course aspects of organizational finance will be explored. Students will learn how to interpret financial statements as well as learning the process of budget analysis. It is imperative that leaders understand how to control and analyze the budgets they are responsible for.

*Prerequisite(s): 101-105 Accounting, Intro to or 101-111 Accounting I*

## **Business Administration**

### **102-109 | Business Analytics // 3 Credits**

Students will utilize common business software to analyze datasets present in typical business management situations, translate the analysis into business recommendations that will improve business performance, and effectively create and present analysis recommendations to decision-makers.

*Prerequisite(s): 103-170 Microsoft Excel or 103-102 Microsoft Office Suite*

### **102-112 | Principles of Management // 3 Credits**

This course explores the four key managerial functions: planning, organizing, leading, and controlling. Learners gain personal insights through assessments and feedback, while learning to apply theoretical concepts to their potential managerial practices. The course emphasizes global applicability, preparing learners for diverse leadership roles.

### **102-113 | Business Ethics // 3 Credits**

The purpose of this course is to provide an introduction to ethical decision-making in business. Topics covered include common myths about business ethics, motivations for being ethical, common ethical problems facing employees, managers, and organizations, prescriptive and psychological approaches to deciding what is right, managing for ethical conduct and managerial approaches to an ethical culture.

**102-114 | Managing Operations // 3 Credits**

Designed for mid-management careers, this course emphasizes practice of management skills. Topics covered include: strategic process management, manufacturing systems, operations strategy, product design, process technology selection, capacity planning, resource planning and scheduling, inventory control, project management and quality/productivity improvement tools and strategies.

**102-115 | Business Mgmt Internship // 1 Credits**

Provides the student with 64 hours of on-site experience completing managerial-type tasks in a professional office. Students may prepare training sessions, analyze budgets and prepare recommendations, draft reports, develop interview questions, screen resumes, complete project management tasks, plan events, or perform other responsibilities typical of business managers. Students coordinate with the instructor to locate an appropriate internship site. Course to be taken during the final semester.

*Prerequisite(s): 102-109 Business Analytics and 102-112 Principles of Management and 102-113 Business Ethics and 102-133 Leadership for Bus Excellence and 102-188 Project Management and 102-116 Strategic Management and 102-117 Business Mgmt Career Planning*

*Restricted to students admitted to the following program(s): 10-102-3*

**102-116 | Strategic Management // 3 Credits**

This course provides an overview of what managers face when formulating and implementing strategic decisions. We will analyze strategic management techniques focusing on the use of corporate planning and budgeting to create value for organizations.

**102-117 | Business Mgmt Career Planning // 2 Credits**

To prepare for the business management internship, students produce all documentation related to the job-seeking process and participate in activities with business professional to polish students' job-seeking skills. Students meet once a week with the instructor to discuss techniques for getting and keeping a job and other career-enhancing strategies. Take during the final semester.

*Prerequisite(s): 801-136 English Composition 1 or (801-219 English Composition 1 or 801-223 English Composition 2)*

**102-130 | Innovative Business Mindset // 3 Credits**

In this course, students will explore the traits and mindset of entrepreneurs, examine innovative companies, and distinguish between entrepreneurs and intrapreneurs. They will evaluate business plans, create a business framework, and understand the role of innovation in business. This course equips students with essential skills for entrepreneurial/intrapreneurial success, developing an innovative mindset and leadership in dynamic business environments.

**102-133 | Leadership for Bus Excellence // 3 Credits**

This course fosters self-awareness and personal enhancement, emphasizing core communication and interpersonal skills for professional success. Through self-assessments and reflection, learners identify their strengths and areas for development, interpersonal effectiveness, and personal accountability.

**102-160 | Business Law // 3 Credits**

Business Law is designed to help the student develop an understanding of the law and the relationship of the legal system to the business world. After consideration of the legal system, the course reviews contracts, sales and lease contracts, warranties, product liability, consumer law, bailments, creditors' rights, and bankruptcy.

**102-188 | Project Management // 3 Credits**

The learner applies the skills and tools necessary to design, implement, and evaluate formal projects. Each learner will demonstrate the application of the role of project management by developing a project proposal, using relevant software, working with project teams, sequencing tasks, charting progress, dealing with variations, budgets and resources, implementing a project, and assessing the outcome.

### **102-306 | Salon Business & Mktg // 1 Credits**

This course provides marketing skills, salon management, and the operation of a salon/spa business. Students evaluate merchandising displays, improve retail profits, and investigate various advertising and marketing media. Students learn an overview of salon management/ownership responsibilities, decision making in business, promotion, and positive customer relationships.

*Restricted to students admitted to the following program(s): 31-502-1*

## **Computer Software**

### **103-102 | Microsoft Office Suite // 2 Credits**

The goal of this course is to provide an introduction to Microsoft Office Suite and how it is used in academic, personal, and business environments. The students will become familiar with the Office user interface and use it as they work with Word, PowerPoint, Excel, and Outlook. Navigate the Office interface by using tabs, ribbons, and groups.

### **103-170 | Microsoft Excel // 1 Credits**

This course incorporates Microsoft Office Excel skills and how it is used in academic and business environments. Students will apply software features to the successful completion of business-related projects and scenarios.

## **Mkting & Merchandising Mgt**

### **104-102 | Marketing Principles // 3 Credits**

Marketing of products and services. Concentrates on product, price, place, promotion, market segmentation, target marketing, pricing, market research, physical distribution and distribution channels.

### **104-105 | Marketing Research // 3 Credits**

To create greater awareness of the process of marketing research including surveys, focus panels, sampling procedures, and the general steps in doing marketing research. Marketing decisions and problem-solving skills will be improved. Micromarketing and databases are included.

*Prerequisite(s): 104-102 Marketing Principles*

### **104-108 | Retail and Ecommerce // 3 Credits**

This course will present practical information to prepare students for today's retail environment. Past practices are fully explored, as are the innovative concepts that have become part of the fashion retailer's world. Areas of study include social responsibility, purchasing domestically and off-shore, private labels and brands, pricing and inventory, customer service, visual merchandising, and management and control functions.

### **104-110 | Customer Relationship Mgmt // 3 Credits**

Explore customer service relationship management, a customer-centric business process used to organize, automate, and synchronize advertising, marketing, sales, support, and service functions across an organization. Develop skills to effectively implement a CRM strategy to build brand equity, maximize customer lifetime value and drive profitable revenue growth.

**104-112 | Adobe Visual Design // 4 Credits**

Visual Design focuses on the foundations of print and digital productions that develops career and communications skills in graphic design, illustration, and print and digital media production. Students use Adobe Illustrator, Photoshop, InDesign, and Acrobat. Skills gained in this course prepare students to test for the Adobe Associate Certification.

*Restricted to students admitted to the following program(s): 10-104-3, 10-104-8, 10-201-1, TC-104-8*

**104-116 | Sales Management // 3 Credits**

Focus on special topics in sales management to synthesize learning. This course allows students to demonstrate the advanced skills, processes, and practical experience gained to plan, construct, and deliver a professional sales presentation. Course will focus on these skills sets, leadership and the management of sales teams.

*Prerequisite(s): 104-125 Promotions and 104-140 Professional Sales*

**104-118 | Sales Mgmt Field Study // 3 Credits**

Focus on special topics in sales management to synthesize learning. This course allows students to demonstrate the advanced skills, processes, and practical experience gained to plan, construct, and deliver a professional sales presentation. Current and selected topics relating to sales techniques and markets will be explored in the rapidly changing world economy.

*Prerequisite(s): 104-140 Professional Sales and (104-110 Customer Relationship Mgmt and 104-185 Negotiation Skills)*

**104-119 | Digital Marketing Strategy // 3 Credits**

Social media may seem spontaneous, but for successful organizations, it is not. This course emphasizes research, critical thinking, training, and profiling required in determining which social networks to use. After networks are determined, students plan campaign and general messages designed to better connect with audiences, deepen relationships, and drive profits. We use case studies and real world examples to learn from successes and failures. Successful businesses need to understand the current mobile landscape and how to harness the power of mobile marketing to reach key target markets. This course examines the evolution of mobile, mobile marketing tactics, the mobile advertising ecosystem, and how mobile marketing fits into your overall digital media strategy. We investigate geo-marketing, localized marketing, designing for mobile media, mobile websites, mobile advertising, m-commerce and mobile spending, SMS and mobile apps.

**104-122 | Visual Design // 3 Credits**

Bring marketing strategies to life through compelling designs for print and digital purposes. Learn how to use the fundamental concepts of color, typography, and elements and principles of design to influence attitudes and behaviors of target audiences. Use industry-standard software and AI to create, critique, manipulate, and hone compelling designs that cater to client needs and budgets.

**104-125 | Promotions // 3 Credits**

Advertising consists of communication activities that inform potential consumers about goods, services, images or ideas to achieve a desired outcome. Elements of the Promotional Mix: advertising, personal selling, publicity, and sales promotion are covered in detail. The course includes an introduction of creative elements in advertising.

*Prerequisite(s): 104-102 Marketing Principles*

*Restricted to students admitted to the following program(s): 10-104-3, 10-104-8, 31-104-10*

**104-127 | Digital Marketing Campaigns // 3 Credits**

Using knowledge gained from previous coursework, students individually run a 14-week digital media campaign for a fictitious business using a variety of popular social media platforms and digital outlets. Students learn strategies for posting content, days, times, acceptable attachments, citations, and more.

*Prerequisite(s): 104-119 Digital Marketing Strategy*

**104-129 | Digital Marketing Capstone // 4 Credits**

Participate in a semester-long simulation executing the digital marketing plan and other materials created in previous courses. Develop a content calendar, create organic content, and post on a variety of social media platforms. Practice establishing guidelines, interacting with live social audiences, and hosting a legal social media sweepstakes. Explore paid content and present an advertising strategy with a realistic timeline and budget.

*Prerequisite(s): 104-125 Promotions and 104-119 Digital Marketing Strategy and 104-154 Digital Audio & Video and 104-148 Web Fundamentals and 104-163 Social Media Policies and 699-133 Digital Content Writing*

**104-140 | Professional Sales // 3 Credits**

Apply Business to Business sales process using the SPIN (situation, problem, implication, and need payoff) method to large account sales, role play in a non-retailing, distribution channel environment.

**104-148 | Web Fundamentals // 3 Credits**

Digital Design takes Visual Design one step further to hone design skills. It also focuses on the foundations of web design that teaches digital communication skills in the context of the professional web design, development, and management process. Students use HTML coding, Adobe Dreamweaver, Illustrator, Photoshop, and Adobe Firework. Skills gained in this course prepare students to test for the Adobe Associate Certification.

*Prerequisite(s): 104-112 Adobe Visual Design or (201-102 Digital Illustration and 201-104 Photoshop Fundamentals)*

**104-154 | Digital Audio & Video // 3 Credits**

Digital Design Broadcasting is project-based curriculum that develops career and communication skills in digital broadcasting production, using Adobe tools. This course curriculum develops four key skill areas: Project management and collaboration, design, video production and audio production using broadcasting tools. Students engage in skills to learn storytelling, capturing and editing video and audio, and finalizing content.

*Prerequisite(s): 104-112 Adobe Visual Design*

**104-160 | Event Planning & Marketing // 3 Credits**

This course provides a comprehensive introduction to the principles and practices of event planning and marketing, guiding learners through the process of creating successful events from conception to execution. Learners will learn to manage all aspects of event planning, including budget development, risk mitigation, sponsorship acquisition, audience engagement, and marketing strategies for both B2B and B2C events.

*Prerequisite(s): 104-125 Promotions*

**104-163 | Social Media Policies // 3 Credits**

Through practical applications, delve into social media regulations and explore the requirements of endorsements; FTC guidelines for transparent disclosures; product placements; legal and compliant social media contests and sweepstakes; affiliate and network marketing; and influencers in advertising. With knowledge across these areas, develop company and employee social media policies and contracts to foster responsible online behavior, adherence to legal standards, and alignment with organizational values.

**104-166 | Enterprise Marketing & Mgmt // 4 Credits**

Hands-on application of concepts previously learned in the marketing program while participating in an actual on-campus business. Emphasis will be placed on the nine functional areas of marketing: product/service planning, promotion, purchasing, risk management, selling, distribution, financing, marketing information management, and pricing. Competencies learned in other courses will be used to run a school-based enterprise. Students research the market, determine the proper product mix, go to market to buy products to sell, and promote to CVTC students, staff, faculty, and community. Management skills will also be applied throughout the course. Teachers and students will work jointly with other programs to control inventory, market, and keep accurate records. This applied and integrated course will act as a go-between the theories taught in the classroom and real-life situations.

*Prerequisite(s): 104-102 Marketing Principles and 104-125 Promotions*

**104-169 | Marketing Prof Practice // 1 Credits**

This course allows students hands-on experience and exposure to real-world marketing careers. Students can choose from a traditional internship, virtual internship, entrepreneurship collaboration project, job shadowing, a field study, and more. Offerings vary each semester depending upon availability.

*Prerequisite(s): 104-183 Marketing Strategy*

*Restricted to students admitted to the following program(s): 10-104-3, 10-104-8*

**104-174 | Digital Marketing Analytics // 2 Credits**

Digital media is an effective business strategy, but knowing the financial impacts and who your customers are as a result of your efforts assists with increasing profits. Students explore the most effective strategies for evaluating captured data that determines consumer insights. The course explores how to answer key questions that influence digital campaigns, their impact on return on investment and other business decisions. Examine social media analytical tools and discover how to monitor feeds to find out what followers are saying about your brand. Students have the opportunity to earn official Google Analytics Certification.

*Prerequisite(s): 104-127 Digital Marketing Campaigns*

**104-182 | Personal Branding // 2 Credits**

This course emphasizes the Professional Development Plan (PDP), with a strong personal career focus. Students will increase their self-understanding and set specific career goals. Students will create and update career credentials that will be necessary to compete in a competitive employment market. Students will prepare a professional career portfolio that will be a strong personal sales tool for their future. In addition, the course will take an in-depth review of the job search process outlining techniques and pathways to opportunities. Must have 4th semester standing.

*Prerequisite(s): 104-183 Marketing Strategy*

*Restricted to students admitted to the following program(s): 10-104-3, 10-104-8*

**104-183 | Marketing Strategy // 3 Credits**

The students will pull together all their learning from previous Marketing classes and apply it in a comprehensive and understandable manner. Taking a current business or starting a new business, the students in a semester-long project will work through the marketing mix, marketing research, pricing strategies, promotional strategies, organizational/management strategies, product strategies, services provided, place or distribution strategies, targeting customers, and other decisions in an extensive and inclusive project.

*Prerequisite(s): 104-125 Promotions and (104-105 Marketing Research or 104-174 Digital Marketing Analytics)*

**104-185 | Negotiation Skills // 3 Credits**

Students explore how current approaches to negotiation strategy and tactics are used, what negotiation entails, and types of negotiation relationships that exist. They will build skills in the process of negotiating business agreements within a global environment to fully partnered relationships and personal ones. The course explores the personal and behavioral characteristics of an effective negotiator.

*Prerequisite(s): 104-102 Marketing Principles*

**104-191 | Service Marketing // 3 Credits**

Assume the role of a Customer Service Representative - designed to simulate many of the situations, problems, and challenges faced by all business professionals dealing with customers from call center representatives, sales associates to account managers and small business owners. Explore the skills, attitudes, and thinking patterns required to exceed customer expectations and build customer loyalty and a company competitive advantage. Develop the ability to lead and expand the customer service process, techniques for dealing with unhappy customers, build skills for analyzing customer needs and delivering service excellence. Create customer service excellence training materials for area business and non-profits.

## Office Systems/Technology

### **106-101 | Business Technology & Trends // 2 Credits**

This course provides students with exposure and/or experience in using a variety of technologies used in today's office. The content focuses on understanding these technologies and how they impact office employees.

### **106-120 | Business Technology Principles // 3 Credits**

Emphasis on understanding computer concepts, vocabulary, and the Windows operating system. Allows the student to explore different software applications of word processing, spreadsheet, database, and multimedia functions. Provides a solid foundation in using email, Internet Web browsing, and searching.

### **106-132 | Exploring Office Environments // 2 Credits**

This course introduces various aspects of administrative professional careers. Topics explored will include career expectations and responsibilities, employment opportunities, and career planning. Students will explore the role of Administrative Professionals in industries such as contact centers, educational institutions, government agencies, insurance companies, legal firms, manufacturing corporations, medical businesses and public safety organizations. Exploration of industries will take place during off-campus events and/or on-campus presentations.

### **106-140 | Office Procedures // 3 Credits**

This course provides an overview of general office skills and factors that influence work effectiveness. Students will gain knowledge in general office duties, management information systems, phone skills, process mail, records management, maintain inventory, arrange travel, bookkeeping, and financial reports and procedures. Students will determine factors that influence one's ability to work effectively and efficiently.

### **106-141 | Computer Applications-Legal // 3 Credits**

This course provides the opportunity for the learner to develop the knowledge, skills, processes, and understanding of various types of software used in the law office, including word processing, spreadsheet, calendaring, timekeeping, and billing software.

*Prerequisite(s): 110-101 Paralegal & Legal Ethic, Intro and 110-102 Civil Litigation I*

*Restricted to students admitted to the following program(s): 10-110-1*

### **106-142 | Business Spreadsheet Applic // 3 Credits**

As a student in this course, you will learn beginning to advanced features of Microsoft Excel including those assessed in the Core Microsoft Office Specialist exam. You will create, edit, and format various business spreadsheets. Topics will include formulas and functions, charts and graphics, multiple-sheet workbooks, PivotTables, PivotCharts, and database features.

### **106-146 | Quality Customer Service // 2 Credits**

This course will provide an overview of customer service. Students will learn how exceptional customer service contributes to the overall impact and success of a business. Communication techniques and problem-solving skills critical to providing quality customer service will be examined. Key concepts include understanding and avoiding barriers to good customer service, dealing with challenging customers, and retaining customers.

**106-149 | Expert Software Applications // 3 Credits**

Students will build on existing software skills to develop the expertise tested in the Microsoft Office Specialist expert exam for Word, Excel, and Access. Word topics include creating styles, templates, and macros; tables of contents, captions, and cross-references in multi-page documents; forms, charts, diagrams; and collaboration techniques. Excel topics include what-if analysis, pivot tables and macros; advanced logical and financial functions; collaboration techniques, and scenario manager. Access topics include advanced queries, forms, and reports; data access pages; and macros and switchboards.

*Prerequisite(s): 106-122 Document Processing and 106-181 Business Information Mgmt and (106-142 Business Spreadsheet Applic or 106-125 Spreadsheets 2)*

**106-154 | Integrated Software Applic // 2 Credits**

Students will have an opportunity to incorporate the features of Microsoft Word, Excel, Access, and PowerPoint to solve realistic, challenging business problems. Integration of current technology with effective business documents will allow students to expand communications beyond traditional administrative functions.

*Prerequisite(s): 106-122 Document Processing and 106-142 Business Spreadsheet Applic and 106-181 Business Information Mgmt and 106-164 Business Presentations & Publ or (106-139 Business Presentations and 106-107 Publications)*

**106-162 | Legal Terminology // 3 Credits**

Emphasis is placed on developing an understanding of legal terminology through the study of law itself and on using legal terminology in many different ways. Legal terminology covers general law terms as well as specialized legal terminology. A sound knowledge of terminology is the key foundation for anyone considering a career in the legal or business world.

**106-163 | Computer Success // 2 Credits**

This course is for individuals with little-to-no computer experience. Here students will have an opportunity to gain knowledge in basic computer operations, terminology, hardware, and software. An emphasis will be placed on file/document management. The course will also provide a foundation in using email and the internet.

**106-164 | Business Presentations & Publ // 3 Credits**

This course introduces design principles related to layout, graphics, and fonts. These principles will be applied in the development of effective print and digital business presentations and publications.

*Prerequisite(s): 103-102 Microsoft Office Suite*

**106-168 | Bus Support Prof Internship 2 // 1 Credits**

During this course students will put into practice, at a business site, knowledge and skills learned from courses in the associate degree program. This supervised internship allows students to experience a job situation that is related to the associate degree program and business support professional careers such as administrative professional and executive assistant.

*Prerequisite(s): 106-207 Applied Business Software*

**106-171 | Adv Software Applications // 3 Credits**

Students will continue their work in Office 2010 by utilizing the intermediate to advanced features of Word, Excel, and Access. Real world projects will allow students to apply these skills to actual business situations.

*Prerequisite(s): 103-102 Microsoft Office Suite*

**106-173 | Web Technologies // 3 Credits**

This course provides students with a basic understanding of various tools used to create web pages, wikis, and blogs. Other social and business web tools will be explored.

**106-174 | Business Software Solutions // 3 Credits**

Students will use previously learned software skills to successfully complete business-related problems and scenarios.  
*Prerequisite(s): 106-164 Business Presentations & Publ and 106-171 Adv Software Applications*

**106-181 | Business Information Mgmt // 3 Credits**

The goal of this course is to expose learners to electronic information management systems. As a student in this course, you will learn beginning to advanced features of Microsoft Access. The projects in this class will give students an opportunity to manage information in a simulated business environment.

**106-188 | Managing Office Finances // 3 Credits**

Students will learn fundamental accounting terminology and practices. They will analyze, document, and input business transactions in a manual and computerized accounting office environment.

**106-201 | Innovative Customer Service // 3 Credits**

This course enhances customer service skills by analyzing the customer service environment, evaluating communication techniques, and developing strategies for handling diverse and challenging customers. Learners incorporate AI tools to optimize customer interactions, explore AI-driven service recovery techniques, and apply advanced communication skills. Through these integrations, learners are prepared to deliver high-quality customer service in diverse professional settings.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-202 | Intro to the Smart Office // 3 Credits**

This course covers job search techniques, including researching business support careers, preparing application materials, and interview skills. Learners enhance office communication, scheduling, and task management using Microsoft Outlook. Essential skills like phone communication, mail processing, records management, and basic bookkeeping are developed. Additionally, AI tools are integrated to optimize job searches and office efficiency, equipping learners with practical skills to excel in business support roles.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-203 | AI Foundations for Business // 3 Credits**

This course introduces learners to the fundamentals of Artificial Intelligence (AI) in a business support environment. Core concepts include machine learning, natural language processing, and data analytics. Learners will examine the ethical considerations surrounding AI, including bias, privacy, and transparency, while learning to apply AI responsibly in an office environment. The course also covers the language and terminology of AI, equipping students with the foundational knowledge to navigate and communicate effectively.

**106-204 | Foundations of Bus Writing // 3 Credits**

This course develops learners into proficient communicators by building comprehensive skills in proofreading, grammar, and formatting. Learners apply these skills to analyze business documents, identifying and editing errors in grammar and word usage. By integrating AI-driven proofreading and editing tools, learners enhance their ability to critique and compose professional documents with accuracy and clarity.

**106-205 | Adv Software Applications // 3 Credits**

This course ingrates AI to equip learners with advanced skills in document processing, business presentations, and database management. Learners create forms, templates, and long documents, design professional presentations, and manage data efficiently. AI is used to optimize document creation, analyze presentations, and enhance data management. Through hands-on projects, learners gain the expertise needed to address professional challenges with precision and efficiency.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-206 | Digital Creativity: Pub & Tool // 3 Credits**

This course introduces essential design principles related to layout, graphics, and fonts, focusing on creating effective print and digital business publications. Learners gain hands-on experience using Adobe Acrobat to create, edit, review, and protect PDF files. The course also covers basic photo editing techniques and explores AI tools to enhance design efficiency and automate tasks, equipping learners with a comprehensive skill set for producing professional, AI-assisted publications.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-207 | Applied Business Software // 3 Credits**

This course builds on learners' existing software skills to develop the expertise needed by business support professionals for performing various office tasks. Learners apply software to complete business-related projects and scenarios, explore Google tools and their business applications, and incorporate AI to streamline processes and enhance productivity in office environments.

*Prerequisite(s): 106-205 Adv Software Applications*

**106-208 | Web Tech & Productivity Tools // 3 Credits**

This course provides learners with a foundational understanding of various web tools and their applications in business. Learners explore social and business web tools, along with essential tools used to create, design, and update web pages. The course also introduces AI-powered solutions and productivity apps that enhance efficiency and effectiveness in the business support profession, allowing learners to automate tasks and apply these tools to simulated business-related scenarios common in office environments.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-209 | Career Capstone Office Prof // 3 Credits**

This final course prepares learners for careers as business support professionals. They will create an AI-enhanced employment portfolio, assess their online presence, explore job offer strategies, and develop career plans. Learners will refine technical and soft skills, set goals, and improve office skills such as budgeting, travel planning, and meeting minutes using AI tools to boost efficiency.

*Prerequisite(s): 106-203 AI Foundations for Business*

**106-210 | Technology-Driven Records Mgmt // 3 Credits**

In this course, learners will explore records management by examining the systems, guidelines, and procedures used for managing both physical and electronic records. Learners incorporate AI tools to streamline record-keeping processes and improve data management efficiency. Learners will also enhance their problem-solving abilities using AI-powered solutions, problem-solving models, research, and technology.

*Prerequisite(s): 106-203 AI Foundations for Business*

## Paralegal

**110-101 | Paralegal & Legal Ethic, Intro // 3 Credits**

An introduction to the legal profession, the courts, legal ethics, legal terminology, research, and the role of paralegals.

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-102 | Civil Litigation I // 3 Credits**

The initial procedures associated with the preliminary stages of civil litigation, including pleadings, discovery, and motions.

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-103 | Civil Litigation II // 3 Credits**

This course demonstrates the substantive law, process and procedure, and typical recurring tasks relating the post-pleadings stages of civil litigation. These include evidence, discovery (depositions, interrogatories, physical and mental exams, requests for admissions) methods of case resolution (judgment, settlement, dismissal, and alternative disputes, and requests for admissions) methods of case resolution (judgment, settlement, dismissal, and alternative dispute resolution) trial practice, post-trial and post-judgment matters, and appellate procedure.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-106 English Composition or 801-136 English Composition 1 or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-104 | Legal Research // 3 Credits**

An application of legal research techniques, using traditional and computer-assisted resources.

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-105 | Legal Writing // 3 Credits**

An advanced writing course concentrating on legal correspondence, forms, memoranda, and briefs.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-106 English Composition or 801-136 English Composition 1 or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2, TC-110-1*

**110-106 | Family Law // 3 Credits**

Basic legal concepts in the area of family relations, including premarital agreements, parental rights, and divorce.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-106 English Composition or 801-136 English Composition 1 or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-107 | Legal Aspects of Bus Organiz // 3 Credits**

Legal aspects involved in the formation, operation, and dissolution of the principal types of business organizations.

*Prerequisite(s): 110-103 Civil Litigation II*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-110 | Real Estate Law // 3 Credits**

Drafting real estate descriptions, listing contracts, offers to purchase, deeds, land contracts, mortgages, foreclosure pleadings, transfer tax returns, and leases.

*Prerequisite(s): (110-102 Civil Litigation I and 110-104 Legal Research) and (801-136 English Composition 1 or 801-106 English Composition or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-111 | Insurance Law // 3 Credits**

Insurance Law is designed to provide students with a working knowledge of the law of insurance. The course will cover subject areas including the nature and function of insurance; the nature and function of first-party insurance such as automobile, life, health, and property insurance; and the design, interpretation and regulation of insurance contracts, particularly in regards to coverage disputes between policy holder and insurer.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-136 English Composition 1 or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-114 | Administration of Estates // 3 Credits**

Basic legal concepts of intestacy and testacy, including probate forms and procedures.

*Prerequisite(s): 110-103 Civil Litigation II or (min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-122 | Debtor and Creditor Relations // 3 Credits**

A review of legal issues involving debtors, creditors, and third parties.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-136 English Composition 1 or 801-106 English Composition or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-142 | Paralegal Internship // 3 Credits**

Students gain practical experience working in a legal environment under the supervision of an attorney or other qualified professional for a minimum of 144 hours. In addition, students meet one hour weekly to discuss legal office experiences and ethical considerations, learn effective job search techniques, and develop professional image.

*Prerequisite(s): 110-101 Paralegal & Legal Ethic, Intro and (110-114 Administration of Estates or 110-168 Criminal Law-Paralegal) and (110-103 Civil Litigation II and 110-105 Legal Writing)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-143 | Paralegal Field Study // 3 Credits**

Students engage in a field study of a specialty legal practice area in lieu of completing a paralegal internship. Students work with an advisor to identify an area of legal specialty study and to plan an appropriate field study. The field study includes reading textbooks and legal literature, interviewing practicing attorneys and paralegals working in the specialty area, and preparing a report and presentation.

*Prerequisite(s): 110-101 Paralegal & Legal Ethic, Intro and (110-114 Administration of Estates or 110-168 Criminal Law-Paralegal) and (110-103 Civil Litigation II and 110-105 Legal Writing)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-147 | Immigration Law // 3 Credits**

This course introduces the student to the basic law and legal concepts involved in the immigration and naturalization process. This includes entry of aliens into the United States and permanent residence based upon an offer of employment or family relationship. Additional areas of law discussed in this course will include problems individuals face with political asylum, deportation and exclusion.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-136 English Composition 1 or 801-106 English Composition or 801-219 English Composition 1) or (min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-160 | Employment Law // 3 Credits**

Analysis of federal and state laws governing employment relationships.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-136 English Composition 1 or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

**110-168 | Criminal Law-Paralegal // 3 Credits**

Analysis of federal and state laws governing employment relationships.

*Prerequisite(s): 110-103 Civil Litigation II or (min score of Y on BA or min score of Y on BS)*

*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

### **110-180 | Elder Law // 3 Credits**

Elder Law is an introduction to the topics in the law affecting older persons. Topics covered include family rights and responsibilities, health care decision-making, financing health care (Medicare, Medicaid); housing, guardianship and alternatives to guardianship, income maintenance (social security benefits, pensions, etc.), elder abuse and ethical issues in dealing with older clients.

*Prerequisite(s): 110-102 Civil Litigation I and 110-104 Legal Research and (801-136 English Composition 1 or 801-106 English Composition or 801-219 English Composition 1 or min score of Y on BA or min score of Y on BS)*  
*Restricted to students admitted to the following program(s): 10-110-1, 30-110-2*

## **Human Resources**

### **116-110 | Employee Benefits // 3 Credits**

In this course we will examine the wide range of employee benefit programs available today. We will study the types of benefits required by law, the discretionary benefits that employers may offer, the employee services available, and the ever dynamic retirement programs offered today. An emphasis will be on health insurance plans, cafeteria and wellness plans, and a functional approach to employee benefit planning. A course outcome will be evaluating and assessing a company sponsored benefit plan.

*Prerequisite(s): 116-193 Human Resources, Intro or 102-111 Human Resources, Intro to*

### **116-111 | Performance Mgt & Total Reward // 3 Credits**

The learner will develop skills to manage employee performance including coaching, disciplining, and evaluating employees. This course reviews employee rewards and compensation for determining employee wages, incentives, and benefits. Topics covered include job evaluation systems, strategic compensation plans, payroll, and individual and group incentive plans.

### **116-112 | Training & Development // 3 Credits**

This course provides an in-depth analysis of training and development in organizations. Students will examine organizational training strategy and trends, analyze the systematic approach to training (needs assessment, design and development, implementation, and evaluation), and explore employee development issues including onboarding, career development, and succession planning. Applying instructional design techniques and adult learning theories, students will develop training plans, create lesson plans, and present training sessions. Students will also create an individual targeted development plan.

### **116-113 | Human Resource Law // 3 Credits**

In this course you will learn legal principles affecting the management of human resources. The course addresses legalities in hiring, retention, and termination practices; discrimination issues; sexual and other forms of harassment; Americans with Disability Act compliance; leave of absence laws; wage hour laws; and labor relations matters, as well as other relevant employment-related legal issues. This course will help you proactively recognize legal problems and the impact of employment-related decisions on employees, managers, and the employer organization. An emphasis will be placed on general understanding of the major federal and state employment laws.

*Prerequisite(s): 116-193 Human Resources, Intro or 102-111 Human Resources, Intro to*

**116-114 | Recruitment & Selection // 3 Credits**

In this course we will learn the importance of human capital and its impact on organizational success. Recruiting and interviewing employees are critical for an employer's success. Topic areas covered include recruitment, selection, career development, legal issues associated with selecting employees, and roles in the selection process. An emphasis will be on strategies associated with selecting and developing of employees for organizational success. Students will be required to participate in mock interviews and networking opportunities.

*Prerequisite(s): 116-193 Human Resources, Intro or 102-111 Human Resources, Intro to*

**116-115 | Human Resources Capstone // 2 Credits**

Students will apply concepts learned in various human resources program courses to case studies and actual business situations (internship) to evidence their understanding of integration of human resources functions within organizations. Students will discuss importance of total rewards, analyze employee relations and leadership effectiveness, and practice key soft skills (conflict management, relationship building, and effective communication) related to Human Resources Program outcomes. Deliverables include both written work and demonstration through role plays. Students will also prepare a personal career development plan which will include a job search plan, a final resume, a sample cover letter, and a LinkedIn profile. Due to related content and discussion, this course must be taken concurrently with the Human Resources Internship (116-128).

*Prerequisite(s): 116-114 Recruitment & Selection and 116-116 Employee Relations or 116-127 Employee Relations and (116-110 Employee Benefits and 116-112 Training & Development and 116-113 Human Resource Law and 116-128 Human Resources Internship and 116-138 Safety, Security and Risk)*

**116-116 | Employee Relations // 3 Credits**

Today's workforce places high expectations on their Human Resource department from communication and advice on confidential matters to recommending specific benefit options. In addition, employers expect the Human Resource department to be highly professional and competent in good employee relations. As a result, this course covers the following topics; customer service techniques, professional etiquette, confidentiality requirements, different work cultures and generational attitudes, and career paths in the Human Resource field.

*Prerequisite(s): 116-193 Human Resources, Intro*

**116-128 | Human Resources Internship // 1 Credits**

This course culminates the Human Resources program with a minimum of 64 hours of HR work experience. Students put into practice previously learned concepts in the Human Resource field. Emphasis is placed on desirable interpersonal and professional work experience in the Human Resource field. Students are required to complete appropriate documents to ensure a successful work experience.

*Prerequisite(s): 116-114 Recruitment & Selection and 116-116 Employee Relations or 116-127 Employee Relations and (116-110 Employee Benefits and 116-112 Training & Development and 116-113 Human Resource Law and 116-138 Safety, Security and Risk)*

*Restricted to students admitted to the following program(s): 10-116-1*

**116-138 | Safety, Security and Risk // 3 Credits**

Human Resources is often responsible for assisting in the management of safety, health, and security risks in the workplace. In this course, students will learn skills necessary to identify and manage these workplace risks. Topics areas covered include: occupational injury and illness prevention and response programs (hazard analysis, OSHA compliance, and worker's compensation), policies and procedures to minimize loss and liability (workplace violence, substance abuse, and emergency preparedness), business continuity planning and privacy and data security issues.

### **116-193 | Human Resources, Intro // 3 Credits**

In this course, students will examine the role of human resources and goals of human resource management in today's organizations. Students will learn and apply skills related to the various functions within human resources management including equal employment opportunity and diversity, recruitment and selection, compensation and benefits, performance management, and labor relations. Student will explore the importance and impact of these human resource functions on the overall strategy of organizations.

## **International Trade**

### **138-150 | Global Business // 3 Credits**

Provides students with a basic understanding of the global economy and how companies do business in it. Areas of study include trends in world trade and investment, economic relationships among nations, international finance and currency exchange, government regulations and tariffs, communications and language barriers, and national customs.

## **Small Business**

### **145-103 | Entrepreneurial Ideas // 3 Credits**

In this course, students will generate ideas for entrepreneurial businesses, analyze market conditions, and determine the opportunities that exist for an entrepreneurial venture. Students will learn about lean startups and determine the product-market fit/viability of the business idea. Ideas in this course will be used and refined in the capstone course.

### **145-104 | Entrepreneurial Communication // 2 Credits**

In this course, students will develop the soft skills that are essential for entrepreneurs: networking, formal and informal presentations, professional business writing, and listening. Students will establish a mentor relationship which will be maintained for the remainder of the program. Students will identify local resources available for entrepreneurs. Ideas in this course will be used and refined in the capstone course.

### **145-106 | Entrepreneurial Management // 3 Credits**

In this course, students will learn leadership concepts and develop basic management/operational policies. Students will learn how to develop sound operational practices. Students will examine human resource functions such as hiring, managing, and motivating employees. Ideas in this course will be used and refined in the capstone course.

*Prerequisite(s): 145-103 Entrepreneurial Ideas*

### **145-108 | Entrepreneurial Marketing // 2 Credits**

In this course, students will gain insights essential for marketing an entrepreneurial venture utilizing innovative and financially responsible techniques. Students will analyze marketing strategies used by a variety of successful entrepreneurs. Ideas in this course will be used and refined in the capstone course.

*Prerequisite(s): 104-102 Marketing Principles and 145-103 Entrepreneurial Ideas*

### **145-109 | Entrepreneurial Capstone // 3 Credits**

In this course, students will compile knowledge of entrepreneurial program classes and will build a business plan. Students will develop plans for the marketing, management, operational, and financial sections of a business plan. Students will walk away with a ready-to-implement plan to launch their ventures.

*Prerequisite(s): 145-103 Entrepreneurial Ideas*

## IT - Networking & Systems Admin

### **150-102 | IT - Fundamentals // 2 Credits**

This course covers the knowledge and skills required to identify and explain the basics of computing, IT infrastructure, application and software, software development, database fundamentals and security.

### **150-103 | Emerging Technology in IT // 1 Credits**

Examine technological innovation with a focus on the latest trends in IT. Expand your awareness of emerging technologies that are shaping the future of networking and IT systems. Engage with cutting-edge tools and methodologies, analyze the impact of technological advancements on IT infrastructure, and prepare to meet the challenges of tomorrow's tech landscape. Develop a strategic understanding of how to leverage these technologies to drive organizational success.

### **150-105 | IT Career Prep // 2 Credits**

This course is specifically designed to aid learners in finding, obtaining, and keeping employment. Learners in this course will research current technologies, explore possible careers, develop job search materials, manage their online presence, practice interviewing skills, and examine negotiating strategies. Students will gain or improve these critical skills through discussions, research projects, written assignments, mock-interviews, guest speakers, roleplay, real-world scenarios, presentations, and industry tours.

### **150-110 | Help Desk and User Support // 1 Credits**

This course will provide an overview of the functions, services, and management of IT help desks. Learners shall explore a variety of topics including effective communication, model value-added end-user training sessions, troubleshooting techniques, issue tracking software, and help desk documentation. Learners will gain or improve upon the skills via discussions, research projects, written assignments, roleplay, and presentations.

### **150-111 | IT Software for Networking // 2 Credits**

This course provides hands-on training utilizing industry standard computer software to document network design, layout and architecture; to effectively manage an information technology project; and to manage the data critical to the management of information technology assets.

### **150-118 | Scripting // 2 Credits**

This course will introduce students to Linux/Unix and Windows shell scripts, Python and PowerShell scripting and how scripting is used for administration and management of network servers and clients. Students will learn to access file systems, data stores, the Windows registry as well as skills needed to install, manage and troubleshoot enterprise networks.

### **150-131 | Technical Support Fundamentals // 1 Credits**

In this course, learners are introduced to the world of information technology, or IT. Participants will learn about the different facets of IT, like computer hardware, the Internet, computer software, and job-related skills. They will also learn about the history of computers, and the pioneers who shaped the world of computing that we know today. This course covers a wide variety of topics, and it is designed to give an overview of what's to come in the Google IT Support Professional Certificate coursework. People who complete this course will be able to do the following: Understand how the binary system works; Assemble a computer from scratch; Choose an operating system and install it on a computer; Understand what the Internet is, how it works, and the impact it has in the modern world; Learn how applications are created and how they work inside computers; Utilize common problem-solving methods and soft skills in an IT setting.

### **150-132 | Virtualized Systems // 2 Credits**

This course will provide the learner with the skills necessary to install, configure, manage and troubleshoot enterprise OS and application virtualization and storage management using VMware server virtualization products including VMware vSphere, which consists of VMware ESXi/ESX and VMware vCenter Server.

*Prerequisite(s): 150-118 Scripting and 150-166 Microsoft Server 2 and 150-177 Linux 2*

### **150-133 | Bits/Bytes of Computer Network // 1 Credits**

This course is designed to provide a full overview of computer networking. It covers everything from the fundamentals of modern networking technologies and protocols to practical applications and network troubleshooting. People who complete this course will be able to do the following: Describe computer networks in terms of a five-layer model; Understand all of the standard protocols involved with TCP/IP communications; Grasp powerful network troubleshooting tools and techniques; Learn network services like DNS and DHCP that help make computer networks run.

*Prerequisite(s): 150-131 Technical Support Fundamentals*

### **150-135 | Become an OS Power User // 1 Credits**

In this course, participants will learn how to use Windows and Linux, two major operating systems that are core components of IT infrastructures. Through a combination of video lectures, demonstrations, and hands-on practice, students will become familiar with the main components of an operating system and how to perform critical tasks like managing software, managing users, and configuring hardware. People who complete this course will be able to do the following: Navigate the Windows and Linux file systems using a graphical user interface and a command line interpreter; Set up users, groups, and permissions for account access; Install, configure, and remove software on the Windows and Linux operating systems; Configure disk partitions and file systems; Understand how system processes work and how to manage them; Work with system logs and remote connection tools; Utilize their knowledge of operating systems to troubleshoot common issues in an IT support specialist role.

*Prerequisite(s): 150-131 Technical Support Fundamentals and 150-133 Bits/Bytes of Computer Network*

### **150-137 | System Admin/IT Infrastructure // 1 Credits**

This course will transition learners from working on one computer at a time to working with a whole fleet of computers. Systems administration is the field of IT that's responsible for maintaining reliable computer systems in multi-user environments. In this course, participants will learn about the infrastructure services that keep all organizations, big and small, up and running. Topics include how to manage and configure servers, and how to use industry tools to manage computers, user information, and user productivity. Finally, the course will explain how to recover an organization's IT infrastructure in the event of a disaster. People who complete this course will be able to do the following: Utilize best practices for choosing hardware, vendors, and services for an organization; Understand the most common infrastructure services that keep an organization running, how they work, and how to manage infrastructure servers; Manage an organization's computers and users using the Active Directory and OpenLDAP directory services; Choose and manage the tools that an organization will use; Back up an organization's data and recover IT infrastructure in the event of a disaster; Utilize systems administration knowledge to plan and improve processes for IT environments.

*Prerequisite(s): (150-131 Technical Support Fundamentals and 150-133 Bits/Bytes of Computer Network) and 150-135 Become an OS Power User*

### **150-139 | IT Security: Digital Defense // 1 Credits**

This course covers a wide variety of IT security concepts, tools, and best practices. It introduces threats and attacks and the many ways they can show up, and then discusses encryption algorithms and how they're used to safeguard data. From there, the course dives into the "three A's of information security"—authentication, authorization, and accounting. It also covers network security solutions, ranging from firewalls to Wi-Fi encryption options. The course then pulls the subject matter together with a look at how all of those elements can be incorporated into a multilayered, in-depth security architecture. It concludes with recommendations on how to foster a culture of security within a team or an entire organization. People who complete this course will understand the following: How various encryption algorithms and techniques work, and their benefits and limitations; Various authentication systems and types; The difference between authentication and authorization. At the end of this course, learners will be able to do the following: Evaluate potential risks and recommend ways to reduce risk; Make recommendations about how best to secure a network; Help others to understand security concepts and protect themselves.

*Prerequisite(s): 150-131 Technical Support Fundamentals and 150-133 Bits/Bytes of Computer Network and (150-135 Become an OS Power User and 150-137 System Admin/IT Infrastructure)*

### **150-140 | Virtualized Systems // 3 Credits**

This course will provide the learner with the skills necessary to install, configure, manage and troubleshoot enterprise OS and application virtualization and storage management using VMware server virtualization products including VMware vSphere, which consists of VMware ESXi/ESX and VMware vCenter Server.

*Prerequisite(s): 150-118 Scripting and 150-166 Microsoft Server 2 and 150-177 Linux 2*

### **150-143 | IT Essentials // 3 Credits**

This course addresses the fundamentals of personal computer (PC) workstations hardware systems and the integration of operating systems used by business and industry into those systems. Course topics include: integration, configuration, troubleshooting, and documentation of PC subsystems including motherboard architecture, form factors, power supplies, IDE devices and removable storage, system memory, multimedia devices, I/O devices, BIOS and boot process, and video/display fundamentals. Additionally, the integration, configuration, troubleshooting, and documentation of commonly used (current and legacy) operating systems, as they relate to system hardware, is explored.

### **150-150 | CCNA 1: Intro to Networks // 3 Credits**

This is the first of three courses that are aligned to the CCNA Certification Exam. It introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the following CCNA courses. By the end of this course, learners will be able to build simple local area networks (LAN), perform basic configurations for routers and switches, and implement IP addressing schemes.

*Restricted to students admitted to the following program(s): 10-150-2, TC-150-1, TC-150-2, TC-150-3*

### **150-151 | CCNA 2:Switch/Routing/Wire Ess // 3 Credits**

The second of three CCNA courses focuses on the technologies, functions, and configuration of switches and routers in support of small-to-medium business networks. The learner is also introduced to wireless local area networks (WLANs) and network security concepts. By the end of this course the learner will be able to configure mid-level functionality in routers and switches, apply basic network security measures, and perform basic troubleshooting of IPv4 and IPv6 network components.

*Prerequisite(s): 150-150 CCNA 1: Intro to Networks*

**150-153 | CCNA 3:Netwkg/Security/Automat // 3 Credits**

The final course aligned to the CCNA Certification Exam describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. This course covers wide area network (WAN) technologies, quality of service (QoS) mechanisms, network security, and introduces the concepts of software-defined networking, virtualization, and automation that support the digitalization of networks. Learners gain skills to configure and troubleshoot enterprise networks and learn to identify and protect against cybersecurity threats. Learners are also introduced to network management tools and learn key concepts of software-defined networking (SDN) including controller-based architectures and how application programming interfaces (APIs) enable network automation. By the end of this course learners will be able to configure, troubleshoot, and secure enterprise network devices. Learners who successfully complete this course are ready to prepare to take the CCNA Certification Exam.

*Prerequisite(s): 150-151 CCNA 2:Switch/Routing/Wire Ess*

**150-155 | Network Operations Mgmt // 2 Credits**

This course will build on the skills acquired in previous classes and will explore advanced topics such as Microsoft's System Center Configuration Manager (SCCM), Active Directory Domain Services, Internet Information Services, Windows Server Update Services, Windows Deployment Services and Microsoft SQL Services, software update deployment, end point protection, operating system deployment, compliance management, cloud computing and email services. Implementing group policies and administering SCCM and Exchange using PowerShell will also be covered.

*Prerequisite(s): 150-118 Scripting and 150-166 Microsoft Server 2 and 150-177 Linux 2*

**150-165 | Microsoft Server 1 // 2 Credits**

This course allows the learner to acquire necessary skills for supporting and configuring Windows Server including installation and configuration of an Active Directory Domain. Account administration, group policy management and core server roles and features are identified while preparing for MCSA Exam 70-410.

*Prerequisite(s): 154-111 Endpoint Management*

**150-166 | Microsoft Server 2 // 2 Credits**

This course allow the learner to acquire necessary skills for administering Windows Server environment including Active Directory management, Group Policy, backup and recovery, PowerShell remoting and infrastructure management, and security concepts while preparing for MCSA Exam 70-411.

*Prerequisite(s): 150-165 Microsoft Server 1*

**150-170 | IT Service Center // 2 Credits**

This course will provide the learner with practical application and competency in core computer hardware and operating system maintenance and support. Practical experience will be developed in the repair, configuration, upgrading, diagnostics, and preventative maintenance of consumer PC's. These functions will be performed in the program's internal Computer Service Center. Additionally, learners will perform the various administrative tasks associated with the Service Center's operation such as product workflow tracking, inventory control and pre and post repair customer support.

*Prerequisite(s): 150-143 IT Essentials*

**150-176 | Linux 1 // 2 Credits**

This course focuses on guiding the learner to develop a fundamental understand of Linux based Operating Systems (OS) and their primary components. Topics covered include: performing custom Linux installations; partition management; using GRUB to control boot behaviors and default targets; usage of common Command Line Interface (CLI) commands; user and group creation, file system navigation, architecture, and security; network customizations; package installers and managers; backup and recovery systems, and basic troubleshooting processes.

**150-177 | Linux 2 // 2 Credits**

This course focuses on guiding the learner to refine previously acquired Linux knowledge and use it to implement advanced Linux features, functions, and troubleshooting processes. Topics covered include: Process management; Common network services setup and configuration (DNS, DHCP, Firewall, etc.); Advanced partition management using LVM, alternate file system formats, implementations of RAID, quota management, as well as file system encryption; LDAP authentication; and local system security. Throughout all areas, troubleshooting, security, and recovery will be discussed. This course, along with Linux 1 and Scripting, prepares the learner with the knowledge to take the CompTIA Linux+ and the Linux Foundation's - Linux System Administration certifications.

*Prerequisite(s): 150-176 Linux 1*

**150-182 | Network Specialist Internship // 2 Credits**

The purpose of this course is for the learner to obtain real-world experience by working within an IT Department for a local business or organization. Students must first obtain permission from the Director of Network Specialist Internship before enrolling in this course. The Director will coordinate the student's internship with the IT Administrator/Manager of a local business or local organization. Compensation for the internship is to be negotiated between the student and the employer.

*Restricted to students admitted to the following program(s): 10-150-2*

**150-183 | Wireless Networking // 2 Credits**

This course is an introduction to wireless local area networks (WLANs). Students will develop, implement, and troubleshoot wireless networks. Students will acquire competencies in wireless technologies, security, and network design practices. Course topics include WLAN setup and troubleshooting. 802.11a, 802.11b, 802.11g, and 802.11n technologies, products and solutions, site surveys, resilient WLAN design, installation and configuration, WLAN security, and vendor interoperability strategies. The course will be delivered via a combination of lecture/discussion and hands-on application laboratory.

**150-184 | IT Security Fundamentals // 2 Credits**

This course will utilize a hands-on approach to teach students to design and implement network security solutions that will reduce the risk of revenue loss and vulnerability. Topics include overall security processes, security policy design and management, security technologies, products and solutions, firewall and secure router design, installation, configuration, and maintenance.

*Prerequisite(s): 150-153 CCNA 3:Netwkg/Security/Automat*

**150-185 | IT Networking Capstone // 2 Credits**

In the capstone course of the Information Technology Network Specialist Program, the student will demonstrate the collected knowledge, skills, and techniques acquired in the program of study through a variety of assessment methods. Students will demonstrate problem solving, critical thinking, research techniques, and technical writing. Information Technology ethics, professional responsibility, and team dynamics will be emphasized to help round out the student's education.

*Prerequisite(s): 150-118 Scripting and 150-153 CCNA 3:Netwkg/Security/Automat and 150-166 Microsoft Server 2 and 150-177 Linux 2*

## IT - Security

### **151-100 | Intro to Cybersecurity // 3 Credits**

This course introduces current cybersecurity threats, security responses and prevention strategies. Students will learn about cybersecurity standards, cybersecurity framework, and applications in multiple environments. Students will also learn about methods and techniques used to mitigate risks and vulnerability found in business environments.

*Restricted to students admitted to the following program(s): 11-151-1*

## IT - Software Development

### **152-101 | Programming Fundamentals // 3 Credits**

This course is designed to be a student's second programming course. It provides an in-depth look into fundamental computer programming concepts including: variables, input-processing-output, if- then-else logic, for loops, while loops, array processing, and functions. With an emphasis on hands-on activities, students use pseudocode and flow-charting tools to build problem-solving skills. Programming concepts and problem-solving skills are synergized and applied through the completion of a variety of programming exercises using the JavaScript programming language. The course will culminate with a Final Project lab.

*Prerequisite(s): 152-118 Intro to Computers & Programmng*

*Restricted to students admitted to the following program(s): 10-152-1, 10-152-8, 10-156-3, 30-107-1, 30-152-3, 30-152-4, 30-152-5, 30-152-9, 30-153-1, 30-154-6*

### **152-102 | IT - Software Dev Exploration // 1 Credits**

This is an introductory course that explores programming concepts, examines career possibilities for graduates of the Software Developer degree, and looks at current and future trends of the information technology industry.

### **152-103 | .NET Application Development // 3 Credits**

This course trains students in Microsoft's Visual Studio IDE and the .NET Framework. This course takes an in-depth look at the Visual Basic or C# language using SQL Server Compact for database interaction, develop subs and functions, and develop objects and classes. The course will culminate with a Final Project lab.

*Prerequisite(s): 152-101 Programming Fundamentals*

### **152-105 | .NET-ASP // 3 Credits**

This course is designed to explore the realm of ASP.NET, which is the Microsoft's Web application development tool for .NET. The student will interact with .NET's various frameworks; Web API, MVC, and Web Forms to develop interactive Web applications. The course will culminate with a Final Project lab.

*Prerequisite(s): 152-103 .NET Application Development*

### **152-106 | Computer Concepts // 2 Credits**

This course provides a strong foundation in computer concepts and operating systems directed at Programmer Analyst/Web Developer professionals. Through lecture, demonstration, and lab exercises, students learn operating system concepts, file management, various DOS commands, UNIX commands, and Windows. An online offering of this course is available.

*Restricted to students admitted to the following program(s): 10-152-1, 10-152-8*

**152-107 | Web 1-HTML & CSS // 3 Credits**

This course is designed to be a “first course” in web site development. Students work with a text editor and a browser to develop web pages from scratch using HTML and Cascading Style Sheets (CSS) to control color, layout, text, and images. Responsive design principles and accessibility standards are incorporated to ensure web sites are usable and professional-looking. Tables, forms, audio, and video components are included to add variety and pizzazz.

*Restricted to students admitted to the following program(s): 10-152-1, 10-152-8, 30-152-4, 30-152-5, 30-154-6*

**152-108 | Web 2 - Client Side // 3 Credits**

This course is designed for an in-depth study of creating dynamic web applications using client-side JavaScript and the latest JavaScript-based frameworks and libraries.

*Prerequisite(s): 152-101 Programming Fundamentals and 152-107 Web 1-HTML & CSS*

**152-112 | Business Intelligence // 3 Credits**

This course introduces students to the concepts of Business Intelligence (BI) with an emphasis on report development. Beginning with an overview of basic business practices, students develop an appreciation for the importance of good business decision-making strategies - and the information systems that can impact those strategies. As business intelligence concepts (report-writing, knowledge management, data warehouse, data mining, Olap) are investigated, students apply those concepts through hands-on activities with one or more industry-standard BI/reporting tools (SQL Server Reporting Tools and/or Crystal Reports).

*Prerequisite(s): 152-132 Database 1*

**152-114 | iOS Development // 3 Credits**

This course trains students to create simple iOS applications using the Xcode development tool. Students will start learning the basics of the Swift programming language and apply the Cocoa Touch and Foundation environments in creating simple iOS applications.

*Prerequisite(s): 152-142 Object Oriented Programming*

**152-116 | Professional iOS Development // 3 Credits**

Learn advanced iOS programming techniques including Core Data, Key-Value Observing, Gestures, and more. Participate in discussions, demonstrations, presentations, and projects to develop advanced iOS development skills. Explore issues surrounding performance and memory in iOS applications. Build advanced iOS applications that apply Cocoa Touch, Sprite Kit, Game Kit, Scene Kit, and other iOS technologies.

*Prerequisite(s): 152-115 Advanced iOS Development*

**152-118 | Intro to Computers & Programmng // 3 Credits**

Empower your future with computing! Explore the fundamental knowledge and skills you'll need for success in Information Technology. Learn to navigate operating systems like an ace, solve problems like a pro, and stay secure like a whiz. Plus, get a head start with programming concepts and JavaScript. Go ahead and open the door to exciting career opportunities.

**152-129 | Java Web Programming // 3 Credits**

This course trains students to develop Web applications using the Java programming language. The focus of the class is on the use of advanced Java features necessary for real world business applications. The class will review and extend knowledge of Java; namely, input/output, exception classes and packages, collections, JDBC, Servlets Java Server Pages, and MVC.

*Prerequisite(s): 152-142 Object Oriented Programming*

**152-132 | Database 1 // 3 Credits**

This course is designed as a first database course, this course introduces students to the concepts of relational database management and beginning SQL. Students explore the history and evolution of databases and investigate current database usage in industry. This relational model is examined and utilized as students' practice creating, populating, manipulating, and querying multi-table relational databases using the SQLite database.

*Restricted to students admitted to the following program(s): 10-152-1, 10-156-3, 10-182-1, 30-152-2, 30-152-5, TC-152-11, TC-530-6*

**152-133 | Visual Basic.NET, Intro to // 1 Credits**

Develop visual basic programs by creating the user interface (a window), setting properties, and writing the program code. Programs will involve forms, controls, menus, dialogs, and drop-and-drag events. Some programming experience helpful.

**152-136 | Database 2 // 3 Credits**

This course provides a more in-depth study of SQL (Structured Query Language) and introduces database design. Students practice with database design methodologies, tools, and techniques via hands-on activities covering SQL, data normalization, Entity-Relationship Diagrams, and relational data modeling. Tools like Dia and MySQL are used to give students practical experience with the creation, documentation, and testing of relational databases.

*Prerequisite(s): 152-132 Database 1*

**152-140 | Python Programming // 3 Credits**

SQL and other ETL techniques are effective for most data conversions but sometimes you need the functionality of a programming language to loop through data to effectively populate a database table. In this course you will learn the basics of the Python programming language with an emphasis on the database and reporting capabilities of the language.

*Prerequisite(s): 152-101 Programming Fundamentals and 152-136 Database 2*

**152-142 | Object Oriented Programming // 3 Credits**

This course is designed for an in-depth study of object-oriented programming using Java. Students will learn the fundamental principles of modularity and abstraction. Basic programming skills, such as decision-making, looping, string manipulation, and arrays are expected to be used throughout the course. The second half of the course explores advanced topics, such as inheritance, polymorphism, and data structures.

*Prerequisite(s): 152-101 Programming Fundamentals*

**152-143 | InformationTechnology Capstone // 2 Credits**

This course brings skills learned in previous IT Programmer/Analyst courses together in a team-based business environment. Student teams will work through the life-cycle of a programming application project that covers requirements gathering through the production phase. Students will bring various technologies together to complete their applications in an efficient manner.

*Prerequisite(s): 152-132 Database 1 and (152-105 .NET-ASP or 152-142 Object Oriented Programming or 152-164 Web 4 - Server-Side)*

**152-151 | Android Development // 3 Credits**

This course trains students to develop mobile applications on the Android mobile platform. This course will provide an overview of the mobile application landscape and will then quickly focus on one of the latest mobile technologies to develop the applications themselves. Participate in discussions, demonstrations, presentations, and projects to develop Android development skills.

*Prerequisite(s): 152-129 Java Web Programming*

**152-159 | Web 3 - Interactive Media // 3 Credits**

This course trains students in the creation animation for the Web using HTML 5's Canvas element, CSS3, and JavaScript. The jQuery library will be explored to create dynamic Web content and animation of Web page components.

*Prerequisite(s): 152-108 Web 2 - Client Side*

**152-160 | Object-Oriented C Programming // 3 Credits**

Provides an introduction to computer programming logic using the C-based Object Oriented Programming language. This course will give the student a basic understanding of problem-solving skills using a computer programming language. Practical experience with programming concepts will be gained through demonstration and hands-on lab exercises with input/output, data types, arrays, and control structures.

*Prerequisite(s): 152-101 Programming Fundamentals*

**152-161 | 3D Simulation Development // 3 Credits**

An introductory course to developing games and simulations using a top tier game engine. This course will cover the creation of a full game from environment, to assets, scripting behaviors and interacting with world objects. Throughout this process the underlying theme re-enforces programming skills, logic, and problem solving to create interactive worlds. Basic multi-threading concepts will also be utilized to handle asynchronous events.

*Prerequisite(s): 152-142 Object Oriented Programming*

**152-164 | Web 4 - Server-Side // 3 Credits**

This course trains students in server-side web development using PHP. The learner will get hands-on experience in the PHP environment with database applications using PHP, a relational database, sessions, cookies, string-handling, and other related topics.

*Prerequisite(s): 152-108 Web 2 - Client Side and 152-132 Database 1*

**152-166 | IT Developer Capstone // 3 Credits**

This course culminates and assesses the students experience in the Information Technology – Software Developer program. This advanced course provides further hands-on experience in application development. Students will work in small groups to create an application. Students will be required to use project management techniques during the development process.

*Prerequisite(s): 152-169 Software Quality Control*

*Restricted to students admitted to the following program(s): 10-152-1, 10-152-8, TC-152-13*

**152-168 | Mobile Web Applications // 3 Credits**

This course will continue to build on the skills practiced in the Web Multimedia course. This course will focus on creating more powerful and entertaining web applications as well as design and development of mobile web applications using HTML 5, CSS3, and jQuery.

*Prerequisite(s): 152-159 Web 3 - Interactive Media*

**152-169 | Software Quality Control // 3 Credits**

This course trains students in software quality control. Software quality control is the set of procedures used by organizations to ensure that a software product will meet its quality goals at the best value to the customer, and to continually improve the organization's ability to produce software products in the future.

*Prerequisite(s): 152-142 Object Oriented Programming*

**152-171 | Data Structures // 3 Credits**

This course trains students to use computer programming data structures. Most software applications are connected to a database; manipulating data is an important aspect of software development. The course will offer hands-on practice with various data structures within a popular programming language.

*Prerequisite(s): 152-142 Object Oriented Programming*

## IT - Computer Support

### **154-110 | Research & Troubleshooting // 2 Credits**

Provides instruction to IT Service Desk Technician Research and Troubleshooting skills. Students perform research and troubleshooting skills, investigate Service Desk operations, create a support utility kit, correct information and mistakes.

### **154-111 | Endpoint Management // 3 Credits**

Learn knowledge and skills to install, configure and support end-user devices, client operating systems, and software. Develop skills needed to connect various computing devices to networks, perform basic cybersecurity mitigations, troubleshoot common problems to identify, diagnose and resolve issues. Demonstrate basic understanding of scripting, the cloud, virtualization, and security. The course prepares students to take the CompTIA A+ Core 2 certification.

### **154-112 | IT Service Management // 2 Credits**

This course will introduce the learner to best practices for IT service management with focus on customer communication, supporting IT environments, communication between different departments in an enterprise environment, and proper documentation techniques.

### **154-113 | Documentation // 1 Credits**

Provides instruction to IT Service Desk Technician Documentation skills. Students perform communication and documentation skills related to incorporating information sources, writing procedures, maintaining a knowledge base, preparing reports, presenting oral reports, and developing ticketing skills.

### **154-114 | Professional Skills // 1 Credits**

Provides instruction to IT Service Desk Technician professional skills. Students will develop customer service skills, manage difficult customers, develop professional business skills, work with teams, minimize effects of stressful situations, develop time management skills.

## IT - Data

### **156-101 | Systems Analysis and Design // 3 Credits**

Systems Analysis and Design is a broad term for describing methodologies for developing high quality Information System which combines Information Technology, people, and data to support business requirement. In this course you will learn the system development life cycle.

### **156-102 | Python Data Programming // 3 Credits**

SQL and other ETL techniques are effective for most data conversions but sometimes you need the functionality of a programming language to loop through data to effectively populate a database table. In this course you will learn the basics of the Python programming language with an emphasis on the database and reporting capabilities of the language.

*Prerequisite(s): 152-101 Programming Fundamentals and 152-136 Database 2*

### **156-103 | BI Data 1-Paginated // 3 Credits**

Presenting useful information from a system's database is at the heart of any Information System. In this course you will learn the basics of report writing utilizing SQL and a reporting application.

*Prerequisite(s): 152-132 Database 1*

### **156-104 | Beginners Guide-Data Analyst // 3 Credits**

Unlock your inner data explorer with the Beginners Guide to Data Analyst! This course prepares you with the essentials in computer and file management skills. We'll then chart your path towards a data analyst career, introducing you to the key tools you'll need to conquer information challenges. Throughout this exciting journey, you'll develop the problem-solving mentality of a true adventurer, learning to navigate the digital landscape safely. And to truly crack the code we'll introduce you to Python, a powerful programming language that will lead you to new depths of understanding. Get ready to transform raw data into groundbreaking discoveries!

### **156-105 | Python 1-Fundamentals // 3 Credits**

Ready to chisel your way into the world of computer coding? Python 1 - Fundamentals is your pickaxe, the perfect tool to build a solid foundation for your programming journey. This course is specifically designed as your first step into the exciting world of computer programming for data analysis.

Imagine yourself as a skilled stonemason. Every grand structure starts with a firm base, and your programming knowledge is no different! We'll introduce you to the essential building blocks of programming, like the flow of information (input/output), decision-making logic (if-then-else), and the power of loops (for and while) to automate tasks. You'll also explore how to handle and organize data using arrays.

By the end of this course, you'll have a rock-solid foundation in place. You'll be comfortable with essential programming concepts and possess the problem-solving skills necessary to embark on your Python programming adventure with confidence! Python 1 - Fundamentals — Your coding journey begins on solid ground!

*Prerequisite(s): 156-104 Beginners Guide-Data Analyst*

### **156-106 | BI Data 2-Interactive // 3 Credits**

Online analytical processing, or OLAP, is an approach to answer multi-dimensional analytical (MDA) queries swiftly in computing. OLAP is part of the broader category of business intelligence, which also encompasses relational databases, report writing and data mining. In this course you will be introduced to an OLAP reporting application.

*Prerequisite(s): 156-103 BI Data 1-Paginated*

### **156-107 | Python 2-Data Essentials // 3 Credits**

Ready to take your Python skills to the next level? Python 2 - Data Essentials is the mortar that binds the bricks, helping you construct a robust foundation for data analysis in Python. This course builds upon your existing knowledge from Python 1 - Fundamentals.

Imagine yourself as a master architect. You've laid the foundation, now it's time to build the magnificent data castle of your dreams! Here, we'll introduce you to the essential building blocks of data manipulation in Python, the tools that will transform you from a coder into a Data Analyst.

Think of functions and lists as your sturdy bricks. We'll show you how to create and utilize functions to organize your code and make it reusable. Lists will become your data containers, allowing you to store and organize information efficiently. File I/O is the drawbridge of your castle. You'll learn how to securely import and export data from external files, ensuring your information is accessible and can be shared with others.

Classes and objects act as the fortified towers of your data castle. We'll delve into these powerful concepts, enabling you to create blueprints for complex data structures and objects that represent real-world information. But a castle isn't complete without the great Hall inside the castle walls, a place to store your vast treasures of data! This course utilizes SQLite databases, the cornerstone upon which you can build and store massive datasets.

Finally, we'll crown your castle with data analysis! You'll explore Python data libraries, powerful tools that help you analyze and interpret the information stored within your data castle walls. By the end of this course, you'll be well on your way to generating insightful reports and transforming raw data into valuable knowledge. Python 2 - Data Essentials — Build your data analysis expertise, brick by brick!

*Prerequisite(s): 156-105 Python 1-Fundamentals and (152-132 Database 1)*

### **156-108 | Artificial Intelligence Reveal // 3 Credits**

Blast off on a mission to understand Artificial Intelligence, AI! This introductory course offers you the knowledge to navigate the exciting world of intelligent machines.

Imagine yourself as a pioneering astronaut. We'll be your mission control, guiding you through the core concepts of AI. You'll learn how these machines learn and evolve, decoding the secrets of natural language processing (how machines understand us) and prompt writing (how we give them instructions).

As you explore further, you'll discover the cutting-edge tools that power AI, the rocket engines that propel these intelligent systems. Our journey then takes us to the docking station of Data Analytics, where you'll witness how AI can analyze vast amounts of information at warp speed, uncovering hidden patterns that revolutionize industries.

By the end of this course, you'll be a seasoned A.I. voyager! You'll possess the knowledge to navigate conversations about AI, understand its applications across various fields, and be prepared to chart your own course in this ever-evolving frontier. Artificial Intelligence Reveal: Your mission to A.I. starts now!

### **156-109 | Introductory ETL // 3 Credits**

Extract, Transform, and Load is an essential technique for moving data between computer systems. In this course you will learn various techniques to move and integrate data between systems and databases.

*Prerequisite(s): 152-136 Database 2 and 103-170 Microsoft Excel*

### **156-110 | Data Analyst Toolbox // 3 Credits**

The Data Analyst Toolbox isn't just a course – it's your personal workshop for filling a formidable data analysis toolbox! This course prepares you with the essential tools to conquer any information challenge, expanding the breadth of your data analyst skillset and making your resume shine. Think of your data analysis journey as a well-stocked workbench. Here, you'll meticulously curate your toolkit by mastering several of the most sought-after technologies in the field. We've handpicked a selection of powerful tools to ensure you graduate with a well-rounded skillset, ready to tackle any data puzzle that comes your way.

*Prerequisite(s): 152-132 Database 1 and 156-103 BI Data 1-Paginated*

### **156-115 | BI Data 3-Visualization // 3 Credits**

Business intelligence (BI) comprises the strategies and technologies used by enterprises for the data analysis of business information. BI technologies provide historical, current, and predictive views of business operations. Visualizations are often incorporated into executive dashboards for optimal business decisions. In this course you will be exposed to elements of Business Intelligence emphasizing visualizations.

*Prerequisite(s): 156-106 BI Data 2-Interactive*

### **156-119 | Machine Learning // 3 Credits**

Machine learning (ML) is the study of computer algorithms that can improve automatically through experience and by the use of data. It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as training data, in order to make predictions or decisions without being explicitly programmed to do so. In this course you will be exposed to introductory techniques of machine learning to analyze data.

*Prerequisite(s): 156-107 Python 2-Data Essentials and 156-108 Artificial Intelligence Reveal*

### **156-123 | Data Security and Privacy // 3 Credits**

Data Security and Privacy is the protection of personal data from those who should not have access to it and the ability of individuals to determine who can access their personal information. In this course you will explore the various data privacy laws and techniques to security an organizations data.

*Prerequisite(s): 156-103 BI Data 1-Paginated*

### **156-130 | Data Analyst Capstone // 3 Credits**

The Data Analytics Capstone culminates and assesses the students experience in the Information Technology – Data Specialist program. This advanced course provides further hands-on experience in business intelligence. Students will work in small groups to create a database with supporting reporting objects. Students will be required to use project management techniques during the development process.

*Prerequisite(s): (156-106 BI Data 2-Interactive and 156-109 Introductory ETL) and 156-115 BI Data 3-Visualization*

## **Logistics & Materials Mgmt**

### **182-105 | Intro to Supply Chain Mgmt // 1 Credits**

Students will investigate career options and learn related job skills, salaries, and employment trends in the supply chain management field. Students will practice job seeking skills as they research a particular job and company. Students will develop a cover letter, resume, and a follow-up letter. Common interviewing and communication skills required for the supply chain management professional will also be addressed.

### **182-120 | Fundamentals of Supply Chain // 3 Credits**

Students will gain a foundation in the basic concepts of managing a supply chain including the planning and control of materials into, thru, and out of an organization. Students will practice skills in activities based on functional areas such as demand management, sourcing and procurement, production planning and conversion of raw materials into finished goods, inventory management, warehousing, and transportation including delivery to end customers.

### **182-130 | Princ of Distrib & Logistics // 3 Credits**

Students will gain a foundation in the basic concepts of planning and control in distribution and logistics. Students will examine topics such as designing supply and distribution channels, activities of warehousing and transportation. Students will complete an in-depth evaluation of transportation management. Global transportation, transportation services, forward and reverse logistics, and related technology will also be addressed.

**182-140 | Advanced Operations Planning // 3 Credits**

Provides a fundamental knowledge and understanding of inventory planning principles and techniques that are used at each level in the planning process, from strategic to tactical. The course provides practical examples and exercises, giving participants an opportunity to practice and enhance their own planning skills and execute strategies to meet the needs of the customer.

**182-142 | Princ of Inventory Mgmt // 3 Credits**

Students will develop an understanding of the role of inventory within the supply chain. Students will apply decision making skills and complete activities on topics including inventory control, performance measurements, inventory flow, physical inventory management, and warehouse and distribution center management. Students will also explore related technology and integrated forecasting, planning, scheduling, and transportation topics.

**182-144 | Enterprise Resource Management // 2 Credits**

Students will learn about the application of data and other sources of information collected to assist in decision making process in the supply chain system. Students will identify how software can be used to improve the supply chain in order to generate efficiency in the process. Students will also identify the positives and negatives of an Enterprise Resource Planning system.

**182-145 | Enterprise Resource Management // 3 Credits**

Students will learn about the application of data and other sources of information collected to assist in decision making process in the supply chain system. Students will identify how software can be used to improve the supply chain to generate efficiency in the process. Students will also identify the positives and negatives of an Enterprise Resource Planning system. Students will gain practical hands-on experience of material planning, forecasting, and master planning with industry software tools.

*Restricted to students admitted to the following program(s): 10-182-1*

**182-146 | Supply Chain Internship // 2 Credits**

Students will obtain practical, hands-on experience while applying skills developed in the Supply Chain Management program at an approved site with employer and instructor supervision. Professional behavior, good communication, and positive interpersonal skills will also be demonstrated. Students must have approval from the instructor to enroll in this course.

## Graphic Arts

**201-101 | Drawing & Illustration Concept // 3 Credits**

Drawing and Illustration Concept is designed to help give the designers the basic concept and perspective of drawing before digital. The students will learn the fundamentals of drawing, typography drawing, sketching human forms, layout design, and other essential assets needed to help further their skills as designers.

*Prerequisite(s): 201-111 Graphic Design Foundation*

*Restricted to students admitted to the following program(s): 10-201-1*

**201-102 | Digital Illustration // 3 Credits**

This course addresses the concepts and techniques of creating illustrations and images graphical compositions for use in print and digital applications utilizing current industry standard drawing software. Develop knowledge and skills using Adobe Illustrator. Course content covers creating basic shapes, drawing, transforming elements, working with type, blending, layers, special effects and applying color techniques using industry standards.

*Prerequisite(s): 201-101 Drawing & Illustration Concept and 201-104 Photoshop Fundamentals*

**201-103 | Publication Design // 3 Credits**

This is a course in the use of the page layout software InDesign. The student will learn to utilize basic tools and key commands, place text and images, apply typographical formats, use text styles, manipulate tabs, and control design elements to create various publication designs. Design principles and process specific to publications will be emphasized. Creative assignments range from newsletters, magazines, and books to electronic publications.

*Prerequisite(s): 201-105 Typography Fundamentals and 201-211*

**201-104 | Photoshop Fundamentals // 3 Credits**

This course teaches photo manipulation and enhancement using the industry leading Adobe Photoshop software. Course will also cover composition images, illustration, color correction, file formats, scanning, importing into page layout documents, fixing damaged photos, understanding file size, resolution and quality and choosing correct color modes. This course will also cover content related to storing and organizing files.

*Restricted to students admitted to the following program(s): 10-201-1*

**201-105 | Typography Fundamentals // 3 Credits**

Typography Fundamentals is a course to help the learners and designers understand the principals and importance of typography. The students will learn more about the drawing and perspective art of typography, the terminology, history, digital form, and other aspects that are crucial to the design aspects of artistic and digital typography.

*Restricted to students admitted to the following program(s): 10-201-1*

**201-106 | Graphic Design Project Mgmt // 3 Credits**

This class covers general business practices, work-flow and advance production techniques in the design field through applied projects. Collaboration is emphasized where teams apply business practice in developing a product from concept to actual launch. Students will work through the process of preparing files for a variety of media channels.

*Prerequisite(s): 201-102 Digital Illustration and 201-103 Publication Design and 201-104*

*Photoshop Fundamentals*

**201-107 | Motion Graphics // 3 Credits**

Motion Graphics is an introduction to the basic principles of animation for the creation of compelling graphics. The course covers advanced workflows using Adobe products to create motion graphics for a variety of media platforms. By the end of the course, students will have developed skills to bring their creative visions to life through animation.

*Prerequisite(s): 201-102 Digital Illustration and 201-104 Photoshop Fundamentals*

**201-108 | Graphic Design Capstone // 3 Credits**

Integrated Campaign Design is a capstone course where students prepared graphic design elements in traditional and digital formats. The course will help the students develop the skills to work with clients, complete deadlines, and other vital assets needed in the graphic design field.

*Prerequisite(s): 201-101 Drawing & Illustration Concept and 201-106 Graphic Design Project Mgmt and 201-107 Motion Graphics and 201-110 Print Production and 203-102 Design Photography and 201-211 and 699-115 Editing and Proofreading*

*Restricted to students admitted to the following program(s): 10-201-1*

**201-109 | Graphic Design Portfolio // 3 Credits**

Graphic Design Portfolio will be the course the students will gather all their materials throughout the program and prepare to have their graphic design materials showcased for future employers. The student's work will be evaluated by fellow instructors and others in the marketing and graphic design fields to prepare them for graduation.

*Prerequisite(s): 201-101 Drawing & Illustration Concept and 201-106 Graphic Design Project Mgmt and 201-107 Motion Graphics and 201-110 Print Production and 203-102 Design Photography and 201-211 and 699-115 Editing and Proofreading*

*Restricted to students admitted to the following program(s): 10-201-1*

### **201-110 | Print Production // 3 Credits**

Practical training in production of digital composition. The student learns to solve realistic print and digital design problems from rough layout through production by completing a variety of increasingly complex assignments. Develop knowledge of the digital printing process, apply skills to full production level projects and challenges. Course content covers color management, automated workflows, cost estimating, troubleshooting and production scheduling.

*Prerequisite(s): 201-102 Digital Illustration and 201-103 Publication Design and 201-104 Photoshop Fundamentals and 201-105 Typography Fundamentals*

### **201-111 | Graphic Design Foundation // 3 Credits**

In the Graphic Design Foundation Course, students will delve into history of graphic design and explore fundamental design elements such as line, shape, space, color, and texture through hands-on explorations and creative exercises. The course will provide a strong foundation in design principles and theories, including exploration of grid systems, page layouts, and composition techniques tailored for diverse design mediums. Introduction to Adobe Creative Suite programs.

*Restricted to students admitted to the following program(s): 10-201-1*

## **Photography**

### **203-102 | Design Photography // 3 Credits**

Photography will be implemented into the curriculum to show and help students understand the importance photography is to design. Design Photography will introduce perspective, lighting, features of all cameras, Adobe Photoshop basics, and other assets of photography needs.

## **Early Childhood Educ**

### **307-108 | ECE: Early Language & Literacy // 3 Credits**

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 and 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.

*Prerequisite(s): 307-160 ECE: Field Experience 1*

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

### **307-110 | ECE: Soc S, Art, & Music // 3 Credits**

This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM).

*Prerequisite(s): 307-160 ECE: Field Experience 1*

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

### **307-112 | ECE: STEM // 3 Credits**

This 3-credit course will focus on beginning level curriculum development in the specific integrated content areas of science, technology, engineering and mathematics.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 20-800-2, 31-307-1*

**307-148 | ECE: Foundations of ECE // 3 Credits**

This 3-credit course introduces you to the early childhood profession. Course competencies include: explore the concepts of diversity, cultural responsiveness, and anti-bias as it relates to early childhood education, investigate the history of early childhood education, examine regulatory requirements for early childhood education programs in WI, 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 and examine the critical role of play as it relates to developmentally appropriate practice.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 20-800-2, 31-307-1*

**307-151 | ECE: Infant & Toddler Dev // 3 Credits**

In this 3-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, cultural responsiveness, and anti-bias perspectives; analyze development of infants and toddlers (conception to thirty-six months); 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 thirty-six months); examine caregiving routines as curriculum; and examine developmental and environmental assessment strategies for infants and toddlers.

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

**307-160 | ECE: Field Experience 1 // 3 Credits**

This introductory field experience course, introduces the foundations of early childhood education under guided supervision of a mentor teacher in an early childhood setting, working with children birth through age 8. This course meets the requirements for the Wisconsin Model Early Learning Standards 18-hour training.

*Corequisite(s): 307-167 ECE: Hlth Safety & Nutrition*

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

**307-167 | ECE: Hlth Safety & Nutrition // 3 Credits**

This 3-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, cultural responsiveness, and anti-bias perspectives; examine 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 issues and mandates; describe Sudden Infant Death Syndrome (SIDS) risk reduction strategies, describe strategies to prevent the occurrence of Shaken Baby Syndrome (SBS); incorporate health, safety, and nutrition concepts into the children's curriculum.

*Corequisite(s): 307-160 ECE: Field Experience 1*

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

**307-170 | ECE: Field Experience 2 // 3 Credits**

This intermediate field experience course includes assisting the mentor teacher in carrying out classroom routines and implementing developmentally appropriate learning experiences that promote child development and learning through play for children birth to age 8.

*Prerequisite(s): 307-160 ECE: Field Experience 1*

*Restricted to students admitted to the following program(s): 10-307-1, 31-307-1*

**307-179 | ECE: Child Development // 3 Credits**

This 3-credit course examines child development within the context of the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze social, cultural, and economic influences on child development; summarize child development theories; analyze development of children ages three through five; analyze development of children ages five through eight; relate child development research findings to teaching practice; analyze the role of heredity and the environment; examine the role of brain development in early learning (ages 3-8); examine developmental and environmental assessment strategies for children ages 3-8.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-2, 31-307-1*

**307-187 | ECE: Children w Diff Abilities // 3 Credits**

This 3-credit course focuses on the child with differing abilities in an early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; promote inclusive programs for young children; apply legal and ethical requirements including, but not limited to, ADA and IDEA; examine 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; identify community and professional resources; interpret an individual educational plan (IEP/IFSP) for children with developmental differences; adapt curriculum to meet the needs of children with developmental differences; examine strategies for cultivating partnerships with families who have children with developmental differences.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 20-800-2, 31-307-1, TC-307-3*

**307-188 | ECE: Guiding Child Behavior // 3 Credits**

This 3-credit course examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze techniques for and effects of strong relationship-building with children and families; identify positive and proactive guidance principles and techniques to support children; analyze environmental influences on child behavior; identify strategies that support children's active engagement in the learning environment; identify strategies that proactively teach emotional literacy and regulation techniques; identify strategies that proactively teach friendship skills; identify strategies that proactively teach children calming, relaxation, and problem-solving techniques; utilize observation and assessment techniques to assess and interpret behavior; create a behavior support plan based on a functional behavior assessment; create a guidance philosophy. This course meets the requirements of the "24 hour Wisconsin" Pyramid Model training.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 20-800-2, 31-307-1*

**307-190 | ECE: Field Experience 3 // 3 Credits**

This advanced field experience course focuses on supporting young children's development birth to age 8 through observation, assessment, and implementation of developmentally appropriate teaching strategies.

*Prerequisite(s): 307-170 ECE: Field Experience 2*

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 31-307-1*

### **307-195 | ECE: Family & Community Rel // 3 Credits**

In this 3-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, cultural responsiveness, and anti-bias perspectives when working with families and community; analyze contemporary family patterns and trends; identify strategies to strengthen and support families; explore effective communication strategies; discover strategies for developing respectful and reciprocal relationships with families; analyze strategies to promote family engagement in early childhood education programs; explore a variety of formats for meeting with families in their contexts; advocate for children and families; and explore community resources that provide a range of services for children and families.

*Restricted to students admitted to the following program(s): 10-307-1, 20-800-1, 20-800-2, 31-307-1*

### **307-210 | ECE: Field Experience 4 // 3 Credits**

This final pre-professional field experience course focuses on demonstrating a comprehensive understanding of children birth to age 8, and families. An emphasis is on practicing the lead teacher role to design, implement and evaluate a connected unit of learning experiences.

*Prerequisite(s): 307-190 ECE: Field Experience 3*

*Restricted to students admitted to the following program(s): 10-307-1*

## **Baking**

### **314-100 | Intro to Baking & Pastry // 5 Credits**

This introductory course covers the basic theory and fundamental skills used throughout the professional bakeshop and the production of high quality products. Topics covered include the use of hand tools and equipment found in a bakeshop, as well as the exploration of baking and pastry ingredients and their functions. Students will explore and practice fundamental techniques such as creaming, blending, foaming, meringues, pre-cooked, cut-in, lamination, straight dough, custards, frozen desserts, chocolates, and sauces with an emphasis on fundamental production techniques. Students will also taste, evaluate, and present their products in class and through retail production.

### **314-103 | Advanced Baking and Pastry // 5 Credits**

This advanced-level course is designed for students seeking to refine and expand their skills in the art and science of baking and pastry. Building on foundational knowledge, students will explore complex techniques in artisan bread-making, pastry design, and advanced dessert creation. The course emphasizes precision, creativity, and innovation, with a focus on producing high-quality, visually stunning baked goods for professional culinary settings. Students will work with a variety of ingredients, tools, and methods, from advanced dough laminations and delicate plated desserts to modern techniques such as molecular gastronomy and sugar artistry. The course includes both hands-on production and theoretical components, covering topics such as ingredient functionality, recipe development, and troubleshooting. Through comprehensive projects, students will be challenged to create sophisticated, multi-component pastries, cakes, and confections while mastering the art of presentation and garnishing. Graduates will be prepared for leadership roles in high-end bakeries, patisseries, and fine dining restaurants, equipped with the expertise to innovate and elevate the culinary experience.

*Prerequisite(s): 314-100 Intro to Baking & Pastry and 316-105 Food Safety & Sanitation*

## Culinary Arts

### **316-101 | Food Theory // 3 Credits**

Food science principles applied to professional culinary food preparation. Units include professional kitchen operation, recipe terminology, and cooking techniques for various food categories.

*Corequisite(s): 316-102 Intro to Culinary Arts*

*Restricted to students admitted to the following program(s): 10-316-1, 30-314-4, 31-316-2, 61-316-4, TC-314-1*

### **316-102 | Intro to Culinary Arts // 5 Credits**

Provides practical experience applying food science principles in food preparation, analysis, and evaluation of preparation techniques.

*Corequisite(s): 316-101 Food Theory*

### **316-105 | Food Safety & Sanitation // 2 Credits**

Applies sanitary, safety, and legal principles to practices in the foodservice industry. Successful completion of the course enables students to take a national sanitation certification examination.

*Prerequisite(s): 316-101 Food Theory and 316-102 Intro to Culinary Arts*

### **316-108 | Service Management // 2 Credits**

This course examines the overall organizational structure and relationships within a retail food and beverage service driven organization. It emphasizes sales supporting functions and current trends. It includes single-unit and multi-unit structures, receiving, marking, stock, warehousing, delivery, wrapping-packing, adjustments, credit, accounts payable, audit, security, workrooms, and personnel.

### **316-111 | Advanced Culinary Arts // 5 Credits**

In the Advanced Culinary Arts course, you will utilize the cooking techniques and concepts you learned in previous courses, as well as, developing new techniques. You will develop skills with meat and fish identification and fabrication and explore international cuisines such as Asian, European, and American Regional Cuisines through regional menus and techniques.

*Prerequisite(s): 316-101 Food Theory and 316-102 Intro to Culinary Arts and 316-105 Food Safety & Sanitation*

### **316-112 | Garde Manger // 3 Credits**

In Garde Manger you will be introduced to advanced culinary techniques that are unique to the cold kitchen. Skills will be developed through hands on participation in fresh sausage crafting, smoking and curing of meat and seafood, hot and cold hors 'd oeuvres, appetizers, salads, cheese making and buffet presentations.

*Prerequisite(s): 316-105 Food Safety & Sanitation and (316-111 Advanced Culinary Arts and 316-114 Purchasing & Receiving and 316-116 Menu Design & Development)*

*Restricted to students admitted to the following program(s): 10-316-1, 31-316-2*

### **316-136 | Culinary Arts Internship // 2 Credits**

The Culinary Arts Internship will immerse you into the culinary industry and allow you to continue to develop and hone your skills at an approved internship site. While on your internship you will work with a site mentor who will provide performance feedback and assist you with meeting your educational goals. During your internship you will create and maintain a portfolio of your experience.

*Prerequisite(s): 316-102 Intro to Culinary Arts and 316-105 Food Safety & Sanitation*

*Restricted to students admitted to the following program(s): 10-316-1*

### **316-143 | Purchasing & Cost Control // 1 Credits**

This course provides an in-depth exploration of purchasing and cost control principles essential to effective culinary operations management. Students will examine procurement processes, supplier relationships, and inventory management strategies to optimize food quality, minimize waste, and ensure financial efficiency. Emphasis is placed on understanding food and labor cost analysis, menu pricing strategies, and the role of technology in cost tracking and forecasting. Through practical exercises, case studies, and real-world scenarios, students will develop skills to analyze operational budgets, create purchasing specifications, and implement cost control systems tailored to various foodservice environments. The course also explores ethical and sustainable purchasing practices, preparing students to meet the demands of modern culinary management. By the end of this course, students will be equipped to make informed decisions that balance operational needs with profitability, contributing to the success of any culinary enterprise.

### **316-145 | Menu Design & Development // 1 Credits**

This course offers a comprehensive study of the principles and practices involved in designing and developing effective, profitable menus, with a strong emphasis on nutritional considerations. Students will learn to create menus that are both appealing to customers and aligned with business objectives, considering factors such as market trends, ingredient sourcing, and cost control. The course explores the relationship between menu items, pricing strategies, and the overall dining experience, with attention to seasonal and cultural influences. This course offers a comprehensive study of the principles and practices involved in designing and developing effective, profitable menus, with a strong emphasis on nutritional considerations. Students will learn to create menus that are both appealing to customers and aligned with business objectives, considering factors such as market trends, ingredient sourcing, and cost control. The course explores the relationship between menu items, pricing strategies, and the overall dining experience, with attention to seasonal and cultural influences. In addition to menu design, the course incorporates nutrition science, focusing on understanding the dietary needs of diverse populations and how to integrate health-conscious options into a menu without sacrificing flavor or quality. Students will explore strategies for balancing nutrition with taste, such as creating lower-calorie, allergen-free, or plant-based dishes. Throughout the course, students will engage in practical exercises including menu analysis, recipe development, and nutritional labeling. By the end of the course, students will be equipped with the knowledge to develop menus that are not only creative and marketable but also nutritionally balanced, sustainable, and tailored to the needs of contemporary diners.

### **316-147 | Restaurant Operations Mgmt // 4 Credits**

This course provides a comprehensive overview of restaurant operations, focusing on the efficient management of front-of-house and back-of-house functions. Students will learn essential skills in staff management, guest service, inventory control, kitchen operations, and cost management. Emphasis will be placed on creating smooth workflows, optimizing service quality, and maximizing profitability. Through case studies and practical exercises, students will gain the expertise needed to manage day-to-day restaurant operations and deliver a high-quality dining experience.

*Prerequisite(s): 316-111 Advanced Culinary Arts*

### **316-149 | Culinary Business & Marketing // 1 Credits**

This course explores the key principles of marketing and business management within the culinary industry. Students will learn how to create and implement effective marketing strategies tailored to foodservice businesses, including restaurants, catering services, and culinary products. Topics covered include brand development, social media marketing, menu engineering, customer relationship management, and pricing strategies. The course also delves into financial management, business planning, and market analysis, providing students with a solid foundation in managing the business side of culinary ventures. Through case studies, practical projects, and real-world applications, students will develop the skills necessary to grow and sustain a successful culinary business.

### **316-151 | Event Operation Management // 4 Credits**

This course provides a comprehensive approach to managing both front-of-house and back-of-house operations for events and catering services. Students will learn how to plan, organize, and execute large-scale events, focusing on the seamless coordination between service and kitchen teams. Key topics include menu development, food preparation, logistics, staffing, budgeting, and customer service. Emphasis is placed on optimizing workflow, ensuring high-quality food and service, and managing event timelines. Through hands-on exercises and case studies, students will gain the skills needed to effectively manage both the operational and culinary aspects of catering and event services.

*Prerequisite(s): 316-147 Restaurant Operations Mgmt*

### **316-199 | Intro to Food Truck // 2 Credits**

The Intro to Food Truck Operations course will expose students to the daily operating functions of running a food truck. Students will have lab and lecture covering the menu planning, logistics, preparing the food and serving from the truck for the lab portion of the course. The locations of the truck may vary at CVTC, 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. Students must have the ServSafe Manager Credential.

## **Air Cond, Refrig, & Heat**

### **401-302 | Basic Refrig & Air Cond // 4 Credits**

Students learn the fundamental principles of the refrigeration circuit. A special effort is made to correlate the fundamental theories and principles to the actual practices that are used in the refrigeration and air conditioning industry.

*Prerequisite(s): 401-351 Basic Electricity HVACR*

*Corequisite(s): 401-303 Applic of Refrig & Air Cond*

### **401-303 | Applic of Refrig & Air Cond // 4 Credits**

The operation and maintenance of domestic and commercial refrigeration and air conditioning systems is the main emphasis of this course. Students learn to work with all the tools and equipment needed to operate a refrigeration and air conditioning system.

*Corequisite(s): 401-302 Basic Refrig & Air Cond*

### **401-351 | Basic Electricity HVACR // 2 Credits**

Electric principles, controls, motors, schematics, and systems are applied as they relate to refrigeration, air conditioning, and heating systems. Note: This course requires the purchase of a tool kit for approximately \$500.

## Automobile - Mechanical

### **404-303 | Elec Cir Trblsh & Adv Body Sys // 2 Credits**

Students will develop the skills needed to read and apply technical information, specifications, and strategy based diagnostic procedures for use in electrical circuit/systems troubleshooting. Classroom instruction and hands-on training are provided on how to use electrical wiring diagrams, component locators, and basic testing tools (such as jumpers, test lights, and DVOMs) to identify and isolate 'open,' 'short' and 'high resistance' faults in automotive lighting and accessory system circuits. Specific advanced body electrical systems diagnosis and service includes passive restraint and air bag systems, conventional and electronic instrumentation, and cruise control systems. 'Scan' tool diagnostics on newer vehicles are covered as they relate to these systems.

*Corequisite(s): 404-333 Auto Elec, Eng & Body Elec Sys*

*Restricted to students admitted to the following program(s): 31-404-3*

### **404-306 | Brake Sys & Engine Repair // 5 Credits**

This course is based on ASE/NATEF competencies for brake system (80 hours) and engine mechanical repair (80 hours). Students can develop the knowledge needed to apply the technical information, specifications, and repair procedures used in brake, engine mechanical, and cooling system service. Competencies include the skills needed to safely and correctly use tools and equipment to service disc brakes, drum brakes, drum and motor machining, power brakes, rear-wheel disc brakes and cooling systems (flushing, cylinder head/valve train systems, including timing belts and chains, short-block assemblies and lubrication systems). Videotapes are used to individualize the instruction of equipment operation.

*Prerequisite(s): 404-303 Elec Cir Trblsh & Adv Body Sys and 404-333 Auto Elec, Eng & Body Elec Sys*

*Corequisite(s): 404-307 Antilock Brk & Eng Mech Diag*

### **404-307 | Antilock Brk & Eng Mech Diag // 2 Credits**

This course is based on ASE/NATEF competencies for ABS (40 hours) and engine mechanical diagnosis (40 hours). Students can develop the knowledge needed to apply the technical information, specifications, and repair procedures used in ABS and diagnosing engine mechanical problems.

*Prerequisite(s): 404-303 Elec Cir Trblsh & Adv Body Sys and 404-333 Auto Elec, Eng & Body Elec Sys*

*Corequisite(s): 404-306 Brake Sys & Engine Repair*

### **404-321 | Steering Susp & Manual Drv Trn // 5 Credits**

This course is based on ASE/NATEF competencies and includes 100 hours of suspension, steering, and wheel alignment, along with 60 hours of drivetrains. Students can develop the knowledge needed to read and apply technical information, specifications, and repair procedures used in chassis and drivetrain servicing. Competencies include the skills needed to safely use tools and equipment to diagnose and repair MacPherson strut, short and long arm, and sport utility/light truck suspension systems; power and manual steering systems, including rack and pinion; tires and wheels; wheel bearings; 4X4 hubs and axles; four-wheel alignment with up-to-date computerized equipment; clutches; manual transmissions; differentials; constant velocity and cardan universal joints; and related drivetrain components.

*Corequisite(s): 404-353 Info Sys & Rel Drive Train*

*Restricted to students admitted to the following program(s): 31-404-3*

**404-333 | Auto Elec, Eng & Body Elec Sys // 5 Credits**

A course of study designed to provide the student with an understanding of electrical fundamentals, including electrical/electronic terminology, electrical components, circuits, measurements, and Ohm's Law relationships. Lab work involves basic, series, and parallel circuit analysis using digital volt-ohmmeters. Automotive body electrical systems (lighting, safety, and powered accessory) circuits are studied with related lab work involving locating/replacing circuit components, lamp replacement, headlight aiming, and circuit repair. Engine electrical systems (battery, starting, charging, and cooling fan circuit) coverage includes testing with specialized VAT and AVR equipment. Practice in applying wiring diagram interpretation and circuit troubleshooting skills will continue with customer supplied vehicles.

*Corequisite(s): 404-303 Elec Cir Trblsh & Adv Body Sys*

*Restricted to students admitted to the following program(s): 31-404-3*

**404-334 | Auto Elec & Computer Systems // 2 Credits**

This course covers basic electronic components and circuits leading to an understanding of automotive computer system operation. Fundamentals of electronics, semiconductor materials, diodes, zener diodes, transistors, analog and digital signals, computer memory, and processor inputs and outputs will be related to basic computer operation. Specific instructions for locating diagnostic resources, vehicle data access, fault code interpretation, and diagnostic strategy will be related to General Motors, Chrysler, and Ford OBD I (On Board Diagnostics-first generation) engine control systems. Second generation On Board Diagnostics (OBD II) system function and testing will include generic as well as manufacturer specific scan tool use and testing procedures.

*Prerequisite(s): 404-303 Elec Cir Trblsh & Adv Body Sys and 404-333 Auto Elec, Eng & Body Elec Sys*

*Corequisite(s): 404-340 Engine Performance*

**404-335 | Automotive Fundamentals // 1 Credits**

A course of study designed to provide the student with an overview of the automotive program along with shop equipment and safety. Computer-based SP2 online safety training will be utilized. Also included is instruction on hand & power tool operation, fastener identification, vehicle lifting procedures, ASE certification criteria, career exploration, and history of the automobile industry. This course is web-enhanced. Some content will be delivered and available via the internet.

*Restricted to students admitted to the following program(s): 31-404-3, 32-404-2*

**404-336 | Basic Vehicle Maintenance // 3 Credits**

A course of study designed to provide the student with the skills necessary to perform vehicle maintenance operations such as oil changes, chassis lubrication, tire rotations and inspections. Students will inspect chassis and brake systems, perform safety inspections, maintenance light reset procedures, and retrieve OBD II DTCs. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-335 Automotive Fundamentals*

*Corequisite(s): 404-337 Automotive Electricity 1, 404-339 Automotive Brake Systems, 404-351 Auto Engine Performance 1*

**404-337 | Automotive Electricity 1 // 2 Credits**

A course of study designed to provide the student with the skills needed to understand electrical fundamentals, including electrical/electronic terminology, electrical components, circuits, measurements, and Ohm's Law relationships. Classroom instruction and hands-on training are provided on how to use electrical wiring diagrams, component locators, and basic testing using industry standard tools to identify and isolate 'open', 'short' and 'high resistance' faults in automotive electrical system circuits. Automotive electrical circuits are studied with related lab work involving locating/replacing circuit components, wire & terminal repair using industry-approved techniques; battery diagnosis, testing & replacement; and electrical cooling fan diagnosis.

*Restricted to students admitted to the following program(s): 31-404-3, 31-405-1, 32-404-2*

#### **404-338 | Automotive Electricity 2 // 3 Credits**

A course of study designed to provide the student with the skills needed to read and apply technical information, specifications, and strategy based diagnostic procedures for use in troubleshooting chassis electrical systems: starting, charging, instrument panel, lighting, powered accessories, and relay controlled circuits. Chassis electrical systems coverage includes testing with industry standard testing equipment. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-339 Automotive Brake Systems and 404-351 Auto Engine Performance 1*

*Corequisite(s): 404-350 Auto Steering & Suspension Sys, 404-352 Auto Engine Performance 2, 404-355 Automotive Computer Systems*

#### **404-339 | Automotive Brake Systems // 4 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service and repair foundation brake systems found on cars and light-duty trucks using industry standard equipment. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-335 Automotive Fundamentals*

*Corequisite(s): 404-336 Basic Vehicle Maintenance, 404-337 Automotive Electricity 1, 404-351 Auto Engine Performance 1*

#### **404-340 | Engine Performance // 5 Credits**

Engine performance competencies are covered for diagnosis and repair of distributor (DI) and distributorless (EI) ignition systems. Ignition system primary circuit testing will be related to no start/hard start-fault diagnosis. Ignition system secondary testing will utilize engine analyzer oscilloscope patterns to verify system performance. Basic air/fuel delivery system testing will also be related to no start/hard start-fault diagnosis. Pressure and volume tests will be used to verify fuel pump operation. Students will be able to safely remove and replace in-tank fuel pumps. Both throttle body and port fuel injection system testing will include computer system On-Board Diagnostics accessed with a 'scan' tool as well as specialized equipment for testing and analyzing fuel injectors. Fuel system service will include filter replacement, as well as throttle valve, intake manifold, and injector cleaning. Practice in applying servicing, diagnostic, and repair skills will continue with customer supplied vehicles.

*Prerequisite(s): 404-303 Elec Cir Trblsh & Adv Body Sys and 404-333 Auto Elec, Eng & Body Elec Sys*

*Corequisite(s): 404-334 Auto Elec & Computer Systems*

#### **404-350 | Auto Steering & Suspension Sys // 4 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service and repair suspension systems found on cars and light-duty trucks using industry standard equipment, with an emphasis on component identification, inspection, diagnosis & replacement. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-339 Automotive Brake Systems and 404-351 Auto Engine Performance 1*

*Corequisite(s): 404-338 Automotive Electricity 2, 404-352 Auto Engine Performance 2, 404-355 Automotive Computer Systems*

#### **404-351 | Auto Engine Performance 1 // 3 Credits**

A course of study designed to provide the student with the skills needed to explain how an internal combustion engine operates and develops horsepower and torque. Students will disassemble an internal combustion engine, identify & measure components, reassemble engine using industry standard tools and procedures, and perform basic engine tests. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-335 Automotive Fundamentals*

*Corequisite(s): 404-336 Basic Vehicle Maintenance, 404-337 Automotive Electricity 1, 404-339 Automotive Brake Systems*

**404-352 | Auto Engine Performance 2 // 3 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service & repair automotive ignition and fuel systems. The student will learn maintenance and troubleshooting and procedures for late-model vehicles using various types of engine, fuel pressure and exhaust diagnostic equipment. This course is web-enhanced. Some content will be delivered via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-339 Automotive Brake Systems and 404-351 Auto Engine Performance 1*

*Corequisite(s): 404-338 Automotive Electricity 2, 404-350 Auto Steering & Suspension Sys, 404-355 Automotive Computer Systems*

**404-353 | Info Sys & Rel Drive Train // 2 Credits**

The first 40 hours includes repair order completion, time/labor guides and estimating procedures, consumer protection/estimating laws, mechanic liens, and hazardous materials handling. The course also covers how to use service manuals of all types and DVD data system, plus how to study, take notes, and keep up-to-date on the job (bulletins, trade publications, service schools, and after-market training). The second 40 hours is based on ASE/NATEF competencies for automatic transmissions/transaxles. Students can develop the knowledge needed to apply technical information, specifications, and repair procedures used in automatic transmission/transaxle servicing.

*Corequisite(s): 404-321 Steering Susp & Manual Drv Trn*

*Restricted to students admitted to the following program(s): 31-404-3*

**404-355 | Automotive Computer Systems // 2 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service and repair automotive computer controls and emission control systems. Basic electronic components and circuits are reviewed, leading to an understanding of automotive computer systems operations. Fundamentals of electricity, electronics, semiconductor materials, diodes, transistors, analog & digital signals, computer memory, sensors, actuators, and processor inputs/outputs will be related to basic computer operation. Specific instructions for locating diagnostic resources, vehicle data access, fault code interpretation, and diagnostic strategy will be related to On-Board Diagnostics engine control systems. Testing will include industry standard generic as well as manufacturer specific scan tool use and testing procedures. This course is web-enhanced. Some content will be delivered and available via the Internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and (404-339 Automotive Brake Systems or 404-351 Auto Engine Performance 1)*

**404-356 | Automotive HVAC Systems // 3 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service and repair heating, ventilating, and air conditioning systems in automobiles. The student will be able to evacuate and recharge A/C systems, convert A/C systems from R-12 to R134a refrigerant according to industry standards, and perform component replacement. Students will be able to diagnose and repair computerized climate control systems. Upon successful completion of the course, the student will be licensed to perform A/C repairs in the state of Wisconsin. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-338 Automotive Electricity 2 and 404-339 Automotive Brake Systems and 404-350 Auto Steering & Suspension Sys and 404-351 Auto Engine Performance 1 and 404-352 Auto Engine Performance 2 and 404-355 Automotive Computer Systems*

*Corequisite(s): 404-360 Auto Axles & Drive Trains, 404-361 Manual Trnsmission & Trnsaxles, 404-362 Auto Trnsmission & Trnsaxles*

#### **404-357 | Auto Safety & Security Systems // 2 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair safety and security systems on late-model vehicles. Passenger restraints, theft deterrent, and collision avoidance systems will be explored. Instructions on diagnosing, service and repair of body system control electronic systems circuits using a scan tool will be covered. This is a blended course. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-356 Automotive HVAC Systems and 404-360 Auto Axles & Drive Trains and 404-361 Manual Transmission & Transaxles and 404-362 Auto Transmission & Transaxles*

*Corequisite(s): 404-363 Engine Repair, 404-370 Adv Auto Chassis Systems, 404-371 Adv Engine Perf & Alt Fuels*

#### **404-360 | Auto Axles & Drive Trains // 2 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair automotive axles and drive trains. Coursework includes: wheel bearings, constant velocity joints, drive shafts & u-joints, and differential units. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-338 Automotive Electricity 2 and 404-339 Automotive Brake Systems and 404-350 Auto Steering & Suspension Sys and 404-351 Auto Engine Performance 1 and 404-352 Auto Engine Performance 2 and 404-355 Automotive Computer Systems*

*Corequisite(s): 404-356 Automotive HVAC Systems, 404-361 Manual Transmission & Transaxles, 404-362 Auto Transmission & Transaxles*

#### **404-361 | Manual Transmission & Transaxles // 3 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair manual transmissions & transaxles on late-model vehicles. Coursework includes: hydraulic clutches, manual transmission theory & application, and the repair & overhaul of a manual transmission. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-338 Automotive Electricity 2 and 404-339 Automotive Brake Systems and 404-350 Auto Steering & Suspension Sys and 404-351 Auto Engine Performance 1 and 404-352 Auto Engine Performance 2 and 404-355 Automotive Computer Systems*

*Corequisite(s): 404-356 Automotive HVAC Systems, 404-360 Auto Axles & Drive Trains, 404-362 Auto Transmission & Transaxles*

#### **404-362 | Auto Transmission & Transaxles // 4 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair automatic transmissions & transaxles on late-model vehicles. Students will explore the principles of hydraulic and electronic controls as it relates to the automatic transmission. This includes operation of solenoids, sensors, seals, hydraulic clutches, servos, planetary gear sets & drives, and performing a failure evaluation along with a major overhaul of a late-model automatic transmission. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-336 Basic Vehicle Maintenance and 404-337 Automotive Electricity 1 and 404-338 Automotive Electricity 2 and 404-339 Automotive Brake Systems and 404-350 Auto Steering & Suspension Sys and 404-351 Auto Engine Performance 1 and 404-352 Auto Engine Performance 2 and 404-355 Automotive Computer Systems*

*Corequisite(s): 404-356 Automotive HVAC Systems, 404-360 Auto Axles & Drive Trains, 404-361 Manual Transmission & Transaxles*

### **404-363 | Engine Repair // 4 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair internal combustion, engines found on late-model vehicles. Coursework includes: lubrication systems, valve timing, leak diagnosis and repair, engine noise & failure diagnosis, valve service, cylinder head replacement, and engine removal/replacement procedures. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-356 Automotive HVAC Systems and 404-360 Auto Axles & Drive Trains and 404-361 Manual Transmission & Trnsaxles and 404-362 Auto Transmission & Trnsaxles*

*Corequisite(s): 404-357 Auto Safety & Security Systems, 404-370 Adv Auto Chassis Systems, 404-371 Adv Engine Perf & Alt Fuels*

### **404-370 | Adv Auto Chassis Systems // 3 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair advanced suspension components found on late-model vehicles. Coursework includes: wheel alignment, anti-lock brakes, tire pressure monitoring, electric steering, active suspension, and vehicle stability control, and traction control systems. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-356 Automotive HVAC Systems and 404-360 Auto Axles & Drive Trains and 404-361 Manual Transmission & Trnsaxles and 404-362 Auto Transmission & Trnsaxles*

*Corequisite(s): 404-357 Auto Safety & Security Systems, 404-363 Engine Repair, 404-371 Adv Engine Perf & Alt Fuels*

### **404-371 | Adv Engine Perf & Alt Fuels // 3 Credits**

A course of study designed to provide the student with the skills needed to operate a 4 or 5 gas analyzers and explain how they are used to analyze engine performance. Diesel engines will be explored. Compressed Natural Gas (CNG), ethanol, hybrid vehicles, fuel cells, and other alternative fuels will be discussed. Technician and Responder safety when working with these issues will also be included. This course is web-enhanced. Some content will be delivered and available via the internet.

*Prerequisite(s): 404-356 Automotive HVAC Systems and 404-360 Auto Axles & Drive Trains and 404-361 Manual Transmission & Trnsaxles and 404-362 Auto Transmission & Trnsaxles*

*Corequisite(s): 404-357 Auto Safety & Security Systems, 404-363 Engine Repair, 404-370 Adv Auto Chassis Systems*

## **Auto-Body/Chassis & Finish**

### **405-302 | Intro to Collision Fundamental // 2 Credits**

This course lays the foundation for collision repair, integrating industry insights to prioritize job-ready skills and earning opportunities. Learners will engage in safety training, tool usage, explore career opportunities, develop cover letter/resume/interview skills, begin estimating, and gain an industry overview along with getting to know area employers. The curriculum emphasizes identifying repairable damage, understanding products used in the repair/refinish process, and providing a strong base for entry-level positions.

*Corequisite(s): 405-304 Structural Fundamentals, 405-306 Non-Structural Fundamentals, 405-308 Refinish/Painting Fundamentals*

*Restricted to students admitted to the following program(s): 31-405-1*

#### **405-304 | Structural Fundamentals // 1 Credits**

In this foundational course, learners develop essential skills in structural collision repair, focusing on entry-level job readiness. Learners will identify structural damage, understand when to repair or replace, explore related materials, learn repair processes, and prioritize safety. The curriculum provides a fundamental understanding of structural repairs and what type of structural work employers are doing in regional shops.

*Corequisite(s): 405-302 Intro to Collision Fundamental, 405-306 Non-Structural Fundamentals, 405-308 Refinish/Painting Fundamentals*

*Restricted to students admitted to the following program(s): 31-405-1*

#### **405-306 | Non-Structural Fundamentals // 4 Credits**

In this foundational course, learners develop essential non-structural repair skills essential for entry-level positions. Emphasis is placed on hands-on practice in metal finishing, spreading body filler, prep sanding for primer, plastic repair, and disassembly/reassembly. This course will complement the content being covered in Refinish/Painting Fundamentals and will also cover relevant electrical and mechanical components that pertain to non-structural repairs.

*Corequisite(s): 405-302 Intro to Collision Fundamental, 405-304 Structural Fundamentals, 405-308 Refinish/Painting Fundamentals*

*Restricted to students admitted to the following program(s): 31-405-1*

#### **405-308 | Refinish/Painting Fundamentals // 4 Credits**

This course introduces learners to fundamental refinishing and painting techniques critical for entry-level roles. Learners gain hands-on experience on panel prep, priming, masking, and achieving proper color match and showroom finish. Integrated with Non-Structural Fundamentals, the curriculum emphasizes proper procedures and techniques along with distinguishing between poor and good quality work to instill industry standards and enhance job readiness.

*Corequisite(s): 405-302 Intro to Collision Fundamental, 405-304 Structural Fundamentals, 405-306 Non-Structural Fundamentals*

*Restricted to students admitted to the following program(s): 31-405-1*

#### **405-310 | Collision Internship // 1 Credits**

Aligned with employer expectations, the internship provides hands-on experience and mentorship to reinforce work readiness skills being learned in the classroom/lab. Learners will utilize this industry immersion to focus on skill development and will receive structured guidance in a meeting with the employer and instructor. Emphasis is placed on understanding job pace, growth opportunities, and applying learned skills in real-world settings to employability opportunities upon program completion.

*Prerequisite(s): 405-302 Intro to Collision Fundamental and 405-304 Structural Fundamentals and 405-306 Non-Structural Fundamentals and 405-308 Refinish/Painting Fundamentals*

*Corequisite(s): 405-312 Intermediate Collision, 405-314 Structural Applications, 405-316 Non-Structural Applications, 405-318 Refinish/Painting Applications*

*Restricted to students admitted to the following program(s): 31-405-1*

#### **405-312 | Intermediate Collision // 1 Credits**

Expanding on Intro to Collision Fundamentals, this course focuses on integrating and applying work readiness skills and connecting broader collision concepts. Learners develop an understanding of more broad repair concepts such as air bags, SRS, seat belts and enhanced estimating. By covering a broad range of collision industry topics, this will expand student readiness for real-world collision repair environments.

*Prerequisite(s): 405-302 Intro to Collision Fundamental and 405-304 Structural Fundamentals and 405-306 Non-Structural Fundamentals and 405-308 Refinish/Painting Fundamentals*

*Corequisite(s): 405-310 Collision Internship, 405-314 Structural Applications, 405-316 Non-Structural Applications, 405-318 Refinish/Painting Applications*

*Restricted to students admitted to the following program(s): 31-405-1*

**405-314 | Structural Applications // 1 Credits**

Building on Structural Fundamentals, this course advances learners' proficiency in structural collision repair, aligning with industry expectations. Learners focus on repair techniques such as welded body panel replacements and uni-body/frame rail sectioning in addition to an introduction to frame rack setup, measuring and frame pulling. The curriculum emphasizes practical application type of work relevant to a work ready position in the collision repair industry.

*Prerequisite(s): 405-302 Intro to Collision Fundamental and 405-304 Structural Fundamentals and 405-306 Non-Structural Fundamentals and 405-308 Refinish/Painting Fundamentals*

*Corequisite(s): 405-310 Collision Internship, 405-312 Intermediate Collision, 405-316 Non-Structural Applications, 405-318 Refinish/Painting Applications*

*Restricted to students admitted to the following program(s): 31-405-1*

**405-316 | Non-Structural Applications // 5 Credits**

Building on Non-Structural Fundamentals, this course deepens learners' expertise in non-structural repairs, aligning with industry expectations. Learners focus on repetitive refinement of skills through tasks such as dent repair on fenders, doors, and hoods in addition to body line repair, body pulling to realign panel gaps and door skin replacements. This course will complement the content being covered in Refinish/Painting Applications and will also cover relevant electrical and mechanical components that pertain to non-structural repairs.

*Prerequisite(s): 405-302 Intro to Collision Fundamental and 405-304 Structural Fundamentals and 405-306 Non-Structural Fundamentals and 405-308 Refinish/Painting Fundamentals*

*Corequisite(s): 405-310 Collision Internship, 405-312 Intermediate Collision, 405-314 Structural Applications, 405-318 Refinish/Painting Applications*

*Restricted to students admitted to the following program(s): 31-405-1*

**405-318 | Refinish/Painting Applications // 5 Credits**

Continuing from Refinish/Painting Fundamentals, this course advances learners' skills in automotive refinishing. Learners engage in refining painting techniques, color blending/tinting, environmental impacts on process, and learning to identify and correct painting flaws. Through repetition, refinement, and integration with Non-Structural Applications, learners will achieve proficiency in painting various panels and understanding paint materials, aligning with industry expectations.

*Prerequisite(s): 405-302 Intro to Collision Fundamental and 405-304 Structural Fundamentals and 405-306 Non-Structural Fundamentals and 405-308 Refinish/Painting Fundamentals*

*Corequisite(s): 405-310 Collision Internship, 405-312 Intermediate Collision, 405-314 Structural Applications, 405-316 Non-Structural Applications*

*Restricted to students admitted to the following program(s): 31-405-1*

**405-320 | Advanced Collision // 1 Credits**

In this advanced course, learners apply their foundational skills from Intro to Collision Fundamentals and Collision-Intermediate to comprehensive repair projects, mirroring real-world scenarios. Emphasizing hands-on experience, learners tackle more advanced repair items such as pre/post repair scans, calibration, scanning, and ADAS. Building upon the projects being completed in the Collision Capstone course, application of these topics will be completed to ensure students are prepared for work readiness, are prepared with problem-solving abilities and practical proficiency, and understand final repair inspections.

*Prerequisite(s): 405-310 Collision Internship and 405-312 Intermediate Collision and 405-314 Structural Applications and 405-316 Non-Structural Applications and 405-318 Refinish/Painting Applications*

*Corequisite(s): 405-322 Collision Capstone*

*Restricted to students admitted to the following program(s): 31-405-1*

### **405-322 | Collision Capstone // 5 Credits**

In this culminating course, learners integrate and apply the skills and knowledge acquired throughout the program to complete comprehensive repair projects. Emphasizing real-world scenarios, learners tackle start-to-finish repairs, such as light to medium collision repair, body panel, bolt on parts, AC condenser/radiator, core support, priming, painting, and final detailing. The curriculum is designed to refine work readiness skills through practical application and industry-aligned projects, ensuring learners are well-prepared for immediate employment in the collision repair industry.

*Prerequisite(s): 405-310 Collision Internship and 405-312 Intermediate Collision and 405-314 Structural Applications and 405-316 Non-Structural Applications and 405-318 Refinish/Painting Applications*

*Corequisite(s): 405-320 Advanced Collision*

*Restricted to students admitted to the following program(s): 31-405-1*

## **Combustion Engines**

### **412-305 | Chassis I // 5 Credits**

This course will introduce the student to the diesel/heavy duty truck repair business. Vehicle safety, driving practices, truck servicing, and wheel end repair, along with hydraulic brakes, air brakes, and air brake systems will be the subject material. A tool kit is required by each student in this course.

*Corequisite(s): 412-306 Chassis II*

*Restricted to students admitted to the following program(s): 31-412-5, 32-412-1*

### **412-306 | Chassis II // 5 Credits**

This course will study front-end geometry, alignment, steering, and suspensions as it pertains to light- and heavy-duty trucks. Also studied will be clutches, drivelines, coupling, and 5th wheel operation. A tool kit is required by each student in this course.

*Corequisite(s): 412-305 Chassis I*

### **412-307 | Chassis Electrical // 5 Credits**

This course will study all aspects of electrical systems found on heavy-duty trucks. Battery testing, lighting, starting, charging, in-dash controls, schematic interpretation, and troubleshooting techniques using a digital multi-meter will be practiced. A tool kit is required by each student in this course.

*Prerequisite(s): 412-306 Chassis II*

*Corequisite(s): 412-308 Mechanical Gear Trains, 412-309 Heavy Duty HVAC*

### **412-308 | Mechanical Gear Trains // 4 Credits**

This course introduces the student to rear axle, power divider, and manual transmission concepts. The student will study gear ratios, gear types, gear train configurations, failure analysis, standard servicing requirements, and practice the rebuilding techniques for each major brand. A tool kit is required by each student in this course.

*Prerequisite(s): 412-306 Chassis II*

*Corequisite(s): 412-307 Chassis Electrical, 412-309 Heavy Duty HVAC*

**412-309 | Heavy Duty HVAC // 3 Credits**

This course is designed to familiarize the student with basic air conditioning/heating concepts and diagnostic procedures as used with heavy-duty trucks and other heavy equipment. The course will focus on A/C concepts, federal and state requirements, component operation, controls, and service procedures such as recovery, evacuation, and charging. Transport refrigeration diagnostic concepts and service procedures as used on refrigerated trailers will also be studied. A tool kit is required by each student in this course.

*Prerequisite(s): 412-306 Chassis II*

*Corequisite(s): 412-307 Chassis Electrical, 412-308 Mechanical Gear Trains*

*Restricted to students admitted to the following program(s): 31-412-5, 32-412-1*

**412-310 | Diesel Engine Oper & Tune-up // 4 Credits**

This course will introduce the student to the mechanical diesel engine. The student will study engine operating fundamentals, basic theory of combustion, mechanical controls, and fuel injection systems. Emphasis will be on engine tune-up and testing with proper diagnostic procedures. A tool kit is required by each student in this course.

*Prerequisite(s): 412-309 Heavy Duty HVAC*

*Corequisite(s): 412-311 Applied Mobile Hydraulics, 412-312 Intro to Electronic Control*

**412-311 | Applied Mobile Hydraulics // 2 Credits**

This course will provide the application of basic hydraulic principles into typical mobile hydraulic circuits. The student will experience activities with basic hydraulic components including, disassembly and assembly of valves, pump, and cylinder. Servicing and preventive maintenance will be performed on trucks and other equipment. A tool kit is required by each student in this course.

*Prerequisite(s): 412-309 Heavy Duty HVAC*

*Corequisite(s): 412-310 Diesel Engine Oper & Tune-up, 412-312 Intro to Electronic Control*

**412-312 | Intro to Electronic Control // 4 Credits**

This course will introduce the student to the basic electronic control systems that are integrated into the modern heavy-duty truck. The student will study electronic engine systems and electronic transmission systems. Schematic interpretation, troubleshooting techniques using a digital multi-meter, service manual and scan tools will be practiced. A tool kit is required by each student in this course.

*Prerequisite(s): 412-309 Heavy Duty HVAC*

*Corequisite(s): 412-310 Diesel Engine Oper & Tune-up, 412-311 Applied Mobile Hydraulics*

**412-313 | Diesel Engine Overhaul // 5 Credits**

This course will study heavy-duty diesel engine rebuild. Diagnostic and disassembly procedures, evaluation of worn parts, component rebuilding, reassembly and testing procedures including power concepts and dynamometer run-in. Operation and troubleshooting of cooling and lubrication systems. A tool kit is required by each student in this course.

*Prerequisite(s): 412-312 Intro to Electronic Control*

*Corequisite(s): 412-314 Electronic Diagnostics, 412-315 Preventive Maintenance, 458-308 CDL License Training-Pre-Trip*

**412-314 | Electronic Diagnostics // 4 Credits**

This course will advance the student's ability in electronic diagnostics with the use of electronic software for engine and transmission troubleshooting. The student will be using skills learned in the program to diagnose active and inactive codes, system reprogramming, and intermittent codes. A tool kit is required by each student in this course.

*Prerequisite(s): 412-312 Intro to Electronic Control*

*Corequisite(s): 412-313 Diesel Engine Overhaul, 412-315 Preventive Maintenance, 458-308 CDL License Training-Pre-Trip*

**412-315 | Preventive Maintenance // 1 Credits**

This course will offer the student a chance to show the instructor his or her ability to perform general and/or major preventive maintenance/repair on a heavy-duty truck. Task may include any area that was covered in the program. A tool kit is required by each student in this course.

*Prerequisite(s): 412-312 Intro to Electronic Control*

*Corequisite(s): 412-313 Diesel Engine Overhaul, 412-314 Electronic Diagnostics, 458-308 CDL*

*License Training-Pre-Trip*

**412-316 | Heavy Equip Safety&Ind Skills // 2 Credits**

In this course, students will learn about proper safety practices and awareness while working in and around heavy equipment and work conditions with hazards. The following is an example of a few items that will be covered: operating commonly used tools & equipment, safety harnesses & rigging, hand signals and proper lifting techniques, properly ventilating workspaces, roadway/flagger safety.

**412-317 | Electricity for Hvy Equip Tech // 1 Credits**

In this course, students will learn about DC and AC electricity & troubleshooting related to working in heavy equipment applications.

**412-318 | Heavy Equip Service Apps // 5 Credits**

In this course, students will focus on hands-on learning applications in a lab setting. Topic may include: basic mechanical maintenance; hydraulics; pneumatics; technology; road construction, forestry, material handling, mining and off road equipment.

**412-320 | Diesel Equipment Service Mgmt // 2 Credits**

This course provides the student with practical aspects of managing a fleet or repair business. Special concentration is placed on current OEM software, preventive maintenance, DOT annual inspections, OSHA, DNR/EPA laws and regulations. Course work will be presentations, written reports, and computer lab work.

**412-345 | Basic DC Electricity // 2 Credits**

This course introduces the student to DC electrical and electronic circuitry as it applies to heavy-duty trucks. The course will focus on characteristics of electricity, series circuits, parallel circuits, soldering, Ohm's Law, meter usage/application, and relay operation. These skills will be practiced on training boards in a controlled lab setting. A digital volt/Ohm meter is required by each student in this course.

*Restricted to students admitted to the following program(s): 31-412-5, 32-412-1*

**412-350 | Mobile Hydraulic Concepts // 1 Credits**

This course will provide the basic concepts of hydraulic principles that are found in typical mobile hydraulic circuits. The student will learn the components, related math, symbols, schematics, fitting, operations, and maintenance of the hydraulic systems.

*Corequisite(s): 412-311 Applied Mobile Hydraulics*

**412-360 | Diesel Fundamentals // 1 Credits**

Diesel Fundamentals is an introduction to shop safety and common shop practices utilized in the diesel industry, and the Diesel Technician program. Students will learn proper shop procedures, safety practices, tool usage, and service manual usage. The skills learned by the students will be directly applied during the Diesel Technician program and throughout their career.

*Corequisite(s): 412-305 Chassis I, 412-306 Chassis II, 412-345 Basic DC Electricity*

### **412-380 | Diesel Internship // 1 Credits**

This course is designed to provide the student with a purposeful occupational experience in the medium/heavy truck field. Each internship is an individualized experience. A training plan is created for each student in conjunction with the training site and CVTC Diesel Technician Program to provide experience related to the skills and knowledge acquired in the program. Student must be in 4th semester status.

*Restricted to students admitted to the following program(s): 32-412-1*

## **Electricity**

### **413-310 | Basic EPD Safety // 2 Credits**

This theory course will introduce the concepts of basic Lineworker safety on the job including how to use fall protection, personal protective equipment, chainsaws, knots, rigging, and communications, both verbal and utilizing hand signals. First Aid and CPR certification (Including becoming familiar with an Automated External Defibrillator) will be obtained in this course.

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-311 | Intro to Pole Climbing // 2 Credits**

This outdoor lab course is an introductory course on how to properly climb poles and towers utilizing fall protection. Poles up to 40' tall will be climbed on a daily basis. Students will be working in groups towards the end of this course to "wreck out/retire" old power lines and equipment from the previous year's students. Students will be expected to wear all personal protective equipment (PPE) at all times including: Hard hat, safety glasses, gloves, long sleeve shirts, and the proper approved fall restraint system.

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-312 | Basic EPD Electricity // 1 Credits**

This classroom/theory course has an emphasis on basic electrical theory including Ohm's Law and magnetism. This course explains where electricity comes from and how to measure volts, amperes, ohms, and watts properly. Basic and advanced math skills will be utilized including: algebra, geometry, trigonometry, fractions, decimals, etc.

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-313 | URD Installation & Termination // 2 Credits**

This hands-on lab course will introduce the student on how to properly operate the following equipment: digger-derick truck, skid-steer, trencher, backhoe, plow (for installing underground cable). Students will install underground cable, learn how to properly terminate the cable for overhead pole use and underground pad-mount use. Simulated underground wire switching procedures will be introduced in this course.

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-320 | Intermediate EPD Electricity // 4 Credits**

This theory course builds off of the basic Ohm's law concepts taught in the Basic Electricity course and transgresses into deeper concepts including: Alternating Current vs. Direct Current, work, single phase power & energy concepts, parallel and combination circuits, single phase transformers, as well as measuring resistance, reactance (both inductive and capacitive), and impedance. Wire sizing and resistance will be discussed. The student will frequently utilize higher level math concepts including: algebra, Pythagorean Theorem, square root, trigonometry functions (Sine, Cosine, Tangent), vectors and reciprocal formulas.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrical)*

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-321 | OH Line Design & Construction // 5 Credits**

This outdoor lab course will introduce the students to power line insulators, line pole information, reading and following a specification manual, staking power lines for new construction, right of way clearance and procedures along with constructing a distribution line from scratch. Each student will participate in tension stringing of ACSR wire, sagging and clipping in the wire to the insulators along with installing armor rod where necessary. Team work and practicing safe work practices will be emphasized heavily during this course. Students will also learn guying and anchoring concepts. Students will acquire a Medic/First Aid & CPR with AED Certification.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrnc)*

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-330 | Advanced EPD Safety // 2 Credits**

This theory course teaches students how to properly ground electrical apparatus, how to de-energize, test, and ground out a power line. Proper procedures on lock out/tag out will also be discussed. Proper procedures on how to safely remove capacitors and voltage regulators from service will be discussed in great detail. The safety manual will be utilized extensively to teach students how to prevent injuries on the job.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrnc)*

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-331 | Power Line Apparatus // 2 Credits**

This lab course will teach students how to install, connect, and perform basic maintenance pole mounted transformers, fused cutouts, power line capacitors, Oil Circuit reclosers, sectionalizers, switches and voltage regulators. Personal protective grounding will be emphasized in this course using hands-on training.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and 413-320 Intermediate EPD Electricity and 413-321 OH Line Design & Construction and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrnc)*

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-332 | Advanced EPD Electricity // 2 Credits**

In this theory course, students will learn all the concepts attributed to both single phase power and three phase power including transformer connections. Overcurrent & Overvoltage protective devices will be introduced. The operation, installation and maintenance of voltage regulators will be discussed.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and 413-320 Intermediate EPD Electricity and 413-321 OH Line Design & Construction and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrnc)*

*Restricted to students admitted to the following program(s): 31-413-2*

### **413-333 | Transmission Line Construction // 2 Credits**

In this outdoor lab course students will “wreck out” complete transmission power line structures, then construct them from scratch without using a bucket truck. Poles/structures will be climbed up to 70’ high.

*Prerequisite(s): 413-310 Basic EPD Safety and 413-311 Intro to Pole Climbing and 413-312 Basic EPD Electricity and 413-313 URD Installation & Termination and 413-320 Intermediate EPD Electricity and 413-321 OH Line Design & Construction and (804-360 Math for Technical Trades or 804-363 Math for Electricity & Electrnc)*

*Restricted to students admitted to the following program(s): 31-413-2*

## Indus Hydraulics-Pneumatic

### **419-102 | Hydraulic System Operations // 2 Credits**

This course provides the application of basic hydraulic principles into typical industrial circuits. The students will experience exercises with basic hydraulic components and simple oil systems and how they are applied in circuits. This course is designed to help develop skills in understanding hydraulic components and their interaction to each other in demonstration circuits. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 419-116 Basic Hydraulics*

*Restricted to students admitted to the following program(s): 10-462-1, 31-462-2, TC-462-1*

### **419-116 | Basic Hydraulics // 2 Credits**

This course exposes the student to the theories and basic components of hydraulics. Basic component construction and operation is explored. The theory of function is supplemented by hands on disassembly and assembly of actual industrial components. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 462-119 Industrial Mechanical Skills*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2, TC-462-1*

### **419-117 | Basic Pneumatics // 2 Credits**

This course exposes the student to the theories and basic components of pneumatics. Basic component construction and operation is explored. The theory of function is supplemented by hands on disassembly and assembly of actual industrial components. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 462-119 Industrial Mechanical Skills*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2, TC-462-1*

### **419-118 | Pneumatic System Operations // 2 Credits**

This course provides the application of basic pneumatic principles into typical industrial circuits. The student will experience exercises with basic pneumatic components and simple air systems and how they are applied in circuits. This course is designed to help develop skills in understanding pneumatic components and their interaction to each other in demonstration circuits. Vacuum components and air logic systems will be included. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 419-117 Basic Pneumatics*

*Restricted to students admitted to the following program(s): 10-462-1, 31-462-2, TC-462-1*

## Machine Shop

### **420-105 | Manual Machining Processes // 2 Credits**

This course is intended to develop the fundamental skills of machining for a career in the maintenance trades. Fundamental processes include; Manual Lathe operation, Manual Mill operation, basic set-up, lay-out, measurement, turning processes, milling processes, drilling processes, and tool geometry/sharpening. The format for this class is lecture/lab format, which means the lecture component will directly relate to lab exercises.

**420-150 | Machining/CAM // 3 Credits**

This course is designed to give the student an overview of the machining processes to include milling, drilling, turning, and grinding. It will involve working with manuals as well as computerized (CNC) machine tools. The student will also be introduced to CAM software where they will define the part geometry, develop tool paths, and download to the CNC machine to create a part.

*Restricted to students admitted to the following program(s): 10-462-1, 31-462-2*

**420-300 | Machine Shop Theory // 1 Credits**

Broad theoretical background in machine shop practices which includes milling, turning, grinding, and drilling.

*Corequisite(s): 420-373 Precision Measurement*

*Restricted to students admitted to the following program(s): 31-420-8, 32-420-5*

**420-302 | Machining Processes, Inter // 5 Credits**

This course expands on the fundamental skills of the machine shop by broadening the student's knowledge base with bench work, layout, set-up, measurement, turning, drilling, grinding, tool geometry/sharpening, and an introduction to milling. The format for this class is a self-paced lab with a minimum allowable standard established.

*Prerequisite(s): 420-301 Machining Processes, Intro to*

**420-310 | CNC Programming Theory // 1 Credits**

In this course students will acquire knowledge and skills in CNC Mill programming concepts. Students will develop and apply manual G&M code programming skills in linear and circular interpolation, canned cycles, cutter compensation techniques, and applications using sub-program and sub-routines. Math concepts will be applied to find Cartesian coordinates for part geometry. Students will complete examples presented and be assigned similar projects to reinforce the material presented.

*Prerequisite(s): 420-321 Manual Turning Processes and 420-322 Manual Milling Processes*

*Corequisite(s): 420-325 Basic CNC Mill Programming, 420-330 Basic CNC Lathe Programming*

**420-321 | Manual Turning Processes // 5 Credits**

This course is intended to develop the fundamental skill for a career in the machining trade. Fundamental processes include; Manual Lathe operation, basic set-up, lay-out, measurement, turning processes, and tool geometry/sharpening. The format for this class is a self-paced lab with a minimum allowable standard established. This course requires the purchase of tools and measuring equipment required for working in the Machine Tool lab.

*Corequisite(s): 420-300 Machine Shop Theory, 420-373 Precision Measurement*

*Restricted to students admitted to the following program(s): 31-420-8, 32-420-5*

**420-322 | Manual Milling Processes // 5 Credits**

This course expands on the fundamental skills of the machine shop by broadening the student's knowledge base with; Manual mill operation, basic set-up, layout, measurement, drilling and milling processes along with using a variety of milling cutters.

*Corequisite(s): 420-300 Machine Shop Theory, 420-373 Precision Measurement*

*Restricted to students admitted to the following program(s): 31-420-8, 32-420-5*

**420-325 | Basic CNC Mill Programming // 5 Credits**

This course is designed to prepare the student for entry-level skills in programming, setup, and operation of CNC milling machines. Repetitive operational tasks will be performed as students acquire knowledge and skill in setting-up and operating CNC milling machines. Students will develop and apply skills in setting and testing work and tool offsets, performing manual data input functions, loading programs, and the running of proven CNC programs. Programming examples will be covered using canned cycles, linear and circular interpolation, cutter compensation, subroutines, and multiple fixture offsets, etc. Projects will be assigned and completed using Haas Mini and VF series vertical mills.

*Prerequisite(s): (420-322 Manual Milling Processes) or 420-324 Manual Milling Mach Operations*

**420-330 | Basic CNC Lathe Programming // 5 Credits**

This course is designed to prepare the learner for entry-level skills in operation, setup, and manual programming of CNC lathes. Repetitive operational tasks will be performed by students to acquire knowledge and skills in operation and setup of CNC lathes. Programming examples will be covered using canned cycles, linear, and tool nose radius compensations. Projects will be assigned and completed using Haas CNC Turning Centers.

*Prerequisite(s): 420-321 Manual Turning Processes*

*Corequisite(s): 420-325 Basic CNC Mill Programming*

**420-332 | CNC Equations 1 // 1 Credits**

This course will teach students foundational math skills of basic arithmetic. Including conversions, whole numbers, fractions, decimals, percentages, angles, and measurement. The calculations will build the basic foundation to plot points for CNC machining. This course will also cover basic calculations for spindle speeds and feed rates for machine tools.

**420-333 | CNC Equations 2 // 1 Credits**

This course will cover CNC equations to program CNC machine tools. Equations covered will be geometry, trigonometry, blending angles to arcs, and geometric entities using practical applications. The applications will directly relate to programming CNC machines. This course will also cover calculations for spindle speeds and feed rates for machine tools.

*Prerequisite(s): 420-332 CNC Equations 1*

**420-341 | Materials for Machinists // 2 Credits**

During this course individuals will learn the terminology relating to the mechanical, physical, and chemical properties of materials used for Machine Tooling Technics. Materials covered will be the classification of steel, cast iron, aluminum, copper, and polymers. Lab activities will include hardening, annealing, case hardening, destructive test, non-destructive test, casting, molding, welding, and gluing of materials.

*Prerequisite(s): 420-321 Manual Turning Processes and 420-322 Manual Milling Processes*

**420-373 | Precision Measurement // 1 Credits**

This course will provide the theory, technique, and care of the coordinate measuring machine (CMM) and various measuring instruments. The student will apply blueprint reading skills and geometric tolerancing to projects made in the machine shop while applying measuring techniques used with the CMM and basic measuring instruments. The student will be exposed to precision inspection methods as it relates to industrial blueprints, manufactured parts, and the student's projects.

*Corequisite(s): 420-300 Machine Shop Theory*

*Restricted to students admitted to the following program(s): 31-420-8, 32-420-5*

**420-380 | 2-D CAM // 2 Credits**

2-D CAM is a two-credit course that is offered by the Machine Tool Department at Chippewa Valley Technical College. This course will provide the student with a basic knowledge of a Windows environment computer workstation and CAD-CAM software. The purpose of this course is to develop the skills of print interpretation, geometry generation, dimensioning, and both virtual and conventional machining of part geometry to print specifications. 2-D CAM is a one-semester (64-hour) course and is intended for entry-level machine tool programmers. This is a laboratory-based course that consists of hands-on activities. Enrollment by instructor consent.

*Prerequisite(s): 420-325 Basic CNC Mill Programming or 420-325A Basic CNC Mill Programming*

## Mechanical Drafting

### **421-303 | CAD I // 3 Credits**

Introduction to computer-aided drafting and design (CAD) software (AutoCAD) to create two-dimensional drawings. Introduces CAD navigational commands to create entities, edit, store, and print CAD drawings. Topics include entity creation of arcs, circles, lines, coordinates, editing functions, scaling, making templates, text detailing, layers and line types, viewports, modelspace layout and paperspace practices, dimensioning styles, calculation strategies, blocks, groups, libraries, attributes, bills of materials, and plotting to scale. The student will apply CAD skills to a detailed mechanical design drawing. All assignments are documented within an AutoCAD portfolio.

### **421-304 | CAD II // 2 Credits**

This course is designed to teach computer-aided drafting principles and standard practices. AutoCAD software is used for technical drawing applications. Topics include coordinate features, various editing functions, file maintenance, database management, prototype drawing, mechanical part design dimensioning practices, the use of blocks, using library symbols, two-dimensional CAD design details, and printing or plotting. Detailed drawings will follow general dimensioning practices found in ASME Y14.5-2009.

### **421-315 | Geometric Tolerancing // 2 Credits**

This course is designed to provide the concepts of Geometric dimensioning and tolerancing (GD&T) as applied to mechanical parts. Welding fabrication, and mechanical assemblies, GD&T symbols of form, orientation, profile, location, and runout will be used in application based on ASME Y14.5-2009 standards. GD&T universal symbols and terms will be applied: position tolerancing, datum reference frame theory, datum (size) modifiers, datum targets, metrology and functional gage design application using a coordinate measuring open setup.

### **421-385 | MT Blueprint Reading and GD&T // 2 Credits**

Introduction of engineering language used on blueprints; interpretation of blueprints; blueprints and understanding manufacturing processes and communication between product design and machinist-manufacturer.

*Restricted to students admitted to the following program(s): 31-420-8, 32-420-5*

## Welding

### **442-120 | Related Welding-Indust Mech // 2 Credits**

The purpose of this course is to help the students acquire the basic welding skills in oxyacetylene welding, Shielded Metal Arc Welding (SMAW), and Gas Metal Arc Welding (GMAW). It is a hands-on self-paced learning environment to learn basic welding skills and safe welding practices.

*Restricted to students admitted to the following program(s): 10-462-1, 10-623-8, 30-070-1, 30-462-2, 31-462-2*

### **442-130 | Welding for Maintenance // 3 Credits**

This course is a basic introduction to welding concepts for industrial maintenance personnel in a hands-on lab environment. MIG welding will be the main emphasis of the course along with an introduction to Stick and TIG processes. Plasma cutting and Torch skills will also be included.

### **442-300 | Adv Shielded Metal Arc Welding // 3 Credits**

Students will learn equipment set up, safe practices as well as perform SMAW welds in all positions while following WPS's in a lab setting.

*Prerequisite(s): 442-325 Shielded Metal Arc Welding*

**442-301 | Welding Metallurgy // 2 Credits**

The purpose of this course is to help students acquire basic metallurgy knowledge that will be useful in their welding careers. The students will study the types and uses of steel; modification and prediction of metal behavior; crystalline structure before and after modification; lab work focuses on using the knowledge gained.

*Prerequisite(s): 442-361 Basic Arc Welding or 442-325 Shielded Metal Arc Welding*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-303 | Metals Technology // 1 Credits**

Introduces the student to a variety of technical topics related to the Welding program. Topics will include: machine settings, wire and electrode designations, drilling operations, data sheet interpretation, structural steel methods, maintenance of welding equipment, etc. Discussion will also take place on issues such as work ethics and job/work attitudes.

*Prerequisite(s): 442-310 Welding Safety and Orientation*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-307 | Welding Print Reading // 2 Credits**

Drawing fundamentals related to 2 and 3 view drawings; visual projection methods; freehand sketching; weld symbols and how to apply them. Interpret weld blueprints according to industry standards.

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1, 61-442-1*

**442-309 | Weld Applications & Sense // 4 Credits**

This course incorporates welding applications for exotic materials and welding skill refinement. Students will need to identify materials to be welded, choose the proper welding process, develop a welding procedure (WPS) according to a welding code and successfully join the materials identified for a given application. Practice and complete welds and weld tests per AWS sense standards and regulations.

*Prerequisite(s): 442-363 Advanced Gas Metal Arc Welding and 442-364 Gas Tungsten Arc Welding and 442-300 Adv Shielded Metal Arc Welding*

*Restricted to students admitted to the following program(s): 32-457-1*

**442-310 | Welding Safety and Orientation // 1 Credits**

Introduces welding safety and standard operating procedures on equipment commonly used in welding labs/shops and on tools received in student's toolbox. Students will be able to receive an OSHA 10 safety certificate.

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1, 61-442-1*

**442-311 | Transportation Welding // 1 Credits**

The purpose of this course is to help the students acquire basic welding skills used in the transportation industry by using Gas Metal Arc Welding (GMAW), Plasma Arc Cutting (PAC), and Oxy-Fuel Cutting (OFC). It is a hands-on self-paced learning environment to learn basic welding skills and

safe welding practices. May get into course with instructor approval if you are not a program or pre-program student.

*Restricted to students admitted to the following program(s): 31-405-1*

**442-312 | Welding for Auto Collision // 1 Credits**

The purpose of this course is to help the students acquire basic welding skills on light gauge metals and other materials used in the automobile industry by using Gas Metal Arc Welding (GMAW), Plasma Arc Cutting (PAC), and Oxy-Fuel Cutting (OFC). It is a hands-on self-paced learning environment to learn basic welding skills and safe welding practices. May get into course with instructor approval if you are not a program or pre-program student.

*Prerequisite(s): 442-311 Transportation Welding*

**442-313 | Welding-Automotive Technician // 1 Credits**

The purpose of this course is to help learners acquire basic welding skills on light gauge metals and other materials used in the automotive repair industry using Gas Metal Arc Welding (GMAW), Plasma Arc Cutting (PAC), and Oxy-Fuel Cutting (OFC). Additionally, skills will be developed on removing stuck vehicle parts and fasteners. It is a hands-on, self-paced learning environment to learn basic welding skills and safe welding practices.

*Restricted to students admitted to the following program(s): 31-404-3, 32-404-2*

**442-314 | Related Welding // 2 Credits**

The basis of oxyacetylene, arc and wirefeed welding are covered. Laboratory work is performed to develop basic skills and learn safe welding work habits.

**442-316 | Related Welding for Diesel // 2 Credits**

The purpose of this course is to help the students acquire the basic welding skills in oxyacetylene welding, Shielded Metal Arc Welding (SMAW), and Gas Metal Arc Welding (GMAW). It is a hands-on self-paced learning environment to learn basic welding skills and safe welding practices.

*Restricted to students admitted to the following program(s): 31-412-5, 32-412-1*

**442-317 | Related Welding, Marine // 2 Credits**

The purpose of this course is to help the students acquire the basic welding skills in oxyacetylene welding, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Plasma Arc Cutting (PAC), and Oxy-Fuel Cutting (OFC). It is a hands-on self-paced learning environment to learn basic welding skills and safe welding practices.

*Restricted to students admitted to the following program(s): 31-461-2*

**442-318 | Related Welding Diesel, Adv // 2 Credits**

The purpose of this course is to help the students acquire advanced welding skills in oxyacetylene welding, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Gas Tungsten Arc Welding (GTAW). It is a hands-on self-paced learning environment to learn advanced welding skills and safe welding practices.

*Prerequisite(s): 442-316 Related Welding for Diesel*

*Restricted to students admitted to the following program(s): 32-412-1*

**442-325 | Shielded Metal Arc Welding // 3 Credits**

Students will learn equipment set up, safe practices and electrode identification as well as perform SMAW welds in flat and horizontal positions in a lab setting.

*Prerequisite(s): 442-303 Metals Technology and 442-307 Welding Print Reading and 442-310 Welding Safety and Orientation*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-327 | Welding Theory // 2 Credits**

Continuation of Metals Technology 1, 442-303, expanding on and covering a variety of technical topics related to the Welding program. Topics will include: material handling, introduction to Welding Procedure Specification (WPS) and certifications. Discussion will also GTAW process, electrode and filler metal.

*Prerequisite(s): 442-303 Metals Technology and 442-325 Shielded Metal Arc Welding and 442-362 Gas Metal Arc Welding*

**442-332 | Welding-Gas Service // 2 Credits**

Position pipe welding utilizing oxyacetylene and gas metal arc welding, welding safety, weld faults and causes, weld joint design, and fitup.

*Restricted to students admitted to the following program(s): 31-469-2*

**442-350 | Pipe Welding & Advanced GTAW // 4 Credits**

Basic pipe welding skills; several types of welds are made in different positions using stick electrodes, wire feed (MIG) and (TIG) welding of stainless steel pipe. (8 weeks)

*Prerequisite(s): 442-310 Welding Safety and Orientation and 442-364 Gas Tungsten Arc Welding and (442-366 Advanced Arc Welding or 442-300 Adv Shielded Metal Arc Welding) and 442-309 Weld Applications & Sense Restricted to students admitted to the following program(s): 32-457-1*

**442-360 | Robotic Welding // 2 Credits**

Safety; setup; programming; and operation of a welding robot. Variables and problems will be studied and solutions applied to provide a practical, efficient application of the GMAW (gas metal arc welding) process to an automated system.

*Prerequisite(s): 442-362 Gas Metal Arc Welding*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-362 | Gas Metal Arc Welding // 4 Credits**

Introduction to Gas Metal Arc Welding (GMAW, wire-feed welding, MIG). Develop skills with solid wire GMAW short-circuit transfer in various positions and joint designs.

*Prerequisite(s): 442-303 Metals Technology and 442-307 Welding Print Reading and 442-310 Welding Safety and Orientation*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1, 61-442-1*

**442-363 | Advanced Gas Metal Arc Welding // 4 Credits**

Continuation of Basic Wire-Feed Welding. Gas Metal Arc Welding (GMAW, wire-feed welding, MIG) using spray transfer, pulse GMAW, flux-cored wire, aluminum, and stainless steel wire on various metals and joint designs. Destructive and nondestructive testing methods; welding codes and certification.

*Prerequisite(s): 442-310 Welding Safety and Orientation and 442-362 Gas Metal Arc Welding*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-364 | Gas Tungsten Arc Welding // 4 Credits**

Gas Tungsten Arc Welding (GTAW, TIG), of aluminum, stainless steels and carbon steels. Weld exercises performed on all three types of material in various positions and joint designs. Purge welding of stainless steel pipe both in the fixed position and rolled flat position.

*Prerequisite(s): 442-303 Metals Technology and 442-327 Welding Theory*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**442-371 | Advanced Robotic Welding // 3 Credits**

This course covers safety, setup, programming, and operation of a welding robot. Variables and problems will be studied and solutions applied to provide a practical, efficient application of the GMAW (gas metal arc welding) process and fixturing to an automated system. There will be the use of coordinated motion and offline programming.

*Prerequisite(s): 442-360 Robotic Welding*

*Restricted to students admitted to the following program(s): 32-457-1*

**442-380 | Industrial Skills Welders // 2 Credits**

In this course the student will develop math skills and job seeking skills of the welding career to meet the demand of today's industry. Application based math topics will address fractions, decimals, fraction conversion to decimals and metric equivalents, geometry and trig formulas as well as algebraic problem solving. The student will use blueprints for layout calculations and technics. The student will also develop job seeking skills such as: employment search, resumes, application forms, and employer interviews.

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1, 61-442-1*

# Industrial Safety

## **449-800 | OSHA Safety Stds-GI // 2 Credits**

This course covers OSHA Standards, policies, and procedures in general industry. Topics include scope and application of the OSHA General Industry Standards, general industry principles and special emphasis on those areas in general industry which are most hazardous. Upon course completion students will have the ability to define general industry terms found in the OSHA General Industry Standards, identify hazards which occur in general industry, locate and determine appropriate OSHA General Industry Standards, policies, and procedures, and describe the use of OSHA General Industry Standards and regulations to supplement an ongoing safety and health program. Earn 2.6 Continuing Education Units.

## **449-801 | Intro to Safety & Health Mgmt // 1 Credits**

This course covers the effective implementation of a company's safety and health management system. The course addresses the four core elements of an effective safety and health management system and those central issues that are critical to each element's proper management. This course is an interactive training session focusing on class discussion and workshops. Upon course completion students will have the ability to evaluate, develop, and implement an effective safety and health management system for their company. 0.55 Continuing Education Unit.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

## **449-802 | Incident Investigation // 1 Credits**

This course covers an introduction to basic accident investigation procedures and describes accident analysis techniques. Course topics include reasons for conducting accident investigations, employer responsibilities related to workplace accident investigations, and a six step accident investigation procedure. The target audience is the employer, manager, employee or employee representative who is involved in conducting accident and/or near-miss investigations. Upon course completion students will have the basic skills necessary to conduct an effective accident investigation at the workplace. 0.75 Continuing Education Unit.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

## **449-803 | Electrical Standards // 1 Credits**

This course covers OSHA Electrical Standards and the hazards associated with electrical installations and equipment. Course topics include single- and three-phase systems, cord- and plug-connected and fixed equipment, grounding, ground fault circuit interrupters, and safety-related work practices. Emphasis is placed on electrical hazard recognition and OSHA Standards, policies, and procedures and applicable portions of the National Electrical Code (NEC). Students will participate in workshops on the safe and correct use of electrical testing equipment. Upon course completion students will have the ability to understand the severity of electrical current on the human body, recognize and evaluate actual and potential electrical hazards and reference the applicable OSHA Standard, determine hazard abatement measures, and understand the proper use of electrical testing equipment. 2.6 Continuing Education Units.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

## **449-807 | Public Warehousing & Storage // 1 Credits**

This course covers the hazards and injuries likely to occur in public warehousing and storage operations, including encounters with powered industrial trucks, material handling, lifting and ergonomics, hazard communication, walking and working surfaces, and life safety including fire protection and evacuation. This course is intended for warehouse workers, supervisors, and employers responsible for developing safe work practices and procedures in a warehouse setting. Upon course completion students will have the ability to recognize the potential for injuries from forklifts, material handling and lifting, exposure to hazardous substances, slips, trips, and falls and methods to control and abate these hazards.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-810 | Evacuation & Emergency Plans // 1 Credits**

This course covers OSHA requirements for emergency action and fire protection plans. Course topics include purpose and requirements of emergency action and fire prevention plans, elements of emergency evacuation plans, and features of design and maintenance of emergency exit routes. Students will participate in workshops pertaining to the development of emergency action plans. Upon course completion students will have the ability to list the elements of an emergency action plan and emergency evacuation floor plans, recognize violations of OSHA exit route requirements, determine whether their organization requires an emergency action plan, and develop and implement workplace emergency action and fire protection plans.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-814 | Recordkeeping & Worker's Comp // 1 Credits**

This course covers OSHA requirements for maintaining and posting records of occupational injuries and illnesses, and reporting specific cases to OSHA. Upon course completion students will have the ability to identify OSHA requirements for record keeping, posting and reporting and to complete OSHA Form 300 Log of Work-Related Injuries and Illnesses, OSHA Form 300A Summary of Work-Related Injuries and Illnesses, and OSHA Form 301 Injury and Illness Incident Report.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-838 | Confined Space Entry & Rescue // 1 Credits**

This course contains a comprehensive description of OSHA's confined space standards. Ventilation, instrumentation, and rescue are also emphasized. Students will also understand what is required of a confined space program.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-839 | LOTO & Machine Guarding // 1 Credits**

This course covers the role and responsibility of the employer to develop and implement an energy control program, or lock-out/tag-out (LOTO) for the protection of workers while performing servicing and maintenance activities on machinery and equipment. This course covers the process to identify, select and properly safeguard machinery to protect employees and others in the work area and deliver appropriate training in safe work practices.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-840 | Hlth Haz/Bloodborne Pathogens // 1 Credits**

This course covers common health hazards that are encountered in the workplace. These health hazards include exposure to chemicals, asbestos, silica and lead. Further, this course talks about bloodborne pathogens and associated requirements. Course topics also include identification and evaluation of health hazards and their sources of exposure, health hazard information, and engineering and work practice controls. Students participate in workshops on evaluation and abatement of workplace health hazards. Upon course completion students will have the ability to understand common health hazards in the workplace and methods for controlling and abatement of these hazards.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-841 | Safety Training & Development // 1 Credits**

Education and training are important tools for informing workers and managers about workplace hazards and controls so they can work more safely and be more productive. Education and training provides employers, managers, supervisors, and workers with knowledge and skills needed to do their work safely and avoid creating hazards that could place themselves or others at risk. This course covers what makes one an effective trainer, and further discusses who needs what in regards to OSHA compliance.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-842 | Hazardous Materials // 1 Credits**

This course covers OSHA General Industry Standards and other consensus and proprietary standards that relate to the use of hazardous materials. Course topics include flammable and combustible liquids, compressed gases, LP-gases, and cryogenic liquids. Related processes such as spraying and dipping, and use of electrical equipment in hazardous locations are also discussed. Upon course completion students will have the ability to assess compliance with OSHA hazardous materials standards, determine hazardous (classified) locations, and proper moving, storing, and handling of hazardous materials.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-843 | Ergonomic Fundamentals // 1 Credits**

Ergonomics is often defined as how people interact with their work. This course focuses on the fundamentals of fitting the workstation to people that function with it. Students will also gain an understanding of the consequences of not working within the human's abilities and limitations.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

**449-844 | WWS & Fall Protection // 1 Credits**

Course includes principles of fall protection, components and limitations of fall arrest systems, and OSHA Standards and policies regarding fall protection. Students will understand the inspection requirements, and developing a fall protection program. Upon course completion students will have the ability to assess compliance with the OSHA Fall Protection Standard, evaluate, and develop and implement fall protection plans. In addition, the course will also provide an overview of OSHA's Walking-Working Surfaces standard.

*Prerequisite(s): 449-800 OSHA Safety Stds-GI*

## Metal Fabrication

**457-300 | Fabrication // 3 Credits**

Students will be introduced to and apply basic metal fabrication and layout principles in a lab setting following safe lab practices and working off welding prints.

*Prerequisite(s): 442-310 Welding Safety and Orientation and 442-362 Gas Metal Arc Welding and 442-325 Shielded Metal Arc Welding and 442-307 Welding Print Reading*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**457-305 | CNC Fabrication // 2 Credits**

Student will obtain the knowledge of operating different CNC metal fabrication on equipment that pertains to the welding industry. Emphasis will be placed on safety, start-up, loading, and efficient operation of the CNC plasma table, CNC shear, CNC brake press, and other related equipment to fabricate and assemble projects.

*Prerequisite(s): 457-300 Fabrication*

*Restricted to students admitted to the following program(s): 31-442-1, 32-457-1*

**457-320 | Adv Processes and Fixturing // 4 Credits**

Students will gain a better understanding of and utilize practical applications of CNC plasma tables, water jet cutting systems, programming and nesting software, use of fixtures, and how to design with intent. Students will cut and bend files along with fixturing plans to be implemented in the Advanced Fabrication course.

*Corequisite(s): 457-322 Advanced Fabrication, 457-324 Advanced Fabrication Theory*

*Restricted to students admitted to the following program(s): 32-457-1*

### **457-322 | Advanced Fabrication // 4 Credits**

Students will model real world fabrication. Students will design, cut, bend, fixture, assemble, and weld projects according to industry specifications as well as their own custom projects in a timely matter. Projects will require the use of specific equipment: tube bender, plate roller, CNC cutting, CNC sheet bending, modular fixturing table and tooling, and utilize programming and software.

*Corequisite(s): 457-320 Adv Processes and Fixturing, 457-324 Advanced Fabrication Theory*

*Restricted to students admitted to the following program(s): 32-457-1*

### **457-324 | Advanced Fabrication Theory // 2 Credits**

This course is designed to solve all real world math problems applied in Advanced Fabrication course. Math problems directly related to student projects. Students will also learn fabrication shortcuts, safety and uses of fabrication specific tooling, and fabrication theories to help students predict certain variables that occurs during fabrication and needs to be considered when designing with intent.

*Corequisite(s): 457-320 Adv Processes and Fixturing, 457-322 Advanced Fabrication*

*Restricted to students admitted to the following program(s): 32-457-1*

### **457-372 | NDT and Welding Codes // 2 Credits**

Students will learn that Nondestructive Testing (NDT) is a very broad, interdisciplinary field that plays a critical role in assuring that structural components and systems meet specified requirements. NDT allows parts and materials to be inspected and measured without damaging them and provides an excellent balance between quality control and production. Students will apply the inspection and production processes according to the welding codes used in industry.

*Prerequisite(s): 442-309 Weld Applications & Sense*

*Restricted to students admitted to the following program(s): 32-457-1*

## **Commercial Driving**

### **458-307 | CDL License Training-Online // 2 Credits**

Provides current rules and regulations training regarding driving a tractor-trailer through online delivery.

*Restricted to students admitted to the following program(s): 10-091-7, 10-093-9, 31-093-3, 31-469-2, 32-412-1*

### **458-308 | CDL License Training-Pre-Trip // 1 Credits**

Provides skills related to earning a CDL for students whose primary career is not driving. Pre-trip inspection procedures and backing exercises.

*Prerequisite(s): 458-307 CDL License Training-Online and (458-309 CDL License Training - Lab or 458-310 CDL Lab Pintle Hook Restrict)*

### **458-309 | CDL License Training - Lab // 1 Credits**

Provides skills related to earning a CDL for students whose primary career is not driving. Pre-trip inspection, backing, shifting and driving techniques with a tractor trailer are covered.

*Prerequisite(s): 458-307 CDL License Training-Online and 458-308 CDL License Training-Pre-Trip*

### **458-310 | CDL Lab Pintle Hook Restrict // 1 Credits**

Provides skills related to earning a CDL for students whose primary career is not driving. Pre-trip inspection, backing, shifting and driving techniques with a Class A-Pintle Hook Restriction are covered.

*Prerequisite(s): 458-307 CDL License Training-Online and 458-311 CDL License Pre-trip Restrict*

**458-311 | CDL License Pre-trip Restrict // 1 Credits**

Provides skills related to earning a CDL for students whose primary career is not driving. Pre-trip inspection procedures and backing exercises. Designed for Pintle Hook restrictions.

*Restricted to students admitted to the following program(s): 31-469-2*

**458-341 | Truck Driving 1 // 4 Credits**

Covers the laws pertaining to the operation of a commercial motor vehicle (CMV). This course also focuses on how to properly inspect a CMV and how to operate one safely. Each student progresses according to his or her own abilities with the assistance of an instructor. Student must be 18 years of age when class begins. This course is not eligible for financial aid.

*Corequisite(s): 458-342 Truck Driving 2, 458-343 Truck Driving 3, 458-344 Truck Driving 4*

*Restricted to students admitted to the following program(s): 30-458-1*

**458-342 | Truck Driving 2 // 3 Credits**

Focuses on understanding the paperwork connected with the trucking industry. This course also covers communication skills and security issues. Student must be 18 years of age when class begins. This course is not eligible for financial aid.

*Corequisite(s): 458-341 Truck Driving 1, 458-343 Truck Driving 3, 458-344 Truck Driving 4*

*Restricted to students admitted to the following program(s): 30-458-1*

**458-343 | Truck Driving 3 // 3 Credits**

Further prepares students to obtain a commercial driver's license. Learners have the opportunity to plan trips and manage loading procedures. Weight distribution techniques and security issues are also discussed. Student must be 18 years of age when class begins. This course is not eligible for financial aid.

*Corequisite(s): 458-341 Truck Driving 1, 458-342 Truck Driving 2, 458-344 Truck Driving 4*

*Restricted to students admitted to the following program(s): 30-458-1*

**458-344 | Truck Driving 4 // 2 Credits**

Focuses on continuous improvement. This course is designed for students who have successfully obtained a commercial driver's license. Operating skills and the role of a professional truck driver are stressed. Student must be 18 years of age when class begins. This course is not eligible for financial aid.

*Corequisite(s): 458-341 Truck Driving 1, 458-342 Truck Driving 2, 458-343 Truck Driving 3*

*Restricted to students admitted to the following program(s): 30-458-1*

## Small Engine & Chassis Mec

**461-310 | Basic Engines/Systems,Intro to // 5 Credits**

This course is a prerequisite for all snowmobile/ATV, marine outboard, and marine inboard courses. It includes safety, precision instruments and engine basics, carburetor and EFI theory, service and testing, electrical and ignition theory, and service procedures. Factory certification is obtained on Briggs and Stratton power equipment. This course requires the purchase of approximately \$1,500 in tools and/or equipment.

*Prerequisite(s): 461-315 Engine Theory 1A*

*Restricted to students admitted to the following program(s): 31-461-2*

**461-313 | Engine Theory 2 // 2 Credits**

This course is a continuation of Engine Theory 1. Students will receive instruction that corresponds with the type of engine class they are currently enrolled in.

*Prerequisite(s): 461-310 Basic Engines/Systems,Intro to and 461-315 Engine Theory 1A and 461-316 Engine Theory 1B*

**461-314 | Engine Theory 3 // 1 Credits**

This course is a continuation of Engine Theory 1 and Engine Theory 2. Students will receive instruction that corresponds with the last type of engine class required to complete the program.

*Prerequisite(s): 461-310 Basic Engines/Systems, Intro to and 461-313 Engine Theory 2*

**461-315 | Engine Theory 1A // 1 Credits**

This course will provide the student with basic knowledge of concepts and principles in the design and operation of small engines and surrounding components.

*Prerequisite(s): 461-310 Basic Engines/Systems, Intro to*

*Restricted to students admitted to the following program(s): 31-461-2*

**461-316 | Engine Theory 1B // 1 Credits**

This course will provide the students with basic knowledge of concepts and principles in the design and operation of Marine Outboards and surrounding components.

*Prerequisite(s): 461-310 Basic Engines/Systems, Intro to and 461-315 Engine Theory 1A*

*Restricted to students admitted to the following program(s): 31-461-2*

**461-317 | Electricity for Powersports 1 // 1 Credits**

A course of study designed to provide the student with the skills needed to understand electrical fundamentals, including electrical/electronic terminology, electrical components, circuits, measurements, and Ohm's Law relationships. Classroom instruction and hands-on training are provided on how to use electrical wiring diagrams, component locators, and basic testing using industry standard tools to identify and isolate 'open,' 'short' and 'high resistance' faults in Powersports electrical system circuits.

*Prerequisite(s): 461-316 Engine Theory 1B*

**461-318 | Electricity for Powersports 2 // 1 Credits**

A course of study designed to provide the student with the skills needed to understand electrical fundamentals, including electrical/electronic terminology, electrical components, circuits, measurements, and Ohm's Law relationships. Classroom instruction and hands-on training are provided on how to use electrical wiring diagrams, component locators, and basic testing using industry standard tools to identify and isolate 'open,' 'short' and 'high resistance' faults in Powersports electrical system circuits. Powersports electrical circuits are studied with related lab work involving locating/replacing circuit components, wire & terminal repair using industry-approved techniques; battery diagnosis, component testing and replacement; and electric cooling fan diagnosis.

*Prerequisite(s): 461-316 Engine Theory 1B*

*Corequisite(s): 461-317 Electricity for Powersports 1*

**461-319 | Transmission and Final Drives // 1 Credits**

A course of study designed to provide the student with the skills needed to diagnose, service, and repair manual transmissions and automatic transmissions and final drive. Coursework includes: hydraulic clutches, gearboxes, manual and automatic transmission theory and application, and the repair and overhaul of a manual transmission.

*Prerequisite(s): 461-340 Marine Inboards*

**461-320 | Snowmobiles & ATVs // 5 Credits**

This course is designed to give the student the fundamentals of the snowmobile/ATV fuel, electrical, clutch, chassis, engine, and tune-up of a snowmobile/ATV. It covers integral and external fuel pump types, both engine and chassis electrical systems, drive and driven clutch assemblies, front- and rear-suspension types, and track assembly service.

*Prerequisite(s): 461-310 Basic Engines/Systems, Intro to and 461-315 Engine Theory 1A and 461-316 Engine Theory 1B*

### **461-330 | Marine Outboards // 5 Credits**

This course will give the student a fundamental understanding of marine and outboard fuel, cooling, power trim unit, gear case assemblies, powerhead rebuilding, dyno testing, and ignition systems. The course includes both Mercury and Outboard Marine Corporation fuel, cooling system theory, water pump rebuilding, tank testing, power trim and tilt service and overhaul, gear case rebuilding, shimming and testing of various gear cases, disassembly measuring, and reassembly of various powerheads. Students will evaluate horsepower, throttle response, and troubleshooting by dyno testing, point-coil, battery, CDI ignition theory and identification, operating various test equipment, and diagnosing ignition components.

*Prerequisite(s): 461-316 Engine Theory 1B*

### **461-340 | Marine Inboards // 5 Credits**

This course is designed to give the student a fundamental understanding of marine inboard/outboard outdrive service. It covers four-cylinder, six-cylinder, and eight-cylinder marine engine tune-up, battery ignition and transistorized ignition systems service and maintenance, service procedures for cylinders, pistons, rings, connecting rods, cylinder heads, and valve trains, complete overhaul of outdrive, shimming of gears, dyno testing for performing winterization of powerhead, lower units, fuel systems, and electrical systems.

*Prerequisite(s): 461-330 Marine Outboards and 461-315 Engine Theory 1A and 461-316 Engine Theory 1B*

### **461-360 | Motorcycles // 5 Credits**

This course is designed to give the student the fundamentals of motorcycle fuel, oil, electrical, clutch, frame, engine, wheels, suspension, and brakes. It covers pre-delivery and maintenance procedures, engine and transmission systems, clutch and belt, chain and shaft drive systems.

*Prerequisite(s): 461-310 Basic Engines/Systems, Intro to and 461-315 Engine Theory 1A and 461-316 Engine Theory 1B*

## **Industrial Equipment Mech**

### **462-111 | Mechanical Concepts // 2 Credits**

In this course the learner will apply mechanical concepts to systems that are found on industrial equipment. The learner will examine various drive systems used in a broad range of applications. Demonstration in the proper use of hand tools, proper alignment, and safe working habits will be emphasized.

*Prerequisite(s): 462-119 Industrial Mechanical Skills*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2, TC-462-2*

### **462-115 | Industrial PC Network Concepts // 2 Credits**

In this course the learner develops skills working with PCs to interface with external devices. The learner produces documents using the latest software tools and shares those documents through various mediums. The learner explores a variety of network configurations and protocols.

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2*

### **462-118 | Industrial Electric Principles // 3 Credits**

In this course the student will learn the fundamental theory and application of DC and AC electrical circuits, industrial three-phase motor control circuits, electrical wiring, troubleshooting and testing common electrical control circuits found in industry.

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-1, 31-462-2*

**462-119 | Industrial Mechanical Skills // 2 Credits**

In this course the learner will develop precision measurement and applied math skills to meet the demand of today's industry. Application based math topics will address fractions, decimals, fraction conversion to decimals and metric equivalents, geometry, as well as algebraic problem solving. The learner will use gauges; micrometers dial calipers and other measurement devices.

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2*

**462-120 | Centrifugal Pumps & Alignment // 3 Credits**

This course is designed to give the student understanding and experience with various types of industrial pumps and drive mechanisms. Basic understanding of centrifugal pumps, theory of operation, installation, maintenance and troubleshooting of pumps and their systems. Students will work with Laser Alignment, and advanced linear slides and brakes and clutches. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 462-126 Mechanical Alignment & Bearing*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-1, 31-462-2, TC-462-2*

**462-121 | IOT Automated Manufacturing // 4 Credits**

This course provides the learner with practical experience in automated equipment operation, troubleshooting, and repair. Topics include Lock-out/Tag-out procedures, motor and drive systems, and the setup and maintenance of industrial machinery, including PLCs and conveyor systems. Learners will engage in hands-on projects focusing on functional analysis, fault diagnosis, and component repair. Additionally, the course explores basic network connectivity and Industrial Internet of Things (IoT) applications.

*Prerequisite(s): 462-118 Industrial Electric Principles*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-1, 31-462-2, TC-462-3*

**462-122 | Prev and Periodic Maintenance // 1 Credits**

This course is designed to give the student the opportunity to research the items to be inspected in a preventive maintenance program. Students develop preventive maintenance schedules and perform actual inspections of mechanical, fluid power, and electrical systems. Techniques for troubleshooting and predictive diagnostics are explored.

*Prerequisite(s): 462-111 Mechanical Concepts*

*Restricted to students admitted to the following program(s): 10-462-1, 31-462-2*

**462-123 | PLC Manufacturing Applications // 3 Credits**

This course is designed to use the basic and advanced electrical and electronic control devices in control simulated and actual automated industrial machines. Set up, operation, and system troubleshooting of PLC and, Internet of Things (IoT) devices will be emphasized. PLC operations, programming and troubleshooting. Connectivity to Internet of Things (IoT) with Industrial controls components will be investigated.

*Prerequisite(s): 462-121 IOT Automated Manufacturing*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-1, 31-462-2, TC-462-3*

**462-126 | Mechanical Alignment & Bearing // 2 Credits**

This course is designed to give the student a basic understanding of the mechanical concepts that are found on industrial equipment. Topics focus on alignment of shafts, and correct servicing of bearings. Since all industrial machinery is equipped with some type of mechanical drive, a firm understanding of these drives is necessary for the industrial mechanic. Cleanliness and safe working habits will also be emphasized.

*Prerequisite(s): 462-111 Mechanical Concepts and 462-119 Industrial Mechanical Skills*

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-1, 31-462-2, TC-462-2, TC-462-4*

**462-130 | Mfg Prints & Networks // 1 Credits**

This course prepares students to create and interpret technical documents. Identifying symbols in electrical, networking/Internet of Things (IoT), piping, hydraulic, pneumatic, HVAC and sketching diagrams is addressed. Students create job related written documents (such as work orders and resumes) to meet the needs of the industry.

*Restricted to students admitted to the following program(s): 10-462-1, 30-462-2, 31-462-2, TC-462-2*

**462-131 | Machine Trblshoot Practicum // 2 Credits**

This course is designed to give the student understanding and experience in machine troubleshooting. Methods of analyzing equipment failure will be investigated. Techniques for machine repair will be performed with the integration of each of four major disciplines in machine operation. The course is presented in the individual study mode to allow the students flexibility in scheduling their time.

*Prerequisite(s): 462-120 Centrifugal Pumps & Alignment and 462-121 IOT Automated Manufacturing and 462-122 Prev and Periodic Maintenance and (462-123 PLC Manufacturing Applications and 462-124 Industrial Mechanics Document)*

**462-132 | Mach Trbleshting & Repair Adv // 2 Credits**

This course is designed to develop the troubleshooting process applied to electrical, mechanical, hydraulic, pneumatic, and networked / Internet of Things (IoT) equipment. System and component troubleshooting applying top-down, divide-conquer, and backward approaches are covered. Learners will test and repair systems at the component, system and network level.

*Prerequisite(s): 462-120 Centrifugal Pumps & Alignment and (462-123 PLC Manufacturing Applications and 419-102 Hydraulic System Operations and 419-118 Pneumatic System Operations)*

*Restricted to students admitted to the following program(s): 10-462-1, 31-462-2*

**462-140 | Piping Systems // 2 Credits**

This course is designed to give the student understanding and experience on how to select, size, identify, and install a variety of piping, fittings and valves used in air, water and other process systems. Topics include iron pipe, steel tubing, hydraulic hose, plastic pipe, copper tubing and globe, gate, check and Sloan valves.

*Prerequisite(s): 462-120 Centrifugal Pumps & Alignment*

*Restricted to students admitted to the following program(s): 10-462-1*

**462-141 | Process Ctrl & Wtr Trtmnt Sys // 2 Credits**

Course provides a “hands-on” approach to the study of fluid handling systems. A wide variety of system components including pumps, piping, seals and packing, flow control devices, flow measuring devices and pressure vessels will be studied. Practice of installation, alignment, servicing and troubleshooting of process systems.

*Prerequisite(s): 462-120 Centrifugal Pumps & Alignment and 462-123 PLC Manufacturing Applications and 462-140 Piping Systems*

*Restricted to students admitted to the following program(s): 10-462-1*

**462-150 | Building System Maintenance // 2 Credits**

This course is designed to give the student an understanding of heating, cooling, lighting, security and other systems found in facility maintenance. Preventive maintenance, ordering, rigging considerations are examined.

*Prerequisite(s): 462-123 PLC Manufacturing Applications*

*Restricted to students admitted to the following program(s): 10-462-1*

### **462-151 | New Technologies in Ind. Maint // 2 Credits**

Technology continues to change the Industrial Maintenance landscape. This course will explore new technologies, update skills and determine the benefits of new processes. Topics will reflect the needs of industry in relation to advances in Controls, PLC's, Motor/Drives, Process Control and hybrid technologies used in industry.

*Prerequisite(s): 462-120 Centrifugal Pumps & Alignment and 462-123 PLC Manufacturing Applications and 462-150 Building System Maintenance*

*Restricted to students admitted to the following program(s): 10-462-1*

## **Petroleum Chemical Service**

### **469-302 | Gas Utility Field Training 1 // 5 Credits**

In this course we will begin our look at the construction equipment safety and operation (shovel, trenching, plowing, mini-ex digging, backhoe, boring), equipment maintenance, gas safety and vehicular safety. We will begin our learning about backfilling and restoration after a project. We will begin our learning about fusing plastic pipe to create leak free joints using butt fusion and introducing socket fusion. We will introduce industry standard Computer Based training and testing as a class.

*Prerequisite(s): 469-315 Gas Utility Industry Skills*

### **469-304 | Gas Utility Field Training 2 // 5 Credits**

We will continue our learning about creating leak free joints in plastic pipe using butt fusion, electrofusion, socket fusion, and saddle fusion. Natural gas line installation and standards for plastic pressure testing, fusion, leak detection procedures, general installation procedures and repair of plastic mains and services, as well as mapping GIS systems. We will begin our look at pressure regulation. We will learn about the process and procedures for pipe stoppage in various scenarios. We will learn gas metering. We will continue with the industry standard Computer Based training and testing both as a class and individually.

*Prerequisite(s): 469-302 Gas Utility Field Training 1 and 469-306 Gas Utility Field Training 3 and 469-340 Basic Elect for Gas Utility*

### **469-306 | Gas Utility Field Training 3 // 5 Credits**

Installation and repair of Propane tanks and services, maintenance, line testing and leak detection procedures, approved safety installation procedures using hand tools and supportive equipment. We will introduce the importance of customer service in the Propane and Natural Gas industries. We will begin our look at residential house piping and continue our look at pressure regulation for both Natural Gas and Propane. We will introduce the industry standard Computer CETP training and testing.

*Prerequisite(s): 469-304 Gas Utility Field Training 2 and 469-340 Basic Elect for Gas Utility*

### **469-310 | Gas Utility Field Training 4 // 5 Credits**

This class continues to build upon skills learned in previous courses to include installation, maintenance, and repair of residential gas piping, line stoppering equipment, advanced corrosion control and regulators, more on metering, personal money management, and a deeper understanding of customer service training. We will be using industry standard online learning and testing as well as hands-on learning opportunities. We will continue our computer-based training and testing as practiced in the industry.

*Prerequisite(s): 469-306 Gas Utility Field Training 3 and 601-341 Basics of Gas Appliances*

### **469-315 | Gas Utility Industry Skills // 1 Credits**

In this course you will develop skills relevant to the gas utility construction and service industry. Students will develop job seeking skills and applied problem solving techniques.

*Prerequisite(s): 469-302 Gas Utility Field Training 1*

### **469-340 | Basic Elect for Gas Utility // 1 Credits**

Electron theory, electrical terms, Ohm's Law, DC and AC circuits, magnetism and magnetic devices, electrical measurements, inductance and capacitance. We will focus on Cathodic Protection systems including rectifiers and how we use electricity to protect metal pipes both in the ground and above ground from leaks caused by corrosion.

*Prerequisite(s): 469-315 Gas Utility Industry Skills and 469-304 Gas Utility Field Training 2 and 469-306 Gas Utility Field Training 3*

## **Construction Worker**

### **475-103 | Construction Safety // 2 Credits**

This is a course that starts 2 weeks before the fall semester program courses for Residential Construction. This course is a prerequisite to all Residential Construction Courses and the student will need to pass the Construction Safety course to start the remaining first semester courses. The major emphasis will be on machine, power, and hand tool safety. Job site safety, ladders, scaffolding, and Occupational Safety and Health Administration (OSHA) standards will also be covered. This course also introduces the student to the basic methods of floor, wall, and basic roof framing. The students will build small storage sheds for the main lab projects. Students will also complete an OSHA 10-hour general construction training course. Certificate awarded on completion of training.

*Restricted to students admitted to the following program(s): 31-475-3*

### **475-108 | Construction Industry Skills // 1 Credits**

This course is designed to teach the student specific construction math skills and employment skills related to the Residential Construction Industry.

*Prerequisite(s): 475-103 Construction Safety*

*Corequisite(s): 475-109 Framing Methods/Bldg the Envel, 475-111 Frmng Mthds/Bldng the Envl Lab, 475-112 Const Basics & Print Reading, 475-115 Roof Systems and Stairs*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

### **475-109 | Framing Methods/Bldg the Envel // 3 Credits**

This is a first-semester course with an emphasis on residential construction. Fundamentals of planning, layout, and rough framing are basic to the course. This course introduces the student to the basic methods of floor framing with dimensional lumber, joists, and floor trusses. Proper methods of wall framing and sheathing installation are covered. Proper methods of producing a well-built, air-tight home will be covered in this course. It will cover proper home seal up, window and door installation, insulation, ventilation, and the importance of the drainage plane behind siding. At the conclusion of this course, the students should have developed the skills to frame a structure and apply the "Energy Star and Green Certification" requirements to residential construction.

*Prerequisite(s): 475-103 Construction Safety*

*Corequisite(s): 475-108 Construction Industry Skills, 475-111 Frmng Mthds/Bldng the Envl Lab, 475-112 Const Basics & Print Reading, 475-115 Roof Systems and Stairs*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

**475-111 | Frmng Mthds/Bldng the Envl Lab // 5 Credits**

Students will develop skills and apply concepts and practices from the areas outlined in the course 475-110 Framing Methods/Building the Envelope. In this course, the installation of the roof system at the on-site project will be done. The main lab project is the construction of a single or multi-family dwelling on a real job site. At the conclusion of this course, students should have developed skills to frame a structure and apply the “Energy Star and Green Certification” requirements to residential construction.

*Prerequisite(s): 475-103 Construction Safety*

*Corequisite(s): 475-108 Construction Industry Skills, 475-109 Framing Methods/Bldg the Envel, 475-112 Const Basics & Print Reading, 475-115 Roof Systems and Stairs*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

**475-112 | Const Basics & Print Reading // 2 Credits**

During this course you will start with basic construction language, symbols, and print reading fundamentals. The main emphasis of this course will be to prepare the students to function at the job site when reading and interpreting construction drawings and framing plans. Proper use of the architect’s scales and their uses will be taught. Applied math skills used in the construction industry will be covered as well.

*Prerequisite(s): 475-103 Construction Safety*

*Corequisite(s): 475-108 Construction Industry Skills, 475-109 Framing Methods/Bldg the Envel, 475-111 Frmng Mthds/Bldng the Envl Lab, 475-115 Roof Systems and Stairs*

*Restricted to students admitted to the following program(s): 31-475-3*

**475-115 | Roof Systems and Stairs // 3 Credits**

The major emphasis of this course will be on roof systems from hand framing simple gable roofs to advanced intersecting roofs using trusses. The students will calculate the math, layout and cut practice hand framed rafters. They will be involved with many different types of roof problems including hip and valley roof systems. Understanding and installing truss packages at the on-site project is also included. Stair system’s layout and design to proper installation will be covered. Stair terminology and the application of the building codes also taught. The students will calculate, layout and cut practice stair stringers in the lab. Design, layout and installing of the stair systems at the on-site project is also included.

*Prerequisite(s): 475-103 Construction Safety*

*Corequisite(s): 475-108 Construction Industry Skills, 475-109 Framing Methods/Bldg the Envel, 475-111 Frmng Mthds/Bldng the Envl Lab, 475-112 Const Basics & Print Reading*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

**475-119 | Finish Carpentry Int/Ext // 3 Credits**

This course introduces the student to the basic methods of selecting and installing interior trim, doors, and cabinets. Layout and installation of finish stair materials and decorative railings will also be taught. Material selection and the product installation requirements will be covered. This course also introduces the student to the basic methods of selecting and installing exterior soffit and wall finishes as well as building decks. Material selections and the different installation requirements will be covered. At the conclusion of this construction of a single or multi-family dwelling on a real job site.

*Prerequisite(s): 475-103 Construction Safety and 475-108 Construction Industry Skills and 475-109 Framing Methods/Bldg the Envel and 475-111 Frmng Mthds/Bldng the Envl Lab and 475-112 Const Basics & Print Reading and 475-115 Roof Systems and Stairs*

*Corequisite(s): 475-121 Finish Carpentry Int/Ext Lab, 475-124 Construction Planning, 475-125 Est Residential Construction*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

#### **475-120 | Finish Carpentry Int/Ext // 4 Credits**

This course introduces the student to the basic methods of selecting and installing interior trim, doors, and cabinets. Layout and installation of finish stair materials and decorative railings will also be taught. Material selection and the product installation requirements will be covered. This course also introduces the student to the basic methods of selecting and installing exterior soffit and wall finishes as well as building decks. Material selections and the different installation requirements will be covered. At the conclusion of this construction of a single or multi-family dwelling on a real job site.

*Prerequisite(s): (475-103 Construction Safety or 475-105 Explore Construction Safety or 475-100 Construction Safety) and 475-110 Frming Mthds/Bldng the Envlpe and 475-111 Frmng Mthds/Bldng the Envl Lab and 475-112 Const Basics & Print Reading and 475-115 Roof Systems and Stairs*

*Corequisite(s): 475-121 Finish Carpentry Int/Ext Lab, 475-124 Construction Planning, 475-125 Est Residential Construction*

#### **475-121 | Finish Carpentry Int/Ext Lab // 5 Credits**

This course introduces the student to the basic methods of selecting and installing interior trim, doors, and cabinets. Layout and installation of finish stair materials and decorative railings will also be taught. Material selections and the product installation requirements will be covered. This course also introduces the student to the basic methods of selecting and installing exterior soffit and wall finishes as well as building decks. Material selections and the different installation requirements will be covered. At the conclusion of this course, the student should have developed the skills to finish the interior/exterior of most residential buildings.

*Prerequisite(s): 475-103 Construction Safety and 475-108 Construction Industry Skills and 475-109 Framing Methods/Bldg the Envel and 475-111 Frmng Mthds/Bldng the Envl Lab and 475-112 Const Basics & Print Reading and 475-115 Roof Systems and Stairs and (475-119 Finish Carpentry Int/Ext and 475-124 Construction Planning and 475-125 Est Residential Construction)*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

#### **475-124 | Construction Planning // 2 Credits**

Construction planning involves the many facets of residential design and construction. Building standards, design and structural loading is taught. Building requirements for “Energy Star Homes” and “Green Built” certification will be covered in this course. Kitchen planning, window schedules, and reading plot plans and site elevations are taught.

*Prerequisite(s): 475-103 Construction Safety and 475-108 Construction Industry Skills and 475-109 Framing Methods/Bldg the Envel and 475-111 Frmng Mthds/Bldng the Envl Lab and 475-112 Const Basics & Print Reading and 475-115 Roof Systems and Stairs*

*Corequisite(s): 475-119 Finish Carpentry Int/Ext, 475-121 Finish Carpentry Int/Ext Lab, 475-125 Est Residential Construction*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

#### **475-125 | Est Residential Construction // 3 Credits**

This course is designed to introduce learners to the basic methods of estimating light building construction. It aims to develop a system for doing quantity take-offs of material, emphasizing all the house build parts, applications of materials, and costs associated for a residential build.

*Prerequisite(s): 475-103 Construction Safety and 475-108 Construction Industry Skills and 475-109 Framing Methods/Bldg the Envel and 475-111 Frmng Mthds/Bldng the Envl Lab and 475-112 Const Basics & Print Reading and 475-115 Roof Systems and Stairs*

*Corequisite(s): 475-119 Finish Carpentry Int/Ext, 475-121 Finish Carpentry Int/Ext Lab, 475-124 Construction Planning*

*Restricted to students admitted to the following program(s): 10-475-1, 31-475-3*

**475-130 | Innovative Building Systems // 2 Credits**

This course introduces the student to new innovative methods and materials for building home that are strong, durable, energy efficient and environment friendly. It will cover foundation products like insulated concrete foundation's (ICF's) Thermo mass walls, precast insulated concrete walls to wood foundations. Energy efficient wall design as well as structural details and methods will be taught. New products such as structural insulated panel walls (SIP's) walls and methods for building tall walls will be covered. Advanced roof system design and insulation methods will also be covered. At the conclusion of this course, the students should have developed the skills to apply new methods and technologies to projects, test the design of the house for performance standards prior to construction using software, and implement certification requirements for "New Homes Program".

*Restricted to students admitted to the following program(s): 10-475-1*

**475-131 | Mech/Electr/Plumb System // 2 Credits**

This course introduces the student to the mechanical systems used in construction projects. The basic principles of heating, electrical, and plumbing as well as the building code requirements for each will be covered in this course. At the conclusion of this course, the students should have developed an understanding of the mechanical areas of a project and be able to apply that knowledge to a construction project.

*Restricted to students admitted to the following program(s): 10-475-1*

**475-132 | Proj Coordination & Scheduling // 2 Credits**

This course will train students the proper procedures and sequence of events involved in running residential and light commercial construction projects. The students will learn how to efficiently schedule, communicate, and coordinate all the events involved in the construction process. It will cover material handling, subcontractors, labor, and customer relations. At the conclusion of the course, the student should have developed skills necessary to facilitate the building process.

*Restricted to students admitted to the following program(s): 10-475-1*

**475-133 | CAD Basics-Residential Design // 2 Credits**

This course is designed to teach students residential design using computer-aided drafting with SoftPlan-Architectural Design Software. The students will learn residential design processes as well as how the system operates, basic entity creation, modifying operations, text styles, dimensioning, blocks, plotting, 3 dimensional visual displays, plotting, etc. At the conclusion of the course, the student will have developed basic skills relating to computer aided drafting and should be able to use SoftPlan on residential design projects.

*Restricted to students admitted to the following program(s): 10-475-1*

**475-140 | Const Proposals & Contracts // 2 Credits**

This course will train students in the processes and procedures involved in running residential and light commercial construction projects. This course will give the students a better understanding of how to properly handle construction documents from an organization standpoint. It will cover job proposals and specifications, construction contracts, change orders, insurance issues and dealing with banks. At the conclusion of the course, the student should have developed skills to write proposals and understand legal documents used in residential construction projects.

*Corequisite(s): 475-141 Adv Estimation & Software Sys*

*Restricted to students admitted to the following program(s): 10-475-1*

**475-141 | Adv Estimation & Software Sys // 3 Credits**

This course is designed to teach the students proper methods of estimating light building construction. It will cover materials, labor, subcontracts, overhead, and profit. The students will also complete estimates using estimating software. At the conclusion of this course, the student should have developed the skills to estimate complete residential or light commercial projects.

*Restricted to students admitted to the following program(s): 10-475-1*

### **475-145 | Residential Const Internship // 1 Credits**

This course is designed to teach students how the actual construction environment works and the skills necessary to operate in a fast-paced jobsite setting.

## **Medical Terminology**

### **501-101 | Medical Terminology // 3 Credits**

This course focuses on the component parts of medical terms: prefixes, suffixes, and word roots. Students practice formation, analysis, and reconstruction of terms. Emphasis on spelling, definition, and pronunciation. Introduction to operative, diagnostic, therapeutic, and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

### **501-104 | Contemporary Healthcare Prac // 2 Credits**

An introduction to the culture of health care for students interested in working in various health care settings. Learners examine professionalism, interpersonal and written communication skills, problem-solving skills and patient privacy and confidentiality issues as they relate to health care.

### **501-107 | Digital Literacy Healthcare // 2 Credits**

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.

*Restricted to students admitted to the following program(s): 20-800-2, 30-509-2, 30-534-1, 31-509-1*

### **501-112 | Introduction to Public Health // 3 Credits**

A survey and analysis of current public health problems incorporating an epidemiologic framework. A basic introduction to community health history and organization is followed by specific health issues analyzed through the agent, host, and environmental interrelationships. Primary, secondary and tertiary prevention, and health promotion strategies are detailed.

### **501-130 | Healthcare IT // 2 Credits**

Learners explore the use of technology in healthcare, including common business software applications, healthcare databases, administrative and clinical information systems, and the electronic health record (EHR). Learners use EHR simulation software to perform administrative and clinical documentation functions. Health information privacy and security regulations (HIPAA) and the EHR patient portal are examined.

*Corequisite(s): 530-107 HIMT Fundamentals*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, TC-530-6*

### **501-308 | Pharmacology for Allied Health // 2 Credits**

Introduces students to classifying medications into correct drug categories and applying basic pharmacology principles. Students apply basic pharmacodynamics to identifying common medications, medication preparation, and administration of medications used by the major body systems.

*Prerequisite(s): 509-302 Human Body in Health & Disease and 509-304 Medical Asst Clin Procedures 1*

*Corequisite(s): 509-306 Med Asst Clin Procedures 2*

*Restricted to students admitted to the following program(s): 30-509-4, 31-509-1*

## Barbering/Cosmetology

### **502-103 | Aesthetic Health & Safety // 2 Credits**

This course introduces the laws and ethical practices of aesthetics. The learner will explore professional ethics, standards of practice, and legal requirements in the field. Learners will demonstrate knowledge of safety for themselves, clients, and equipment. The course also explores the historical and cultural perspectives of aesthetic practice and emphasizes professional development.

*Corequisite(s): 502-104 Intro to Facial Theory & Skill, 502-105 Anatomy & Phys Aesthetics, 502-106 Intro to Aest Skills & Product, 502-107 Aesthetic Guest Service & Prac*

*Restricted to students admitted to the following program(s): 10-502-1*

### **502-104 | Intro to Facial Theory & Skill // 2 Credits**

This course introduces the theory and practical skills needed to provide therapeutic facial treatments that address the needs of clients with various skin types. Students will begin learning the hands-on skills necessary for effective facial treatments.

*Corequisite(s): 502-103 Aesthetic Health & Safety, 502-105 Anatomy & Phys Aesthetics, 502-106 Intro to Aest Skills & Product, 502-107 Aesthetic Guest Service & Prac*

*Restricted to students admitted to the following program(s): 10-502-1*

### **502-105 | Anatomy & Phys Aesthetics // 2 Credits**

This course introduces foundational knowledge of the human body systems related to aesthetician practice.

*Corequisite(s): 502-103 Aesthetic Health & Safety, 502-104 Intro to Facial Theory & Skill, 502-106 Intro to Aest Skills & Product, 502-107 Aesthetic Guest Service & Prac*

*Restricted to students admitted to the following program(s): 10-502-1*

### **502-106 | Intro to Aest Skills & Product // 4 Credits**

This course introduces the theory and practical skills needed to provide effective aesthetic treatments, including makeup application and hair removal. Learners will identify equipment aestheticians use in practice and how to evaluate different skin types and conditions. Learners will also demonstrate infection control and safety protocol while being introduced to the hands-on skills necessary for effective therapeutic treatment.

*Corequisite(s): 502-103 Aesthetic Health & Safety, 502-104 Intro to Facial Theory & Skill, 502-105 Anatomy & Phys Aesthetics, 502-107 Aesthetic Guest Service & Prac*

*Restricted to students admitted to the following program(s): 10-502-1*

### **502-107 | Aesthetic Guest Service & Prac // 3 Credits**

This course introduces how to have effective and appropriate client communication. Students will develop consultation and analysis skills while performing basic skin treatments including facial treatments, hair removal, paraffin treatments on guests in the CVTC Aesthetics Lab. Students will also learn to provide positive guest services in all aspects of the spa experience, from greeting to completion to retention of guests and study how personality, teamwork and ethics contribute to both personal and professional success within the aesthetics industry.

*Corequisite(s): 502-103 Aesthetic Health & Safety, 502-104 Intro to Facial Theory & Skill, 502-105 Anatomy & Phys Aesthetics, 502-106 Intro to Aest Skills & Product*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-108 | Gen Aesth Thrp & Chem Trtmnts // 2 Credits**

This course builds upon the concepts in Intro to Facial Theory & Skills. Students will advance their skills in facial treatments, including electrotherapy, light therapy, and chemical skin treatment.

*Prerequisite(s): 502-103 Aesthetic Health & Safety and 502-104 Intro to Facial Theory & Skill and 502-105 Anatomy & Phys Aesthetics and 502-106 Intro to Aest Skills & Product and 502-107 Aesthetic Guest Service & Prac*

*Corequisite(s): 502-109 Aesth Assessment & Intervntion, 502-110 Aesthetic Microdermabrasion, 502-111 Beginner Practical Client Serv*

**502-109 | Aesth Assessment & Intervntion // 2 Credits**

This course develops learners' ability to provide comprehensive aesthetic treatments by tailoring treatment plans to individual client needs. Learners will build upon concepts from Intro to Aesthetic Skills and Product Consultation and develop their ability to perform lash extensions, body treatments, complementary therapies, airbrush makeup and tanning, and manual lymphatic drainage. Learners will also evaluate client skin types and conditions to identify contraindications, and recommend appropriate treatment plans and products.

*Prerequisite(s): 502-103 Aesthetic Health & Safety and 502-104 Intro to Facial Theory & Skill and 502-105 Anatomy & Phys Aesthetics and 502-106 Intro to Aest Skills & Product and 502-107 Aesthetic Guest Service & Prac*

*Corequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts, 502-110 Aesthetic Microdermabrasion, 502-111 Beginner Practical Client Serv*

**502-110 | Aesthetic Microdermabrasion // 2 Credits**

This course introduces the theory and practice of microdermabrasion and dermaplaning. Students will learn the benefits, indications, and contraindications for microdermabrasion and dermaplaning and how to perform the treatments safely and effectively per client indication.

*Prerequisite(s): 502-103 Aesthetic Health & Safety and 502-104 Intro to Facial Theory & Skill and 502-105 Anatomy & Phys Aesthetics and 502-106 Intro to Aest Skills & Product and 502-107 Aesthetic Guest Service & Prac*

*Corequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts, 502-109 Aesth Assessment & Intervntion, 502-111 Beginner Practical Client Serv*

**502-111 | Beginner Practical Client Serv // 2 Credits**

A practical experience course where students will participate in many aspects of an aesthetics clinic, including providing general skin treatments to clients. Students will learn how to provide a positive guest experience and develop consultation skills.

*Prerequisite(s): 502-103 Aesthetic Health & Safety and 502-104 Intro to Facial Theory & Skill and 502-105 Anatomy & Phys Aesthetics and 502-106 Intro to Aest Skills & Product and 502-107 Aesthetic Guest Service & Prac*

*Corequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts, 502-109 Aesth Assessment & Intervntion, 502-110 Aesthetic Microdermabrasion*

**502-112 | Medical Conditions & Care // 2 Credits**

This course provides the theory and practical knowledge needed to support the work of physicians and other aesthetic providers in a clinic or med-spa setting. Students will learn when to refer clients for medical consults and how to care for clients receiving medical-grade aesthetic treatments.

*Prerequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts and 502-109 Aesth Assessment & Intervntion and 502-110 Aesthetic Microdermabrasion and 502-111 Beginner Practical Client Serv*

*Corequisite(s): 502-113 Intro to Advanced Aesthetics, 502-114 Advanced Skin Science, 502-115 Advanced Aesthetician Skills, 502-116 Practical Client Srv & Bus Skl*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-113 | Intro to Advanced Aesthetics // 2 Credits**

This course explores the aesthetician's role in healthcare and aspects of working in a medical setting, medi-spa, or wellness spa. Students will become familiar with common medical-grade treatments and advanced skin care techniques.

*Prerequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts and 502-109 Aesth Assessment & Intervntion and 502-110 Aesthetic Microdermabrasion and 502-111 Beginner Practical Client Serv*

*Corequisite(s): 502-112 Medical Conditions & Care, 502-114 Advanced Skin Science, 502-115 Advanced Aesthetician Skills, 502-116 Practical Client Srv & Bus Skl*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-114 | Advanced Skin Science // 2 Credits**

This course expands the foundational knowledge in A&P Aesthetics by advancing the students' understanding of the skin and other body systems. Students will learn how to conduct skin consultations and recommend skin therapy solutions.

*Prerequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts and 502-109 Aesth Assessment & Intervntion and 502-110 Aesthetic Microdermabrasion and 502-111 Beginner Practical Client Serv*

*Corequisite(s): 502-112 Medical Conditions & Care, 502-113 Intro to Advanced Aesthetics, 502-115 Advanced Aesthetician Skills, 502-116 Practical Client Srv & Bus Skl*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-115 | Advanced Aesthetician Skills // 2 Credits**

This course introduces the theory and application of advanced aesthetician skills. Students will learn about medium-depth skin peels, microneedling, and the use of light for collagen synthesis and cellular stimulation.

*Prerequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts and 502-109 Aesth Assessment & Intervntion and 502-110 Aesthetic Microdermabrasion and 502-111 Beginner Practical Client Serv*

*Corequisite(s): 502-112 Medical Conditions & Care, 502-113 Intro to Advanced Aesthetics, 502-114 Advanced Skin Science, 502-116 Practical Client Srv & Bus Skl*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-116 | Practical Client Srv & Bus Skl // 3 Credits**

A practical experience course where students participate in all aspects of an aesthetics clinic. Students will progress to providing intermediate-level skin treatments to clients, developing product knowledge to recommend skincare products to meet a client's needs, and building foundational knowledge in business skills.

*Prerequisite(s): 502-108 Gen Aesth Thrp & Chem Trtmnts and 502-109 Aesth Assessment & Intervntion and 502-110 Aesthetic Microdermabrasion and 502-111 Beginner Practical Client Serv*

*Corequisite(s): 502-112 Medical Conditions & Care, 502-113 Intro to Advanced Aesthetics, 502-114 Advanced Skin Science, 502-115 Advanced Aesthetician Skills*

*Restricted to students admitted to the following program(s): 10-502-1*

**502-117 | Med Spa Client Services // 3 Credits**

A practical experience course where students participate in all aspects of an aesthetics clinic. Students will progress to providing advanced skin care techniques and medical-grade treatments under the direction of a Master Aesthetician and/or a Medical Provider.

*Prerequisite(s): 502-112 Medical Conditions & Care and 502-113 Intro to Advanced Aesthetics and 502-114 Advanced Skin Science and 502-115 Advanced Aesthetician Skills and 502-116 Practical Client Srv & Bus Skl*

*Corequisite(s): 502-118 Laser Theory & Application, 502-119 Laser Treatments & Procedure*

**502-118 | Laser Theory & Application // 2 Credits**

This course advances the foundational knowledge in Advanced Aesthetician Skills by focusing on the physics of lasers and the appropriate application of laser treatment. Students will learn safety and control measures within cosmetic laser/Intense Pulse Light (IPL) environments, contraindications to laser treatments, and related first aid.

*Prerequisite(s): 502-112 Medical Conditions & Care and 502-113 Intro to Advanced Aesthetics and 502-114 Advanced Skin Science and 502-115 Advanced Aesthetician Skills and 502-116 Practical Client Srv & Bus Skl*

*Corequisite(s): 502-117 Med Spa Client Services, 502-119 Laser Treatments & Procedure*

**502-119 | Laser Treatments & Procedure // 2 Credits**

This course complements Laser Theory & Application. Students will learn how to provide aesthetic laser treatments utilizing current industry best practices.

*Prerequisite(s): 502-112 Medical Conditions & Care and 502-113 Intro to Advanced Aesthetics and 502-114 Advanced Skin Science and 502-115 Advanced Aesthetician Skills and 502-116 Practical Client Srv & Bus Skl*

*Corequisite(s): 502-117 Med Spa Client Services, 502-118 Laser Theory & Application*

**502-301 | Haircutting 1 // 3 Credits**

Topics of this course include: the history of cosmetology, exploring career pathways, basic techniques and principles used in short, long, and textured haircutting, basic blow-dry and textured hairstyling, client consultation procedures, safety and decontamination procedures, and professionalism.

*Corequisite(s): 502-304 Haircutting 2, 502-310 Chemical Services 1*

*Restricted to students admitted to the following program(s): 31-502-1*

**502-304 | Haircutting 2 // 3 Credits**

Topics of this course include intermediate techniques and principles used in hair cutting, ethnic hair cutting techniques, client consultation procedures, safety and sanitation procedures, mustache and beard trimming, outline and face shaving, and identifying face shapes to create appropriate style.

*Prerequisite(s): 502-310 Chemical Services 1 and 502-320 Nail Technology and 806-323 Salon Science 1*

*Corequisite(s): 502-301 Haircutting 1, 502-321 Salon Services 1, 806-324 Salon Science 2*

*Restricted to students admitted to the following program(s): 31-502-1*

**502-305 | Haircutting 3 // 2 Credits**

This course will provide students with advanced female and male haircutting techniques, trend cutting techniques, client make-over techniques, safety and sanitation procedures and professionalism.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-310 | Chemical Services 1 // 3 Credits**

Topics of this course include: Hair Service Preparation, Haircoloring, and Texture Services. Students will gain an understanding of each topic as well as an understanding of the products being used. Communication and marketing skills will be practiced throughout the course.

*Corequisite(s): 502-301 Haircutting 1*

*Restricted to students admitted to the following program(s): 31-502-1*

**502-311 | Hair Styling // 2 Credits**

This course provides a general knowledge of hairstyling and finishing techniques. Fundamentals will include: product knowledge, wet styling, thermal styling, basic braiding, wig styling, extensions, updo techniques, and blow dry styling.

*Prerequisite(s): 502-301 Haircutting 1 and 502-310 Chemical Services 1 and 502-320 Nail Technology and 806-323 Salon Science 1*

*Corequisite(s): 502-304 Haircutting 2, 502-321 Salon Services 1, 806-324 Salon Science 2*

**502-314 | Chemical Services 2 // 3 Credits**

This course covers a range of advanced topics including: chemical texture services with a focus on permanent waving techniques, chemical relaxing techniques, specialized processes, and the chemicals involved. Students will also explore advanced hair color techniques for achieving diverse results, hair color formulation, and strategies for effectively marketing both services and stylists within a salon setting.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-320 | Nail Technology // 2 Credits**

Hand and nail care, including nail enhancements, nail care, pedicures, and manicures. Fundamentals will include basic nail terminology, basic acrylics, basic nail design, product knowledge, and safety and sanitation practices.

*Corequisite(s): 806-323 Salon Science 1*

*Restricted to students admitted to the following program(s): 30-502-4, 31-502-1*

**502-321 | Salon Services 1 // 4 Credits**

This course will provide students with hands-on training using fundamentals of hair cutting, perm waving, color, and nail techniques, while practicing safety and sanitation procedures and professionalism. This course will be taught in a lab setting providing barber/cosmetology services to the public. Product knowledge and retail skills will also be practiced.

*Prerequisite(s): 502-301 Haircutting 1 and 502-310 Chemical Services 1 and 502-320 Nail Technology and 806-323 Salon Science 1*

*Corequisite(s): 502-304 Haircutting 2, 806-324 Salon Science 2*

*Restricted to students admitted to the following program(s): 31-502-1*

**502-322 | Salon Services 2 // 4 Credits**

This course will provide students with hands-on training using the fundamentals of Salon Services 1 and using intermediate haircutting techniques, advanced coloring techniques, and chemical service procedures, while practicing safety and sanitation procedures and professionalism. This course will be taught in a lab setting providing cosmetology services to the public. Product knowledge and retail skills will also be practiced.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-323 | Salon Services 3 // 4 Credits**

This course will provide students with hands-on training using the fundamentals of Salon Services 1 and 2, as well as, conditioning and styling techniques. These techniques will also practice safety and sanitation techniques and professionalism. Product knowledge and retail skills will also be practiced.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-324 | Salon Services 4 // 4 Credits**

This course will provide students with hands-on training using the fundamentals of Salon Services 1, 2, and 3, as well as facial techniques, basic makeup application, and advanced female and male hair cutting techniques.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-326 | Salon Services Lab // 2 Credits**

This course will provide students with hands-on training using the fundamentals of Salon Services 1, using haircutting techniques, coloring techniques, beginning facial/make-up applications, and chemical service procedures, while practicing safety and sanitation procedures and professionalism. This course will be taught in a lab setting providing cosmetology services to the public. The students will build on product knowledge, retail skills, and interpersonal skills.

*Restricted to students admitted to the following program(s): 31-502-1*

**502-330 | Facial Services // 2 Credits**

Topics covered in this course include: facial treatment techniques for facial treatments, packs and/or masks, facial massage movements, basic makeup application and removal, safety and sanitation procedures, and professionalism. *Restricted to students admitted to the following program(s): 31-502-1*

**502-331 | Advanced Nail Technology // 2 Credits**

This course will provide students with advanced nail techniques. Fundamentals will include: nail terminology, acrylics, nail enhancements, gel services, nail design, product knowledge, and safety and sanitation procedures. *Prerequisite(s): 502-320 Nail Technology*

**502-332 | Nail Salon Service // 4 Credits**

This course will provide students with hands-on training using the fundamentals of Nail Technology and Advanced Nail Technology, while practicing safety/sanitation procedures and professionalism. This course will be taught in a lab setting providing Nail Technology services to the public. Product knowledge and retail skills will also be practiced. *Prerequisite(s): 502-331 Advanced Nail Technology and 806-323 Salon Science 1*

**502-371 | Advanced Salon Operations // 2 Credits**

Topics covered in this course will include: pre-training review, State laws and codes, State Board preparation, salon observations, advanced sales and marketing techniques, safety and sanitation techniques and professionalism. *Restricted to students admitted to the following program(s): 31-502-1*

## Fire Technology

**503-105 | Principles of Firefighting // 4 Credits**

This course introduces the student to the basic skills and techniques used in firefighting. Classroom instruction includes a variety of fire-related topics which are reinforced and enhanced through practical skills activities. The course content follows the requirements for NFPA 1001 Firefighter I. Upon completion, the student is eligible to test for state fire certification.

*Restricted to students admitted to the following program(s): 10-531-2*

**503-109 | Fire Dept Apparatus Ops // 1 Credits**

This course prepares firefighters to drive and operate fire department emergency apparatus. The course presents theories of hydraulics as applied to the fire service, with emphasis on mathematics, and formulas used in operating fire apparatus pumps. Students receive lecture and practical training on maintenance, driving, operating on-board pumps and equipment, and aerial operations. The course content meets the WI SPS 330 requirement for fire department pumper/driver/operator and aerial.

*Prerequisite(s): 531-919 Paramedic Medical Emergencies*

*Restricted to students admitted to the following program(s): 10-531-2*

**503-130 | FireMedic Internship // 1 Credits**

This course allows second-year program students to actively participate as a 'working' member of a fire department. Students work the 24-hour shift schedule at one full-time local fire department, and perform the same duties as the firefighters. Evaluation is determined by fire department officials and the course instructor. *Prerequisite(s): Successful completion of entrance exams: written, physical ability, physical exam, and interview.*

*Prerequisite(s): (503-105 Principles of Firefighting or min score of Y on F105 and 503-109 Fire Dept Apparatus Ops and 503-141 Special Rescue)*

*Restricted to students admitted to the following program(s): 10-531-2*

### **503-141 | Special Rescue // 2 Credits**

This course introduces the various types of special rescues required by many fire/EMS organizations. Classroom presentations and practical evolutions will be conducted on Confined Space and Trench Entry and Rescue, Water Rescue, Vehicle Extrication, and High Angle Rescue.

*Prerequisite(s): 503-105 Principles of Firefighting or min score of Y on F105*

*Restricted to students admitted to the following program(s): 10-531-2*

### **503-146 | Advanced Firefighting Concepts // 3 Credits**

This course introduces students to advanced firefighting principles covering fire behavior, risk management, teamwork, leadership, and a systems approach to initial firefighting tactics at fires. All of the practical portions of this course are conducted in a performance-based, training in context manner to assure that students develop and master a principled, response methodology management on the fire ground. Building construction, forcible entry, and fire inspection are also covered in this course. Outside fire attack and transitional positive pressure attack tactics, consistent with current evidence-based practices for strategic and tactical firefighting are practiced. This course also meets the NFPA Standard for Fire Firefighter 2 certification.

*Prerequisite(s): 503-105 Principles of Firefighting or min score of Y on F105*

*Restricted to students admitted to the following program(s): 10-531-2*

## **Criminal Justice**

### **504-103 | Criminal Justice Employability // 3 Credits**

This course entails essential steps in preparing and obtaining a position in the field of law enforcement and other related criminal justice fields. Students will explore the various aspects of each setting from an organizational perspective. Resume, letter of application and portfolio tools will be created. Practical applications for job interviewing will take place along with learning from area employers how to conduct a successful interview. Part of the course will be devoted to assessing a baseline of physical readiness for the LE Academy entrance fitness test.

*Prerequisite(s): 504-104 CJ Student Success and 504-162 Contemp. Issues in Crim. Just. and 504-900 Intro to Criminal Justice and 504-901 Constitutional Law*

*Corequisite(s): 504-902 Criminal Law, 504-903 Professional Communications*

*Restricted to students admitted to the following program(s): 10-504-1, 10-504-5*

### **504-104 | CJ Student Success // 1 Credits**

Students will prepare for a successful transition to CVTC and the Criminal Justice Program. This course is designed to enhance student development and learning through the examination of career, personal, and academic issues that influence their college experience. Learners will also explore common new-student issues that individuals face at CVTC and develop a personalized success plan. The Criminal Justice Program orientation will also be part of this course.

*Corequisite(s): 504-162 Contemp. Issues in Crim. Just., 504-900 Intro to Criminal Justice, 504-901 Constitutional Law*

### **504-107 | Crisis Management // 3 Credits**

In this course, students will learn principles, guidelines and techniques for law enforcement and others in the criminal justice field response to persons with possible mental disorders, alcohol or drug problems, dementia disorders, and/or developmental disabilities. Students will become more familiar and able to recognize traits of mental health disorders to better handle crisis situations and provide the appropriate resources to assist a person in crisis in their own communities. Students will also learn and apply the legal basis under Wisconsin law for conducting emergency detentions and emergency protective placements of persons, as well as legal requirements and practical guidelines for implementing these procedures.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law and 504-903 Professional Communications and 504-905 Report Writing and 504-907 Community Policing Strategies*

*Corequisite(s): 504-121 Patrol Procedures, 504-904 Juvenile Law and Justice, 504-909 Criminal Investigations II*  
*Restricted to students admitted to the following program(s): 10-504-5*

### **504-121 | Patrol Procedures // 3 Credits**

This capstone course is the culmination of criminal justice students' educational experience. It serves to synthesize the knowledge, skills and abilities gained from this course, and other courses taken in the Criminal Justice Program. Learners examine and apply basic patrol response. Learners integrate key skills and concepts learned over the past 3 semesters around evidence-based practices, professionalism, ethics, proper verbal and written communication, interviewing and policing strategies. Learners participate in practice scenarios of common police calls, practice decision making, justify legal and policy decisions and write practice reports. They observe and participate in demos on how to conduct a basic traffic stop, OWI and SFST procedures and traffic crash investigations. Learners complete a final program portfolio to demonstrate they meet the WTCS Technical Skills outlined for the Criminal Justice Studies Program outcomes.

*Prerequisite(s): 504-903 Professional Communications and 504-906 Criminal Investigations I and 504-907 Community Policing Strategies*

*Corequisite(s): 504-107 Crisis Management, 504-904 Juvenile Law and Justice, 504-909 Criminal Investigations II*

*Restricted to students admitted to the following program(s): 10-504-1, 10-504-5*

### **504-162 | Contemp. Issues in Crim. Just. // 3 Credits**

An examination of all levels of criminal justice system, public and private, in contemporary issues that impact on these agencies now and in the future. It will investigate futuristic challenges and concerns of these agencies as they relate to legal, social, economic, political and employment opportunities.

*Corequisite(s): 504-104 CJ Student Success, 504-900 Intro to Criminal Justice, 504-901 Constitutional Law*

### **504-166 | Criminal Justice Internship // 3 Credits**

Firsthand observation within a criminal justice agency of the student's choice; learning activities provided on-site with participating agencies. Students must be in the Criminal Justice Program and in good standing to apply for internship sites. The student seeks out their own internship site and applies to the internship position for selection with the specific agency.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law and 504-902 Criminal Law and 504-903 Professional Communications and 504-170 Corrections, Intro to*

*Restricted to students admitted to the following program(s): 10-504-5*

**504-170 | Corrections, Intro to // 3 Credits**

This course provides an overview of how criminal cases flow through the courts and how the criminal justice system and correctional system work together. Learners explore various correctional career paths, professionalism, ethics and cultural awareness within the system. Evidence-based practices in corrections and scholarly research are examined to articulate current issues, best practices, and trends in corrections. Learners will differentiate the roles, duties and functions of community corrections, diversion, probation and alternatives to incarceration, county jails and state and federal prisons.

*Corequisite(s): 504-902 Criminal Law, 504-903 Professional Communications*

**504-500 | Overview of Patrol Response // 2 Credits**

Through classroom lecture, and on-campus lab, and WI Department of Justice integration exercises students will learn and apply skills addressed in the following WI 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 will also include the WI DOJ 720 Academy Integration Exercises.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-501 | Physical Fitness // 1 Credits**

Through classroom lecture and on-campus lab students will apply Phases I-III Health Fitness WI Department of Justice 720 Academy curriculum framework program requirements and Officer Wellness Suicide Prevention.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-502 | Application of Investigations // 1 Credits**

Through classroom lecture, on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase III topics of the Department of Justice 720 Academy curriculum framework: Ethics II: Moral Reasoning and Professional Responsibility, Cultural Competence II: Fair and Impartial Policing, Interrogations, Testifying in Court, Crimes III and Physical Evidence.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-503 | Overview of Criminal Justice // 1 Credits**

Through classroom lecture and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following WI Department of Justice 720 Academy Phase I curriculum framework topics: Academy Orientation, Fundamentals of Criminal Justice, Ethics, Cultural Competency, Agency Policy, and Professional Communication.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-504 | Principles of Emerg Vehicles // 2 Credits**

Through classroom lecture, and on-campus lab, and WI 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.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-505 | Sensitive Crimes // 2 Credits**

Through classroom lecture, and on-campus lab and WI 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 III topics: Domestic Violence, Juvenile Law, Victims, Sexual Assault, and Child Maltreatment. The DOJ Phase III Written Examination will be administered in this course.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-506 | Overview of Investigations // 2 Credits**

Through classroom lecture, on-campus lab, and WI 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, Interviews, and Report Writing. The DOJ Phase I Written Examination will be administered in this course.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-507 | Application Traffic Response // 3 Credits**

Through classroom lecture, and on-campus lab and WI Department of Justice integration exercises, students will learn and apply skills addressed in the following Phase III topics from the WI Department of Justice 720 Academy curriculum framework: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations & Incident Management, Operating a Motor Vehicle While Intoxicated (OMVWI), Standardized Field Sobriety Tests (SFST), Hazardous Materials and Weapons of Mass Destruction (WMD), Incident Command Systems and NIMS, and Report Writing.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-508 | Principles of Investigations // 1 Credits**

Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase II topics of the WI Department of Justice 720 Academy curriculum framework: Constitutional Law II, Physical Evidence Collections, and Crisis Management. The Phase II Written Exam will be given in this course.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-509 | Principles of Tactics // 5 Credits**

Through classroom lecture and on-campus lab and integration exercises, students will learn and apply skills addressed in the following Phase II topics from the Department of Justice 720 Academy curriculum frameworks including: Professional Communication Skills II, DAAT, Firearms II, Tactical Response, and a Tactical Emergency Casualty Care.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-510 | Overview of Tactics // 1 Credits**

Through classroom lecture, and on-campus lab and WI 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.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-511 | Scenario Assessment // 1 Credits**

A capstone course to assess the learner's cumulative knowledge through the use of scenarios in the certifiable Law Enforcement curriculum.

*Restricted to students admitted to the following program(s): 30-504-2*

**504-900 | Intro to Criminal Justice // 3 Credits**

This course provides an overview of the history, function and roles of the modern criminal justice system. Learners are introduced to the structure of local, state and federal law enforcement and non-law enforcement agencies within the system along with duties and responsibilities of each. Learners discover careers paths within the CJ system, specialized positions, community resources and professional standards in law enforcement. They also explore and interpret current scholarly research, data and trends in the criminal justice system.

*Corequisite(s): 504-104 CJ Student Success, 504-162 Contemp. Issues in Crim. Just., 504-901 Constitutional Law*

### **504-901 | Constitutional Law // 3 Credits**

This course explores the legal aspects and application of the concepts of arrest, use of force, search and seizure, and other essential functions within the field of criminal justice. With focus placed on the Bill of Rights, Wisconsin State Statutes, and other sources of law, students will be given an opportunity to examine and understand these topics and how they interrelate to the criminal justice system, as well as the rights of all persons in the United States of America.

*Corequisite(s): 504-104 CJ Student Success, 504-162 Contemp. Issues in Crim. Just., 504-900 Intro to Criminal Justice*

### **504-902 | Criminal Law // 3 Credits**

This course defines and describes theories concerning the nature of crime and the purpose and sources of criminal law in American society. It identifies principles of state and federal constitutional, statutory, and local ordinances applicable to criminal law with emphasis on the Wisconsin Criminal Code. It includes an examination of substantive and procedural criminal law it applies to, and is likely to be applied by a law enforcement officer.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law*

*Corequisite(s): 504-903 Professional Communications*

*Restricted to students admitted to the following program(s): 10-504-5*

### **504-903 | Professional Communications // 3 Credits**

This course examines professional communication skills in the Criminal Justice field with significant emphasis on law enforcement and corrections occupational areas. Key skills include active listening, interpreting non-verbal behavior, utilizing conflict resolution techniques and implementing strategies to overcome communication barriers. In addition to examining and applying communication strategies, this course also explores factors that influence effective communication, including adherence to a professional code of ethics to impact successful communication and overall job performance.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law*

*Corequisite(s): 504-103 Criminal Justice Employability, 504-902 Criminal Law*

### **504-904 | Juvenile Law and Justice // 3 Credits**

You will analyze the history of juvenile justice and specific issues relating to juveniles, such as juvenile risk and protective factors contributing to delinquency and prevention and intervention of delinquency. You will explore how law enforcement and others working with juveniles handle various juvenile cases using proactive measures through community policing, collaboration and problem-solving concepts. You will also identify the legal parameters surrounding juveniles by gaining a basic understanding of legal terminology, process, procedure and application of Wisconsin juvenile laws under the CH 48 Children's Code, CH 938 Juvenile Justice Code and U.S. Constitutional Law. The course also includes an examination of the types, dynamics and statutes around child maltreatment.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law and 504-902 Criminal Law*

*Corequisite(s): 504-107 Crisis Management, 504-121 Patrol Procedures, 504-909 Criminal Investigations II*

### **504-905 | Report Writing // 3 Credits**

This course prepares the learner to write effective police reports. Writing an effective report starts with understanding how these reports are used and by whom. Learners will conduct interviews and interrogations, make notes of observations, construct field notes and create reports. Learners will demonstrate how to organize information for various types of reports and citations. Learners will also practice testifying to the information written in their reports.

*Prerequisite(s): 504-901 Constitutional Law and 504-902 Criminal Law and (801-136 English Composition 1 or 801-195 Written Communication or 801-151 ) and (801-197 Technical Reporting or 801-171 Business English)*

*Corequisite(s): 504-906 Criminal Investigations I, 504-907 Community Policing Strategies*

### **504-906 | Criminal Investigations I // 3 Credits**

In this course, the learner will recognize the dynamics of victimization; apply knowledge of the definitions and responsibilities for law enforcement; apply appropriate interview techniques with adult or child victims; conduct interviews and interrogations; analyze the role of law enforcement in responding to domestic abuse; intervene and apply appropriate investigative strategies; respond to an officer-involved domestic violence incident; analyze the role of law enforcement in responding to sexual abuse; demonstrate investigative techniques in a simulated sexual assault case; and identify other resources that can assist in sexual assault cases.

*Prerequisite(s): 504-901 Constitutional Law and 504-902 Criminal Law and 504-903*

*Professional Communications*

*Corequisite(s): 504-905 Report Writing, 504-907 Community Policing Strategies*

### **504-907 | Community Policing Strategies // 3 Credits**

The course is meant for you to gain knowledge and skills related to various Community Policing Concepts. These include many tools for your policing tool belt, so to speak. Policing is much more than enforcing laws and responding to calls. Increasing trust, cultural intelligence, approachability, making connections and partnerships are all very important aspects of policing. In addition to that, there are many strategies that you need to increase the success of your policing and efforts. These include problem-solving, having partnerships, resources, technology, crime prevention tools and the ability to think outside the box to solve big and small issues.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law*

*Corequisite(s): 504-905 Report Writing, 504-906 Criminal Investigations I*

### **504-909 | Criminal Investigations II // 3 Credits**

In this hands-on course, the student will learn about and develop investigative techniques specifically for physical evidence collection, online crime investigations and current technological advances in evidence collection for all kinds of criminal investigations. Learners will examine child maltreatment dynamics, crimes against children and investigative techniques for child maltreatment and missing children.

*Prerequisite(s): 504-901 Constitutional Law and 504-902 Criminal Law and 504-903 Professional Communications and 504-905 Report Writing and 504-906 Criminal Investigations I*

*Corequisite(s): 504-107 Crisis Management, 504-121 Patrol Procedures, 504-904 Juvenile Law and Justice*

### **504-910 | Law Enforcement Academy Prep // 3 Credits**

The course is meant to further prepare students seeking law enforcement certification and entrance into the recruit academy in areas of fitness, wellness and emotional survival on and off duty. The student will become a stronger candidate for the LE academy physically and emotionally. The students will be better prepared for the academy by learning about, assessing and improving their physical readiness, nutrition and overall emotional health for entrance/exit requirements, as well as begin lifelong wellness habits for the LE career.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law and 504-902 Criminal Law and 504-903 Professional Communications and 504-170 Corrections, Intro to*

*Restricted to students admitted to the following program(s): 10-504-5*

### **504-912 | CJ Human Service Seminar // 3 Credits**

The course will include and overview of human service specific careers and more details on how the human service system and resources work with the criminal justice system. Students will learn motivational interviewing skills and specifics on alcohol and other drugs in the course, also.

*Prerequisite(s): 504-900 Intro to Criminal Justice and 504-901 Constitutional Law and 504-902 Criminal Law and 504-903 Professional Communications and 504-170 Corrections, Intro to*

*Restricted to students admitted to the following program(s): 10-504-5*

# Dental

## **508-101 | Dental Health Safety // 1 Credits**

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. This course is a WTCS aligned course required in both the Dental Hygienist and Dental Assisting programs.

*Restricted to students admitted to the following program(s): 10-508-1, 11-508-1, 30-508-2, 50-508-2*

## **508-102 | Oral Anatomy, Embry, Histology // 4 Credits**

Prepares Dental Hygienist 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): and (508-101 Dental Health Safety*

*Restricted to students admitted to the following program(s): 10-508-1, 11-508-1*

## **508-103 | Dental Radiography // 2 Credits**

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 process, mount, and evaluate dental images for diagnostic value. In this course, students demonstrate competency on a manikin. In addition, students expose bitewing and periapical images on patients in the clinical portion of their program. This course also provides the background in radiographic theory required for students to make informed decisions and adjustments.

*Prerequisite(s): 508-101 Dental Health Safety*

*Restricted to students admitted to the following program(s): 10-508-1, 30-508-2, 50-508-2*

## **508-105 | Dental Hygiene Process 1 // 4 Credits**

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): and (508-101 Dental Health Safety and 508-102 Oral Anatomy, Embry, Histology and 508-103 Dental Radiography*

*Restricted to students admitted to the following program(s): 10-508-1*

## **508-106 | Dental Hygiene Process 2 // 4 Credits**

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 patients. Dental Hygiene Process 2 introduces the application of fluoride and desensitizing agents, whole mouth sealants, and patient classification. Students also begin performing removal of supragingival stain, dental plaque, calcified accretions, and deposits. In addition, they gain further experience in exposing radiographs on patients. The course also reinforces the application of Dental Healthy Safety skills.

*Prerequisite(s): 508-102 Oral Anatomy, Embry, Histology and 508-103 Dental Radiography and 508-105 Dental Hygiene Process 1*

**508-107 | Dental Hygiene Ethics & Profes // 1 Credits**

Helps student dental hygienists develop and apply high professional and ethical standards. Students apply the laws that govern the practice of dental hygiene to their work with patients, other members of a dental team and the community. Emphasis is placed on maintaining professionalism which includes confidentiality and informed consent.

*Prerequisite(s): 508-112 Dental Hygiene Process 3*

*Corequisite(s): 508-117 Dental Hygiene Process 4*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-108 | Periodontology // 3 Credits**

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 treatments modalities that minimize risk and restore periodontal health.

*Prerequisite(s): 508-102 Oral Anatomy, Embry, Histology and 508-103 Dental Radiography and 508-106 Dental Hygiene Process 2 and 508-111 General & Oral Pathology*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-109 | Cariology // 1 Credits**

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): and 508-106 Dental Hygiene Process 2*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-110 | Nutrition and Dental Health // 2 Credits**

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 effect of eating disorders on dental health.

*Prerequisite(s): 806-186 Intro to Biochemistry*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-111 | General & Oral Pathology // 3 Credits**

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): 508-102 Oral Anatomy, Embry, Histology and 508-103 Dental Radiography and 508-106 Dental Hygiene Process 2*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-112 | Dental Hygiene Process 3 // 5 Credits**

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 O, I, II, and III patients. Dental Hygiene Process 3 introduces root detoxification using hand and ultra-sonic instruments, laser bacterial reduction, selection of dental implant prophylaxis treatment options, and administration of chemotherapeutic agents. Students also adapt care plans in order to accommodate patients with special needs.

*Prerequisite(s): 508-106 Dental Hygiene Process 2 and 508-108 Periodontology and 508-109 Cariology and 508-110 Nutrition and Dental Health and 508-111 General & Oral Pathology*

**508-113 | Dental Materials // 2 Credits**

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 peers and clean removable appliances. This course is aligned to serve students in the Dental Hygienist and Dental Assistant programs.

*Prerequisite(s): 508-101 Dental Health Safety*

*Restricted to students admitted to the following program(s): 10-508-1, 30-508-2, 50-508-2*

**508-114 | Dental Pharmacology // 2 Credits**

Prepares student dental hygienists to select safe and effective patient premedication and within the scope of dental hygiene practice.

Students will also 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): 508-106 Dental Hygiene Process 2 and 508-112 Dental Hygiene Process 3*

**508-115 | Community Dental Health // 2 Credits**

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.

*Prerequisite(s): 508-112 Dental Hygiene Process 3*

**508-117 | Dental Hygiene Process 4 // 4 Credits**

This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process III. 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): 508-112 Dental Hygiene Process 3 and 508-113 Dental Materials and 508-114 Dental Pharmacology and 508-115 Community Dental Health*

**508-118 | Dental Anxiety & Pain Management // 2 Credits**

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): 508-102 Oral Anatomy, Embry, Histology and 508-103 Dental Radiography and 508-112 Dental Hygiene Process 3 and 508-114 Dental Pharmacology*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-168 | Health Career Occupations // 1 Credits**

This course prepares students for the written, licensing and clinical practice examinations. It includes simulated CRDTS exam, an individualized study plan for written boards and CRDTS, stress/test anxiety management strategies; and dental hygiene licensing application. It also will prepare the student for resume and cover letter writing for participation in the mock interview, financial planning, study tips, and explore different settings a dental hygienist can work in.

*Prerequisite(s): 508-112 Dental Hygiene Process 3*

*Corequisite(s): 508-117 Dental Hygiene Process 4*

*Restricted to students admitted to the following program(s): 10-508-1*

**508-301 | Dental Health Safety // 2 Credits**

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.

*Corequisite(s): 508-302 Dental Chairside, 508-303 Dental Materials, 508-304 Dental & General Anatomy, 508-305 Applied Dental Radiography, 508-306 Dental Assistant Clinical, 508-307 Dental Assistant Professional*

*Restricted to students admitted to the following program(s): 30-508-2*

**508-302 | Dental Chairside // 5 Credits**

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, amalgam restoration, and cosmetic restoration. Students will also 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): 508-101 Dental Health Safety*

*Corequisite(s): 508-103 Dental Radiography, 508-307 Dental Assistant Professional*

*Restricted to students admitted to the following program(s): 30-508-2, 50-508-2*

**508-304 | Dental & General Anatomy // 2 Credits**

Prepares dental assistant students to apply fundamentals of general and dental anatomy to informed decision-making and to professional communication with colleagues and patients.

*Prerequisite(s): 508-101 Dental Health Safety*

*Restricted to students admitted to the following program(s): 11-508-1, 30-508-2, 50-508-2*

**508-306 | Dental Assistant Clinical // 3 Credits**

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 core abilities and basic occupational skills.

*Prerequisite(s): 508-101 Dental Health Safety*

*Corequisite(s): 508-113 Dental Materials, 508-304 Dental & General Anatomy*

*Restricted to students admitted to the following program(s): 30-508-2, 50-508-2*

**508-307 | Dental Assistant Professional // 1 Credits**

Prepares dental assistant students for professional success in a dental practice or another dental health care environment. Students develop professional appearance and image. More importantly, they learn to work within ethical guidelines and legal frameworks. In preparation for entering the work force, dental assistants customize or develop their portfolios and lay out an ongoing professional development plan.

*Prerequisite(s): 508-101 Dental Health Safety*

*Corequisite(s): 508-103 Dental Radiography, 508-302 Dental Chairside*

*Restricted to students admitted to the following program(s): 30-508-2, 50-508-2*

# Medical Assistant

## **509-130 | Medical Office Procedures // 2 Credits**

Introduces students to medical office receptionist duties, including patient registration, telephone techniques, scheduling appointments, and maintaining the medical record. Students learn about basic medical office finances, including collecting payments, posting charges and payments, and performing banking duties. Students apply knowledge learned by utilizing electronic health record software and practice management software to perform receptionist duties. Infection control principles and federal and state regulations impacting the medical office, including HIPAA and HITECH will be stressed.

*Restricted to students admitted to the following program(s): 10-106-6, 30-106-3, 31-106-1*

## **509-301 | Medical Asst Admin Procedures // 2 Credits**

Introduces medical assistant students to office management, business administration, and the electronic medical record (EMR) in the medical office. Students learn to schedule appointments, perform filing, recordkeeping, telephone and reception duties, communicate effectively with patients and other medical office staff, and keep inventory or supplies.

*Prerequisite(s): 501-107 Digital Literacy Healthcare*

*Restricted to students admitted to the following program(s): 30-509-2, 31-509-1*

## **509-302 | Human Body in Health & Disease // 3 Credits**

Focuses on diseases that are frequently first diagnosed and treated in the medical office setting. Students learn to recognize human anatomy and 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): 836-113 Prep for Basic Biology or min score of Y on BIOL*

*Restricted to students admitted to the following program(s): 30-509-2, 30-509-4, 30-534-1, 31-509-1*

## **509-303 | Medical Asst Lab Procedures 1 // 2 Credits**

Introduces medical assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform 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.

*Corequisite(s): 509-304 Medical Asst Clin Procedures 1*

*Restricted to students admitted to the following program(s): 30-509-4, 31-509-1*

## **509-304 | Medical Asst Clin Procedures 1 // 4 Credits**

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): 509-302 Human Body in Health & Disease*

*Corequisite(s): 509-303 Medical Asst Lab Procedures 1*

*Restricted to students admitted to the following program(s): 30-509-4, 31-509-1*

## **509-305 | Med Asst Lab Procedures 2 // 2 Credits**

Prepares students to perform phlebotomy and CLIA waived hematology, chemistry, immunology and laboratory procedures commonly performed by medical assistants in the ambulatory care setting.

*Prerequisite(s): 509-303 Medical Asst Lab Procedures 1 and 509-304 Medical Asst Clin Procedures 1*

*Corequisite(s): 509-306 Med Asst Clin Procedures 2*

*Restricted to students admitted to the following program(s): 31-509-1*

**509-306 | Med Asst Clin Procedures 2 // 3 Credits**

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, educating patients/community, assisting with emergency preparedness in an ambulatory care setting.

*Prerequisite(s): 509-303 Medical Asst Lab Procedures 1 and 509-304 Medical Asst Clin Procedures 1 and 509-302 Human Body in Health & Disease and 509-309 Medical Law, Ethics & Profess*

*Restricted to students admitted to the following program(s): 30-509-4, 31-509-1*

**509-307 | Med Office Insurance & Finance // 2 Credits**

Introduces medical assistant students to health insurance and finance in the medical office. Students perform book-keeping 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): 501-107 Digital Literacy Healthcare and 509-301 Medical Asst Admin Procedures and 509-302 Human Body in Health & Disease*

*Restricted to students admitted to the following program(s): 30-509-2, 31-509-1*

**509-309 | Medical Law, Ethics & Profess // 2 Credits**

Prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of the medical record, perform quality improvement procedures, examine legal and bioethical issues, and demonstrate awareness of diversity.

*Restricted to students admitted to the following program(s): 30-509-2, 30-509-4, 30-534-1, 30-534-2, 31-509-1, 31-509-2, 50-534-1*

**509-310 | Medical Assistant Practicum // 3 Credits**

Requires medical assistant students to integrate and apply knowledge and skills from all previous medical assistant courses in actual ambulatory health care settings. Learners perform medical assistant administrative, clinical, and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This is a supervised, unpaid, clinical experience.

*Prerequisite(s): (501-107 Digital Literacy Healthcare and 509-301 Medical Asst Admin Procedures and 509-302 Human Body in Health & Disease and 509-303 Medical Asst Lab Procedures 1 and 509-304 Medical Asst Clin Procedures 1 and 509-309 Medical Law, Ethics & Profess) and (501-308 Pharmacology for Allied Health and 509-305 Med Asst Lab Procedures 2 and 509-306 Med Asst Clin Procedures 2 and 509-307 Med Office Insurance & Finance)*

*Restricted to students admitted to the following program(s): 31-509-1*

**509-320 | Clinical Assistant Practicum // 1 Credits**

Requires clinical assistant students to integrate and apply knowledge and skills from all previous clinical assistant courses in actual ambulatory health care settings. Learners perform clinical assistant clinical and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This is a supervised, unpaid, clinical experience.

*Prerequisite(s): 501-308 Pharmacology for Allied Health and 509-302 Human Body in Health & Disease and 509-303 Medical Asst Lab Procedures 1 and 509-304 Medical Asst Clin Procedures 1 and 509-306 Med Asst Clin Procedures 2 and (509-309 Medical Law, Ethics & Profess or min score of Y on M309)*

*Restricted to students admitted to the following program(s): 30-509-4*

# Surgical Technology

## **512-125 | Intro to Surgical Technology // 4 Credits**

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): 806-177 Gen Anatomy & Physiology and 501-101 Medical Terminology or min score of Y on M101*

*Corequisite(s): 512-126 Surgical Tech Fundamentals 1*

*Restricted to students admitted to the following program(s): 10-512-1*

## **512-126 | Surgical Tech Fundamentals 1 // 4 Credits**

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): 806-177 Gen Anatomy & Physiology and 501-101 Medical Terminology or min score of Y on M101*

*Corequisite(s): 512-125 Intro to Surgical Technology, 512-127 Exploring Surgical Issues*

*Restricted to students admitted to the following program(s): 10-512-1*

## **512-127 | Exploring Surgical Issues // 2 Credits**

Explores a variety of issues related to surgical technology. Emphasis is placed on becoming a professional member of the surgical team.

*Corequisite(s): 512-126 Surgical Tech Fundamentals 1*

*Restricted to students admitted to the following program(s): 10-512-1*

## **512-128 | Surgical Tech Fundamentals 2 // 4 Credits**

Focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab is included.

*Prerequisite(s): (512-127 Exploring Surgical Issues or min score of Y on S127) and 806-197 Microbiology and 512-125 Intro to Surgical Technology and (512-126 Surgical Tech Fundamentals 1 or min score of Y on S126) and (501-101 Medical Terminology or min score of Y on M101)*

*Corequisite(s): 512-129 Surgical Pharmacology*

*Restricted to students admitted to the following program(s): 10-512-1*

## **512-129 | Surgical Pharmacology // 2 Credits**

Basic study of drug classifications, care, and handling of drugs and solutions, application of mathematical principles in dosage calculations, and terminology related to pharmacology, anesthesia, and drugs used in surgery.

*Prerequisite(s): 512-125 Intro to Surgical Technology and (512-126 Surgical Tech Fundamentals 1 or min score of Y on S126)*

*Restricted to students admitted to the following program(s): 10-512-1*

## **512-130 | Surgical Skills Application // 2 Credits**

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): 512-125 Intro to Surgical Technology and (512-126 Surgical Tech Fundamentals 1 or min score of Y on S126) and 512-128 Surgical Tech Fundamentals 2*

*Corequisite(s): 512-129 Surgical Pharmacology*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-131 | Surgical Interventions 1 // 4 Credits**

Provides the foundational knowledge of surgical core and specialty procedures. Examines the pathophysiology, diagnostic interventions, health sciences, and surgical techniques for a variety of procedures.

*Prerequisite(s): 512-128 Surgical Tech Fundamentals 2 and 512-130 Surgical Skills Application*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-132 | Surgical Technology Clinical 1 // 3 Credits**

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): 512-128 Surgical Tech Fundamentals 2 and 512-130 Surgical Skills Application*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-133 | Surgical Technology Clinical 2 // 3 Credits**

Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures.

*Prerequisite(s): 512-132 Surgical Technology Clinical 1 and 512-131 Surgical Interventions 1*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-135 | Surgical Technology Clinical 3 // 3 Credits**

Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures.

*Prerequisite(s): 512-131 Surgical Interventions 1 and 512-133 Surgical Technology Clinical 2*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-136 | Surgical Technology Clinical 4 // 3 Credits**

During this clinical course, the student will function relatively independently. Serves as a transition from a student perspective to an employee by utilizing advanced skills for an entry level Surgical Technologist.

*Prerequisite(s): 512-135 Surgical Technology Clinical 3 and 512-142 Surgical Interventions II*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-142 | Surgical Interventions II // 4 Credits**

Expands knowledge of core and specialty surgical procedures by incorporating pathophysiology, diagnostic interventions, health sciences, and surgical techniques.

*Prerequisite(s): 512-131 Surgical Interventions 1 and 512-133 Surgical Technology Clinical 2*

*Restricted to students admitted to the following program(s): 10-512-1*

**512-331 | ST: Surgical Procedures // 4 Credits**

Provides the foundational knowledge of surgical core and specialty procedures. Examines the pathophysiology diagnostic interventions, and surgical interventions for a variety of surgical procedures. Incorporates integration of basic health sciences and technical knowledge to complete a plan of action for a surgical procedure.

*Prerequisite(s): 512-329 ST: Fundamentals 2 and 512-330 ST: Clinical 1*

*Corequisite(s): 512-332 ST: Clinical 2, 512-334 ST: Clinical 3*

## Laboratory Assistant

### **513-109 | Blood Bank // 4 Credits**

Focuses on blood banking concepts and procedures including blood typing, compatibility testing, work ups for adverse reaction to transfusions, disease states and donor activities.

*Prerequisite(s): 513-115 Basic Immunology Concepts and (513-113 QA Lab Math or min score of Y on L113) and (513-110 Basic Lab Skills or min score of Y on L110)*

### **513-110 | Basic Lab Skills // 1 Credits**

This course explores health career options and the principles and procedures of basic tests performed in the clinical laboratory. You will utilize medical terminology and general laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests.

### **513-111 | Phlebotomy // 2 Credits**

This course provides opportunities for learners to perform routine venipuncture, routine capillary puncture, and special collection procedures. The student must be 18 years old to register for this course.

### **513-113 | QA Lab Math // 1 Credits**

This course 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.

*Corequisite(s): 513-110 Basic Lab Skills*

### **513-114 | Urinalysis // 2 Credits**

This course 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): (513-113 QA Lab Math or min score of Y on L113) and (513-110 Basic Lab Skills or min score of Y on L110)*

### **513-115 | Basic Immunology Concepts // 2 Credits**

This course provides an overview of the immune system including laboratory testing methods for diagnosis of immune system disorders, viral, and bacterial infections.

*Corequisite(s): 513-110 Basic Lab Skills, 513-113 QA Lab Math*

*Restricted to students admitted to the following program(s): 10-513-1*

### **513-116 | Clinical Chemistry // 4 Credits**

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): (513-114 Urinalysis or min score of Y on L114) and 806-186 Intro to Biochemistry and 806-177 Gen Anatomy & Physiology*

### **513-120 | Basic Hematology // 3 Credits**

This course 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): (513-111 Phlebotomy or min score of Y on L111) and (513-113 QA Lab Math or min score of Y on L113) and 513-115 Basic Immunology Concepts and (513-110 Basic Lab Skills or min score of Y on L110)*

*Corequisite(s): 513-121 Coagulation*

**513-121 | Coagulation // 1 Credits**

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): (513-111 Phlebotomy or min score of Y on L111) and (513-113 QA Lab Math or min score of Y on L113) and 513-115 Basic Immunology Concepts and (513-110 Basic Lab Skills or min score of Y on L110)*

*Corequisite(s): 513-120 Basic Hematology*

**513-130 | Advanced Hematology // 2 Credits**

This course explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques used to diagnose disorders and monitor treatment.

*Prerequisite(s): 513-120 Basic Hematology*

**513-133 | Clinical Microbiology // 4 Credits**

This course presents the clinical importance of infectious diseases with emphasis upon the appropriate collection, handling, and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will also be discussed.

*Prerequisite(s): 806-197 Microbiology*

*Corequisite(s): 513-140 Advanced Microbiology*

*Restricted to students admitted to the following program(s): 10-513-1*

**513-140 | Advanced Microbiology // 2 Credits**

This course provides an overview of acid fast organisms, fungi, parasites, and anaerobic bacteria. The organisms, their pathophysiology, epidemiology, the diseases and conditions that they cause, laboratory methods of handling, culturing, and identification will be discussed.

*Prerequisite(s): 806-197 Microbiology*

*Corequisite(s): 513-133 Clinical Microbiology*

**513-144 | Clinical Experience 3 // 4 Credits**

This course provides the learner with opportunities to practice the principles and procedures of laboratory medicine in a clinical laboratory setting including the operation of state of the art instrumentation and the use of laboratory information systems to report results. The fourteen competencies will be divided between Clinical Experience 1, Clinical Experience 2, and Clinical Experience 3. Order that competencies will be covered may vary based on staffing at clinical sites.

*Prerequisite(s): (513-116 Clinical Chemistry or min score of Y on L116) and 513-130 Advanced Hematology and 513-145 MLT Seminar*

*Corequisite(s): 513-151 Clinical Experience 1, 513-152 Clinical Experience 2*

*Restricted to students admitted to the following program(s): 10-513-1*

**513-145 | MLT Seminar // 2 Credits**

Issues related to working in a health care setting; certification, professional societies, patient rights, medical/legal issues and ethics. Must be CLT 3rd semester status.

*Restricted to students admitted to the following program(s): 10-513-1*

### **513-151 | Clinical Experience 1 // 3 Credits**

This course provides the learner with opportunities to practice the principles and procedures of laboratory medicine in a clinical laboratory setting including the operation of state of the art instrumentation and the use of laboratory information systems to report results. The fourteen competencies will be divided between Clinical Experience 1, Clinical Experience 2, and Clinical Experience 3. Order that competencies will be covered may vary based on staffing at clinical sites.

*Prerequisite(s): (513-116 Clinical Chemistry or min score of Y on L116) and 513-130 Advanced Hematology and 513-145 MLT Seminar*

*Corequisite(s): 513-144 Clinical Experience 3, 513-152 Clinical Experience 2*

*Restricted to students admitted to the following program(s): 10-513-1*

### **513-152 | Clinical Experience 2 // 4 Credits**

This course provides the learner with opportunities to practice the principles and procedures of laboratory medicine in a clinical laboratory setting including the operation of state of the art instrumentation and the use of laboratory information systems to report results. The fourteen competencies will be divided between Clinical Experience 1, Clinical Experience 2, and Clinical Experience 3. Order that competencies will be covered may vary based on staffing at clinical sites.

*Prerequisite(s): (513-116 Clinical Chemistry or min score of Y on L116) and 513-130 Advanced Hematology and 513-145 MLT Seminar*

*Corequisite(s): 513-144 Clinical Experience 3, 513-151 Clinical Experience 1*

*Restricted to students admitted to the following program(s): 10-513-1*

### **513-170 | Intro to Molecular Diagnostics // 2 Credits**

Introduces the principles and application of molecular diagnostics in the clinical laboratory.

*Prerequisite(s): (513-116 Clinical Chemistry or min score of Y on L116) and (513-110 Basic Lab Skills or min score of Y on L110)*

## **Respiratory Care Practitio**

### **515-111 | Respiratory Survey // 3 Credits**

This course will introduce the student to issues facing health care workers. Topics will include ethics, confidentiality, and professionalism. Health care structure and economics will also be introduced. Other topics may include professional licensure, legal aspects of health care, and patient communication.

*Restricted to students admitted to the following program(s): 10-515-1*

### **515-112 | Respiratory Airway Management // 2 Credits**

Provides a comprehensive exploration of airway management concepts and skills.

*Prerequisite(s): (515-172 Respiratory Therapeutics 2 or min score of Y on R172) and (515-174 Respiratory/Cardiac Physiology or min score of Y on R174) and 515-175 Respiratory Clinical 1 and 806-197 Microbiology*

*Restricted to students admitted to the following program(s): 10-515-1*

### **515-113 | Respiratory Life Support // 3 Credits**

Focuses on management of adult ventilatory support.

*Prerequisite(s): (515-172 Respiratory Therapeutics 2 or min score of Y on R172) and 515-175 Respiratory Clinical 1 and (515-112 Respiratory Airway Management or min score of Y on R112)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-145 | Adv Respiratory Care Topics // 2 Credits**

A course to consider advanced topics and perform examination review for the RC students.

*Prerequisite(s): 515-178 Respiratory Clinical 2 and 515-179 Respiratory Clinical 3 and 515-112 Respiratory Airway Management or min score of Y on R112*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-171 | Respiratory Therapeutics 1 // 3 Credits**

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.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and (515-111 Respiratory Survey or min score of Y on R111)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-172 | Respiratory Therapeutics 2 // 3 Credits**

Introduces therapeutic procedures including arterial puncture, bronchial hygiene, lung expansion therapy, and pulmonary rehabilitation.

*Prerequisite(s): (515-171 Respiratory Therapeutics 1 or min score of Y on R171) and 515-173*

*Respiratory Pharmacology*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-173 | Respiratory Pharmacology // 3 Credits**

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.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and (515-111 Respiratory Survey or min score of Y on R111)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-174 | Respiratory/Cardiac Physiology // 3 Credits**

Provides the student with an in-depth knowledge of the structure and function of the respiratory and circulatory systems necessary to function as a competent Respiratory Therapist.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and (515-171 Respiratory Therapeutics 1 or min score of Y on R171) and 515-173 Respiratory Pharmacology*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-175 | Respiratory Clinical 1 // 2 Credits**

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.

*Prerequisite(s): (501-101 Medical Terminology or min score of Y on M101) and (515-171 Respiratory Therapeutics 1 or min score of Y on R171) and (515-172 Respiratory Therapeutics 2 or min score of Y on R172) and (515-174 Respiratory/Cardiac Physiology or min score of Y on R174) and (515-173 Respiratory Pharmacology or min score of Y on R173) and (515-176 Respiratory Disease or min score of Y on R176) and (515-111 Respiratory Survey or min score of Y on R111)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-176 | Respiratory Disease // 3 Credits**

Exploration of signs, symptoms, causes, progression, and treatment of obstructive, restrictive and infectious diseases or disorders of the body that affect the respiratory system.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 515-111 Respiratory Survey and 515-173 Respiratory Pharmacology*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-178 | Respiratory Clinical 2 // 3 Credits**

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 12 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical.

*Prerequisite(s): 515-175 Respiratory Clinical 1 and 806-197 Microbiology*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-179 | Respiratory Clinical 3 // 3 Credits**

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 19 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical.

*Prerequisite(s): 515-178 Respiratory Clinical 2*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-180 | Respiratory Neo/Peds Care // 2 Credits**

Provides a comprehensive orientation to the field of neonatal and pediatric respiratory care to include fetal development, birth, neonatal physiology, pulmonary dynamics, abnormal cardiopulmonary conditions, diseases, noninvasive and invasive therapeutic interventions.

*Prerequisite(s): (515-113 Respiratory Life Support or min score of Y on R113) and (515-112 Respiratory Airway Management or min score of Y on R112)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-181 | Respiratory/Cardio Diagnostics // 3 Credits**

Advanced invasive and noninvasive diagnostic cardiopulmonary procedures including pulmonary function, hemodynamics and rescue medicine.

*Prerequisite(s): (515-113 Respiratory Life Support or min score of Y on R113) and (515-176 Respiratory Disease or min score of Y on R176)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-182 | Respiratory Clinical 4 // 3 Credits**

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing, and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of this clinical, learners must demonstrate competence in a minimum of 26 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical.

*Prerequisite(s): 515-179 Respiratory Clinical 3 or (515-112 Respiratory Airway Management or min score of Y on R112)*

*Restricted to students admitted to the following program(s): 10-515-1*

**515-183 | Respiratory Clinical 5 // 3 Credits**

Focuses on the completion of respiratory therapy competencies and transition to employment. This course includes the complete program competency list. At the completion of this clinical, 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.

*Prerequisite(s): 515-182 Respiratory Clinical 4*

*Restricted to students admitted to the following program(s): 10-515-1*

## Educational Services

### **522-102 | EDU: Techniques in Reading // 3 Credits**

This course will focus on best practices in working with children in their development of reading and language arts. The student will gain an understanding of the reading process and how to work with all children and reinforce instruction individually and in groups through questioning, listening and guiding, and scaffolding techniques. Current instructional approaches will be analyzed and practices to support individualized, small group and large group instruction.

### **522-103 | EDU: Intro to Ed Practices // 3 Credits**

This course will include the study of historical, philosophical and social foundations of education; issues and trends including diversity affecting our schools of today including elementary, middle level and secondary educational settings. An overview of the WI Department of Public Instruction and federal regulations; WI Act 31 Treaty Rights, fundamentals of teaching methodologies, learning styles, questioning techniques, and basic assessment practices will be addressed.

### **522-104 | EDU: Technology in Ed // 3 Credits**

This course provides the opportunity for the learner to develop the knowledge and skills to use trending classroom technologies. Students will gain experience creating and using web tools including electronic portfolios.

### **522-105 | EDU: Behavior Management // 3 Credits**

Students evaluate models of behavior management, analyze social emotional learning, and explain the importance of proactive management techniques. In addition, students evaluate models of behavior management, analyze behavior and analyze the influence of Adverse Childhood Experiences on behavior in order to focus on developing skills to assist in empowering children to take an active role in self-control and classroom management.

### **522-106 | EDU: Child & Adol Dev // 3 Credits**

This course provides the opportunity for the learner to develop the knowledge and skills to use trending classroom technologies. Students will gain experience creating and using web tools including electronic portfolios.

### **522-107 | EDU: Overview of Spec Ed // 3 Credits**

This course provides an overview of the special education law. Special education categories under IDEA and associated causes and characteristics will be explored as well as state and federal qualification criteria will be examined. Societal responses to students with disabilities as well as the impact of a student with disabilities on family dynamics will also be covered in this course.

### **522-112 | EDU: Equity in Education // 3 Credits**

Students analyze personal culture, explore cultural constructs, evaluate cultural bias in educational materials and analyze strategies to support English Learners. Students examine diversity in the classroom and develop techniques for supporting equity in the learning environment. In addition, students collaborate to identify service needs in the community and demonstrate professional collaboration skills through participating in a service learning project.

### **522-114 | EDU: Techniques/Lang Art // 3 Credits**

Students explore various genres of children's and young adult literature. Students examine techniques used to support learners in reading and writing and strategies for assessing learners in the process. Students examine techniques to support learners with reading and writing across the curriculum.

### **522-118 | EDU: Techniques in Math // 3 Credits**

This course will address techniques for the Instructional Assistant in assisting the classroom teacher in group and individual tutoring activities in math. Current practice including manipulatives, problem solving and assessment will be covered within the framework of state and national standards.

**522-119 | EDU: Techniques in Soc Stu // 3 Credits**

Students analyze current content in social studies education as recommended by the National Council for the Social Studies and design learning opportunities for the five components of social studies: Geography. History. Culture and Society. Civics and Government, and Economics. Students explore factors that influence social studies instruction.

**522-120 | EDU: Techniques in Science // 3 Credits**

The course is an introduction to the content and processes of science. Strategies of teaching science will be studied and practiced and will prepare you in assisting the classroom teacher in group and individual activities in science. Current science processes, strategies, procedures, assessment options and factors affecting science learning will be explored.

**522-124 | EDU: Supporting Stu w/Disab // 3 Credits**

This course focuses on examining how a continuum of service is delivered to students with special education needs including in the inclusive classroom setting and through supportive and related services. A review of the law will be provided as it relates to special education, and the individual educational program (IEP), assessment and planning process through transition. Based on the premise that all children can learn, students will examine factors, which enhance learning through a study of various classroom accommodations and instructional formats such as direct instruction, strategy instruction and task analysis. Students will engage in simulated classroom activities to explore and practice incorporating a wide array of research-based interventions and instructional techniques and programs used to support students with disabilities in all major curricular areas and to help students develop effective study skills. Students will practice monitoring and recording child and youth behavior. Techniques used to support students with medically fragile needs will be explored. Students will develop a philosophy related to responsible inclusion.

*Prerequisite(s): 522-107 EDU: Overview of Spec Ed*

**522-129 | EDU: Practicum 1 // 3 Credits**

Practicum I will introduce the student to a diverse classroom setting at an elementary, middle school and/or high school level. The student will observe children and practice techniques under the guidance of a DPI certified teacher.

*Prerequisite(s): 522-134 EDU: Overview of Autism or 522-103 EDU: Intro to Ed Practices*

*Restricted to students admitted to the following program(s): 10-522-2, 30-522-3*

**522-131 | EDU: Practicum 2 // 3 Credits**

Apply the skills learned in previous program courses in a school setting while under the supervision of a DPI certified teacher. Students support children with special education needs and programming. Job search skills will be addressed and a professional portfolio will be completed.

*Prerequisite(s): 522-129 EDU: Practicum 1*

*Restricted to students admitted to the following program(s): 10-522-2*

**522-134 | EDU: Overview of Autism // 3 Credits**

Understanding the characteristics of autism spectrum disorder (ASD) is critical for those interacting with children/youth on the spectrum. Develop a fundamental understanding of what ASD is, how it is diagnosed and the primary areas of impairment.

**522-135 | EDU: Autism in the Classroom // 3 Credits**

Explore the effects of a positive learning environment, specialized instructional methods and relevant services to support children diagnosed with autism spectrum disorder in classroom settings.

*Prerequisite(s): 522-134 EDU: Overview of Autism*

### **522-138 | Communication and Autism // 3 Credits**

Communication deficits are a primary symptom of Autism Spectrum Disorders (ASD). Examine communication in Autism Spectrum Disorders (ASD) for those who are either non-verbal or have limited verbal abilities. Learn about language skills, deficits and needs, review intervention models, and learn strategies to increase communication abilities in those with ASD, with particular emphasis on visual aspects of language. Field observation hours are required.  
*Prerequisite(s): 522-134 EDU: Overview of Autism*

## **Physical Therapy Assistant**

### **524-139 | PTA Patient Interventions // 4 Credits**

An introduction to basic skills and physical therapy interventions performed by the physical therapist assistant.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 524-156 PTA Applied Kinesiology 1, 524-157 PTA Applied Kinesiology 2*

*Restricted to students admitted to the following program(s): 10-524-1*

### **524-140 | PTA Professional Issues 1 // 2 Credits**

Introduces the history and development of the physical therapy program, legal and ethical issues, the interdisciplinary health care team, and professional communication skills.

*Prerequisite(s): 524-139 PTA Patient Interventions and (524-156 PTA Applied Kinesiology 1 or min score of Y on T156) and 524-157 PTA Applied Kinesiology 2*

*Corequisite(s): 524-142 PTA Therapeutic Exercise, 524-143 PTA Biophysical Agents, 524-145 PTA Princ of Musculo Rehab, 524-147 PTA Clinical Practice 1*

### **524-142 | PTA Therapeutic Exercise // 3 Credits**

Provides instruction on the implementation of a variety of therapeutic exercise principles. Learners implement, educate, adapt, and assess responses to therapeutic exercises.

*Prerequisite(s): 524-139 PTA Patient Interventions and (524-156 PTA Applied Kinesiology 1 or min score of Y on T156) and 524-157 PTA Applied Kinesiology 2*

*Corequisite(s): 524-140 PTA Professional Issues 1, 524-143 PTA Biophysical Agents, 524-145 PTA Princ of Musculo Rehab, 524-147 PTA Clinical Practice 1*

### **524-143 | PTA Biophysical Agents // 4 Credits**

Develops the knowledge and technical skills necessary to perform numerous therapeutic modalities likely to be utilized as a PTA.

*Prerequisite(s): 524-139 PTA Patient Interventions and (524-156 PTA Applied Kinesiology 1 or min score of Y on T156) and 524-157 PTA Applied Kinesiology 2*

*Corequisite(s): 524-140 PTA Professional Issues 1, 524-142 PTA Therapeutic Exercise, 524-145 PTA Princ of Musculo Rehab, 524-147 PTA Clinical Practice 1*

### **524-144 | PTA Princ of Neuro Rehab // 4 Credits**

Integrates concepts of neuromuscular pathologies, physical therapy interventions, and data collection in patient treatment.

*Prerequisite(s): 524-148 PTA Clinical Practice 2*

*Corequisite(s): 524-146 PTA Cardio & Integ Mgmt*

**524-145 | PTA Princ of Musculo Rehab // 4 Credits**

Integrates concepts of musculoskeletal pathologies, physical therapy interventions, and data collection in patient treatment.

*Prerequisite(s): 524-139 PTA Patient Interventions and (524-156 PTA Applied Kinesiology 1 or min score of Y on T156) and 524-157 PTA Applied Kinesiology 2*

*Corequisite(s): 524-140 PTA Professional Issues 1, 524-142 PTA Therapeutic Exercise, 524-143 PTA Biophysical Agents, 524-147 PTA Clinical Practice 1*

**524-146 | PTA Cardio & Integ Mgmt // 3 Credits**

Integrates concepts of cardiopulmonary and integumentary pathologies, physical therapy interventions, and data collection in patient treatment.

*Prerequisite(s): 524-148 PTA Clinical Practice 2*

*Corequisite(s): 524-144 PTA Princ of Neuro Rehab*

**524-147 | PTA Clinical Practice 1 // 2 Credits**

Provides a part-time clinical experience to apply foundational elements, knowledge, and technical skills pertinent to physical therapy practice.

*Prerequisite(s): (524-156 PTA Applied Kinesiology 1 or min score of Y on T156) and 524-157 PTA Applied Kinesiology 2 and 524-139 PTA Patient Interventions*

*Corequisite(s): 524-142 PTA Therapeutic Exercise, 524-143 PTA Biophysical Agents, 524-145 PTA Princ of Musculo Rehab*

**524-148 | PTA Clinical Practice 2 // 3 Credits**

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): (524-140 PTA Professional Issues 1 or min score of Y on T140) and 524-142 PTA Therapeutic Exercise and (524-143 PTA Biophysical Agents or min score of Y on T143) and 524-145 PTA Princ of Musculo Rehab and 524-147 PTA Clinical Practice 1*

**524-149 | PTA Rehab Across the Lifespan // 2 Credits**

A capstone course that integrates concepts of pathology, physical therapy interventions and data collection across the lifespan. In addition, the PTA's role in health, wellness and prevention, reintegration, and physical therapy interventions for special patient populations will be addressed.

*Prerequisite(s): 524-144 PTA Princ of Neuro Rehab and 524-146 PTA Cardio & Integ Mgmt and 524-148 PTA Clinical Practice 2*

*Corequisite(s): 524-150 PTA Professional Issues 2, 524-151 PTA Clinical Practice 3*

**524-150 | PTA Professional Issues 2 // 2 Credits**

Incorporates professional development, advanced legal and ethical issues, healthcare management and administration, and further development of professional communication strategies.

*Prerequisite(s): 524-144 PTA Princ of Neuro Rehab and 524-146 PTA Cardio & Integ Mgmt and 524-148 PTA Clinical Practice 2*

*Corequisite(s): 524-149 PTA Rehab Across the Lifespan, 524-151 PTA Clinical Practice 3*

**524-151 | PTA Clinical Practice 3 // 5 Credits**

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): 524-144 PTA Princ of Neuro Rehab and 524-146 PTA Cardio & Integ Mgmt and 524-148 PTA Clinical Practice 2*

*Corequisite(s): 524-149 PTA Rehab Across the Lifespan, 524-150 PTA Professional Issues 2*

**524-156 | PTA Applied Kinesiology 1 // 4 Credits**

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): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 524-139 PTA Patient Interventions, 524-157 PTA Applied Kinesiology 2*

*Restricted to students admitted to the following program(s): 10-524-1*

**524-157 | PTA Applied Kinesiology 2 // 3 Credits**

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): 806-177 Gen Anatomy & Physiology and (524-156 PTA Applied Kinesiology 1 or min score of Y on T156)*

*Corequisite(s): 524-139 PTA Patient Interventions*

*Restricted to students admitted to the following program(s): 10-524-1*

## Radiologic Technology

**526-149 | Radiographic Procedures 1 // 5 Credits**

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 result.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-158 | Introduction to Radiography // 3 Credits**

Introduces students to the role of radiography in health care. Students apply medical terminology, legal and ethical considerations to patient care and pharmacology in the radiologic sciences.

*Restricted to students admitted to the following program(s): 10-526-1*

**526-159 | Radiographic Imaging // 3 Credits**

Introduces radiography students to the process and components of analog imaging. Students determine the factors that affect image quality including contrast, density, detail, and distortion.

*Restricted to students admitted to the following program(s): 10-526-1*

**526-165 | Radiography Clinical 1 // 1 Credits**

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 health care 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): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 526-149 Radiographic Procedures 1, 526-158 Introduction to Radiography, 526-159 Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-168 | Radiography Clinical 1 // 2 Credits**

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 health care 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): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 526-149 Radiographic Procedures 1, 526-158 Introduction to Radiography, 526-159 Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-174 | ARRT Certification Seminar // 2 Credits**

Provides preparation for the for the national certification exam prepared by the American Registry of Radiologic Technologists. Emphasis is placed on the weak areas of the individual students. Simulated registry examinations are utilized.

*Restricted to students admitted to the following program(s): 10-526-1*

**526-183 | Radiography Clinical 3 // 2 Credits**

This third 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 health care 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): 526-191 Radiographic Procedures 2 and 526-192 Radiography Clinical 2 and 526-230 Advanced Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-184 | Radiography Clinical 5 // 3 Credits**

This 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 health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

*Prerequisite(s): 526-199 Radiography Clinical 4*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-185 | Radiography Clinical 6 // 3 Credits**

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 health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

*Prerequisite(s): 526-184 Radiography Clinical 5*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-189 | Radiographic Pathology // 1 Credits**

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): 526-191 Radiographic Procedures 2*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-190 | Radiography Clinical 5 // 2 Credits**

This 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 health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

*Prerequisite(s): 526-199 Radiography Clinical 4*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-191 | Radiographic Procedures 2 // 5 Credits**

Prepares radiography students to perform routine radiologic 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 result.

*Prerequisite(s): 526-149 Radiographic Procedures 1 and 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-192 | Radiography Clinical 2 // 3 Credits**

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 health care 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): 526-165 Radiography Clinical 1*

*Corequisite(s): 526-191 Radiographic Procedures 2, 526-230 Advanced Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-193 | Radiography Clinical 3 // 3 Credits**

This third 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 health care 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): 526-192 Radiography Clinical 2 and 526-230 Advanced Radiographic Imaging and 526-191 Radiographic Procedures 2*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-194 | Imaging Equipment Operation // 3 Credits**

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.

*Prerequisite(s): 526-158 Introduction to Radiography and 526-159 Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-195 | Radiographic Image Analysis // 2 Credits**

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.

*Prerequisite(s): 526-191 Radiographic Procedures 2 and 526-230 Advanced Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-197 | Radiation Protection & Biology // 3 Credits**

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): 526-158 Introduction to Radiography and 526-194 Imaging Equipment Operation*

*Restricted to students admitted to the following program(s): 10-526-1*

**526-198 | Radiography Clinical 6 // 2 Credits**

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 health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

*Prerequisite(s): 526-190 Radiography Clinical 5*

**526-199 | Radiography Clinical 4 // 3 Credits**

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 health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies.

*Prerequisite(s): 526-193 Radiography Clinical 3*

**526-200 | Intro to DMS // 3 Credits**

This course introduces learners to the field of Diagnostic Medical Sonography. Explores the duties and functions of the Diagnostic Medical Sonographer as well as the historical background. Learners examine the other imaging modalities as they relate to Sonography. Includes principles of patient care and legal and ethical issues related to Sonography.

*Restricted to students admitted to the following program(s): 10-526-2*

**526-203 | Scanning With Proficiency // 1 Credits**

Prepares learners for the rigors of clinical imaging by performing timed abdominal and gynecological competencies.

*Corequisite(s): 526-212 OB/GYN Sonography 2*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-207 | Abdominal Sonography // 4 Credits**

Prepares learners to perform ultrasounds of the abdominal organs including liver, gallbladder, biliary tree, pancreas, spleen, urinary tract, aorta and retroperitoneum. Emphasis is placed on recognizing the anatomy and pathology of the abdominal organs. Practice scan sessions included.

*Prerequisite(s): (501-101 Medical Terminology or min score of Y on M101) and 526-200 Intro to DMS and (526-210 Cross Sectional Anatomy or min score of Y on D210) and 526-221 Sonography Physics 1 and 806-179 Adv Anatomy & Physiology*

**526-208 | OB/GYN Sonography 1 // 3 Credits**

Prepares learners to perform ultrasounds of the nonpregnant uterus and the first trimester pregnancy. Explores the anatomy, physiology, and pathology of the female reproductive system as well as intrauterine and ectopic pregnancies.

*Prerequisite(s): (501-101 Medical Terminology or min score of Y on M101) or 530-153 Medical Terminology I and (526-210 Cross Sectional Anatomy or min score of Y on D210) and 806-179 Adv Anatomy & Physiology or 806-141 Anatomy & Physiology II*

**526-209 | DMS Clinical Experience 1 // 2 Credits**

Clinical 1 is a blended course. During this 8 week experience the learner will have a hands-on, interactive learning experience conducted at an approved JRC-DMS clinical site/sites (if two sites are required to offer fair opportunity). Additional course work including assignments, research, case study work up, quizzes/exams, and discussions will be required on learner management system. The course is designed to help prepare the student sonographer for entry level employment in the workforce. Areas of concentration include sonography of the liver, gallbladder/biliary tract, pancreas, kidneys, retroperitoneum and non-gravid pelvic sonography both transabdominally and endovaginally. The student will apply his/her knowledge and experience in a working clinical environment. Sonographic technique, image acquisition, clinical correlation, and patient care skills are practiced under direct guidance of a registered staff sonographer. The student will become familiar with the organizational process and policies of the department. Students should strive to obtain competency in the areas of abdominal and pelvic scanning.

*Prerequisite(s): 526-212 OB/GYN Sonography 2 or min score of Y on D212*

*Corequisite(s): 526-226 DMS Clinical Experience 2*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-210 | Cross Sectional Anatomy // 2 Credits**

Introduces cross sectional anatomy as related to Diagnostic Medical Sonography. Includes correlating images from other imaging modalities.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-526-1, 10-526-2*

**526-211 | Superficial Sonography // 2 Credits**

Investigates superficial structure imaging. Includes anatomy, pathophysiology, and sonographic evaluation. Prepares learner to perform ultrasounds of the thyroid, breast, male reproductive system, musculoskeletal system, and GI tract.

*Prerequisite(s): (526-207 Abdominal Sonography or min score of Y on D207) and (526-208 OB/GYN Sonography 1 or min score of Y on D208)*

*Corequisite(s): 526-224 Vascular Imaging 2*

**526-212 | OB/GYN Sonography 2 // 3 Credits**

Prepares learners to perform ultrasounds of the second and third trimester pregnancy. Explores the anatomy, physiology, and pathology of the female pelvis and the developing fetus. Learners will be exposed to interventional procedures related to pregnancy.

*Prerequisite(s): 526-208 OB/GYN Sonography 1 or min score of Y on D208*

*Corequisite(s): 526-203 Scanning With Proficiency*

**526-215 | DMS Clinical Experience 3 // 4 Credits**

This course is the final clinical course of the program. It is an 11-week blended course. The learner will have a hands-on, interactive learning experience conducted at an approved JRC-DMS clinical site/sites (if two sites are required to offer fair opportunity). Additional course work including assignments, research, case study work up, quizzes/exams, and discussions will be required on the learner management system. The course is designed to help prepare the student sonographer for entry level employment in the workforce. All imaging skills will be at entry level employment by the end of this experience. The student learner will be capable of independently obtaining diagnostic quality exams in a time efficient manner for all structures previously practiced. Clinical 3 serves as a transition from student intern to employee.

*Prerequisite(s): 526-226 DMS Clinical Experience 2*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-217 | Registry Review // 1 Credits**

Prepares students to take the ARDMS examinations. Provides a review of the Diagnostic Medical Sonography competencies.

**526-221 | Sonography Physics 1 // 3 Credits**

Update to: Introduces physics and instrumentation relevant to diagnostic medical sonography. Learners explore how principles of sound propagation in tissues create a sonographic image. The laboratory component of this course introduces the student to the concepts of ultrasound instrumentation, and introduction to ultrasonic scanning technique, and maintenance of ultrasound equipment.

*Prerequisite(s): 806-154 General Physics 1 and 804-113 College Technical Math 1A and 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-222 | Sonography Physics 2 // 2 Credits**

Continues the study of physics and instrumentation relevant to diagnostic medical sonography.

*Prerequisite(s): 501-101 Medical Terminology and 526-200 Intro to DMS and 526-210 Cross Sectional Anatomy*

*Corequisite(s): 526-207 Abdominal Sonography, 526-208 OB/GYN Sonography 1, 526-223 Vascular Imaging 1*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-223 | Vascular Imaging 1 // 3 Credits**

Introduces the principles of vascular sonographic imaging. Learners perform a variety of peripheral vascular arterial and venous duplex exams.

*Prerequisite(s): 501-101 Medical Terminology and (526-200 Intro to DMS or min score of Y on D200) and (526-210 Cross Sectional Anatomy or min score of Y on D210) and 526-221 Sonography Physics 1 and 806-179 Adv Anatomy & Physiology*

*Corequisite(s): 526-207 Abdominal Sonography, 526-208 OB/GYN Sonography 1, 526-222 Sonography Physics 2*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-224 | Vascular Imaging 2 // 3 Credits**

Prepares learners to perform abdominal vascular and physiologic peripheral vascular exams.

*Prerequisite(s): 526-223 Vascular Imaging 1 or min score of Y on D223*

*Corequisite(s): 526-211 Superficial Sonography*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-226 | DMS Clinical Experience 2 // 4 Credits**

This clinical course is a blended course. During this 8 week experience the learner will have a hands-on, interactive learning experience conducted at an approved JRC-DMS clinical site/sites (if two sites are required to offer fair opportunity). Additional Course work including assignments, research, case study work up, quizzes/exams, and discussions will be required on the learning management system. The course is designed to help prepare the student sonographer for entry level employment in the workforce. The learner will concentrate efforts on scanning first, second, and third trimester obstetrics as well as vascular and superficial structures imaging. Clinical 2 will provide further opportunity to mature and expand the skills previously acquired in a clinical setting. Students begin to function as team members under the guidance of the instructor and authorized clinical personnel.

*Corequisite(s): 526-209 DMS Clinical Experience 1*

*Restricted to students admitted to the following program(s): 10-526-2*

**526-230 | Advanced Radiographic Imaging // 2 Credits**

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.

*Prerequisite(s): 526-159 Radiographic Imaging*

*Restricted to students admitted to the following program(s): 10-526-1*

### **526-231 | Imaging Modalities // 2 Credits**

Introduces radiography students to imaging modalities with an emphasis in computed tomography and cross-sectional anatomy.

*Restricted to students admitted to the following program(s): 10-526-1*

## **Medical Records**

### **530-103 | Medical Insurance & Billing // 2 Credits**

The focus of this course is medical insurance billing and claims processing. Requirements for processing claims from an insurance company perspective and the medical facility perspective are addressed. Specific insurance types include managed care organizations, Medicare, Medical Assistance, and commercial payers. An overview of CPT and ICD coding systems is provided. Fraud and abuse initiatives and compliance requirements are reviewed.

*Restricted to students admitted to the following program(s): 10-106-6, 10-530-6, 31-530-3*

### **530-107 | HIMT Fundamentals // 3 Credits**

This course provides learners a firm foundation in the knowledge and skills essential to the field of Health Information Management & Technology. Includes: healthcare delivery systems and organization; health record content, organization, and storage; information technology in healthcare; electronic health records; healthcare data sets and data standards; data and information governance; accreditation, and licensing documentation requirements; confidentiality, privacy, and security issues; the HIM profession and HIMT functions; and ethical issues in health information management and technology.

*Restricted to students admitted to the following program(s): 10-530-6, 31-530-3, TC-530-6*

### **530-118 | HC Statistics & Data Analytics // 2 Credits**

Analyzing data is critical to business practices and procedures, especially in the healthcare industry. Learners will explore the management of healthcare data using both descriptive and inferential statistics. They will learn about the collection, calculation, compilation, reporting, and presentation of administrative and clinical data. Learners will develop data quality application and data analytic skills they can use in the workplace.

*Prerequisite(s): (530-107 HIMT Fundamentals or min score of Y on H107) and (804-189 Introductory Statistics or 804-123 Math w Business Apps or 804-133 Math & Logic or 804-230 Statistics)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6*

### **530-151 | Applied HIM Technology 1 // 2 Credits**

The first of two project-based courses designed to align with current practices and the evolving roles in HIM. HIM concepts in several care settings (ambulatory, long-term, and acute) will be addressed. Learners will apply healthcare legislation and regulatory requirements; and computer technology for collection, storage, retrieval, analysis, reporting, and management of healthcare data. This course includes application of critical thinking and project management, and requires high educational taxonomies at the analyze, evaluate, and create levels.

*Prerequisite(s): (530-118 HC Statistics & Data Analytics and 530-178 Healthcare Law & Ethics) and 530-159 Healthcare Revenue Management*

*Restricted to students admitted to the following program(s): 10-530-6*

**530-152 | Applied HIM Technology 2 // 2 Credits**

The second of two project-based courses designed to incorporate a higher level of critical thinking, problem solving, and application of previously learned concepts in the areas of data governance, informatics and analytics of data, health information protection strategies, and graphical representations.

*Prerequisite(s): (530-151 Applied HIM Technology 1 or min score of Y on H151) and 530-161 Health Quality Management*

*Restricted to students admitted to the following program(s): 10-530-6*

**530-156 | HIM Leadership & Management // 2 Credits**

Examines fundamental leadership skills, including human resource best practices, performance improvement, financial management processes, ethical standards of practice, and workforce training. Also addressed in the course are healthcare consumer engagement activities as well as behaviors that embrace cultural diversity.

*Prerequisite(s): (530-107 HIMT Fundamentals or min score of Y on H107) and 530-118 HC Statistics & Data Analytics and 530-178 Healthcare Law & Ethics*

*Restricted to students admitted to the following program(s): 10-530-6*

**530-159 | Healthcare Revenue Management // 3 Credits**

Prepares learners to compare and contrast health care payers, illustrate the reimbursement cycle, and to comply with regulations related to fraud and abuse. Learners assign payment classifications with entry level proficiency using computerized encoding and grouping software.

*Prerequisite(s): (530-184 CPT Coding or min score of Y on H184) and (530-197 ICD Diagnosis Coding or min score of Y on H197) and (530-199 ICD Procedure Coding or min score of Y on H199)*

*Restricted to students admitted to the following program(s): 10-530-6, 31-530-3*

**530-160 | Healthcare Informatics // 3 Credits**

Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learners will develop skills to assist in information systems design and implementation.

*Prerequisite(s): 501-130 Healthcare IT or min score of Y on M130 and (530-107 HIMT Fundamentals or min score of Y on H107)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, TC-530-6*

**530-161 | Health Quality Management // 3 Credits**

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): 530-118 HC Statistics & Data Analytics*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6*

**530-178 | Healthcare Law & Ethics // 2 Credits**

Examines regulations for the content, use, confidentiality, disclosure, and retention of health information. An overview of the legal system and ethical issues are addressed.

*Prerequisite(s): 530-107 HIMT Fundamentals or min score of Y on H107*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6*

**530-182 | Human Diseases for Hlth Profes // 3 Credits**

This course focuses on the common diseases of each body system as encountered in all types of health care 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): (501-101 Medical Terminology or min score of Y on M101 or 530-153 Medical Terminology I) and (806-177 Gen Anatomy & Physiology or 806-140 Anatomy & Physiology I)*

**530-184 | CPT Coding // 3 Credits**

Prepares learners to assign CPT codes, supported by medical documentation, with entry level proficiency. Learners apply CPT instructional notations, conventions, rules, and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation.

*Prerequisite(s): (501-101 Medical Terminology or min score of Y on M101) and 806-177 Gen Anatomy & Physiology and (530-107 HIMT Fundamentals or min score of Y on H107) and (530-182 Human Diseases for Hlth Profes or min score of Y on H182)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, 31-530-3*

**530-185 | Healthcare Reimbursement // 2 Credits**

This course prepares learners to compare and contrast health care payers, illustrate the reimbursement cycle, and to comply with regulations related to fraud and abuse. Learners assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs), and Resource Utilization Groups (RUGs) with entry level proficiency using computerized encoding and grouping software.

*Prerequisite(s): (530-184 CPT Coding and 530-103 Medical Insurance & Billing and 530-197 ICD Diagnosis Coding) and 530-199 ICD Procedure Coding*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6*

**530-192 | HIMT Practicum // 2 Credits**

This course provides application of previously acquired HIM skills and knowledge in both classroom simulations as well as virtual and/or onsite healthcare settings. This course will also prepare students for the RHIT certification examination. Employment activities such as resumes, interviews, and job readiness are addressed.

*Prerequisite(s): 530-156 HIM Leadership & Management and (530-151 Applied HIM Technology 1 or min score of Y on H151) and (530-152 Applied HIM Technology 2 and 530-161 Health Quality Management and 530-195 Applied Coding)*

*Restricted to students admitted to the following program(s): 10-530-6*

**530-195 | Applied Coding // 2 Credits**

Prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation with intermediate level of proficiency. Students will prepare appropriate physician queries in accordance with compliance guidelines and will assign codes to optimize appropriate reimbursement.

*Prerequisite(s): (530-159 Healthcare Revenue Management or min score of Y on H159)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, 31-530-3*

**530-197 | ICD Diagnosis Coding // 3 Credits**

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): (501-101 Medical Terminology or min score of Y on M101) and 806-177 Gen Anatomy & Physiology and (530-107 HIMT Fundamentals or min score of Y on H107) and (530-182 Human Diseases for Hlth Profes or min score of Y on H182)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, 31-530-3*

### **530-199 | ICD Procedure Coding // 2 Credits**

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): (501-101 Medical Terminology or min score of Y on M101) and 806-177 Gen Anatomy & Physiology and (530-107 HIMT Fundamentals or min score of Y on H107) and (530-182 Human Diseases for Hlth Profes or min score of Y on H182)*

*Restricted to students admitted to the following program(s): 10-530-1, 10-530-6, 31-530-3*

## **Emergency Medical Service**

### **531-180 | Intro to Adv Pre-hospital Care // 2 Credits**

This course will serve as a bridge from the EMT-Basic into Advanced Life Support course offerings inclusive of EMT-Intermediate, Paramedic and FireMedic. Course will include lab (simulation). This course will lead to a better prepared learner as student moved into advanced level course work with a better understanding of occupation and expectation of the work place.

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1*

### **531-182 | Advanced Prehospital Skills // 2 Credits**

This course will serve as a bridge from the EMT-Basic into Advanced Life Support skills inclusive of Paramedic and FireMedic. This course will include lab (simulation) and will lead to a better prepared learner as the student moves into advanced level course work with a better understanding of occupation and expectation of the workplace.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 531-912 Paramedic Medical Principles*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 50-531-1*

### **531-303 | Advanced EMT // 4 Credits**

The Advanced Emergency Medical Technician (AEMT) program expands the role and skills of the EMT. A thorough knowledge of anatomy and physiology, skills involved in obtaining intravenous access, medication administration, and fluid therapy will be included. This instructional program consists of classroom lecture, practical labs, and a requirement of field experience. A current State of WI EMT license is required to enroll in this course.

### **531-357 | Medical Emergencies // 4 Credits**

This course is a study of the pathophysiology, assessment, and management of common medical emergencies including pulmonary, neurologic, endocrine, gastroenteral, renal/urologic, toxicologic, hematologic, environmental, infectious, and behavioral.

*Prerequisite(s): 531-351 Paramedic Fundamentals and 531-352 Pharmacology for Emer Medicine and 531-353 Airway Management and 531-355 Cardiovascular Emergencies and 531-370 Clinical I and (804-113 College Technical Math 1A or 804-141 Applied Algebra) and (806-177 Gen Anatomy & Physiology or 806-140 Anatomy & Physiology I)*

**531-911 | EMS Fundamental // 2 Credits**

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 health care professionals.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-912 | Paramedic Medical Principles // 4 Credits**

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): (531-911 EMS Fundamental or min score of Y on P911) and 806-177 Gen Anatomy & Physiology*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-913 | Adv. Patient Assess Principles // 3 Credits**

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, life span 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): 531-912 Paramedic Medical Principles or min score of Y on P912*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-914 | Adv. Pre-hospital Pharmacology // 3 Credits**

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): 531-913 Adv. Patient Assess Principles or min score of Y on P913*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-915 | Paramedic Respiratory Mgt. // 2 Credits**

This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate afield impression and implement a comprehensive treatment plan for a patient with a respiratory complaint.

*Prerequisite(s): 531-914 Adv. Pre-hospital Pharmacology or min score of Y on P914*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-916 | Paramedic Cardiology // 4 Credits**

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): 531-915 Paramedic Respiratory Mgt.*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-917 | Paramedic Clinical/Field 1 // 3 Credits**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course.

*Prerequisite(s): 531-916 Paramedic Cardiology*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2*

**531-918 | Adv Emergency Resuscitation // 1 Credits**

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): 531-916 Paramedic Cardiology*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-919 | Paramedic Medical Emergencies // 4 Credits**

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.

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-920 | Paramedic Trauma // 3 Credits**

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): 531-919 Paramedic Medical Emergencies*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-921 | Special Patient Populations // 3 Credits**

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma are also included within this course.

*Prerequisite(s): 531-920 Paramedic Trauma or min score of Y on P920*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-922 | EMS Operations // 1 Credits**

This course provides the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public, and EMS personnel safety.

*Prerequisite(s): 531-921 Special Patient Populations*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-923 | Paramedic Capstone // 1 Credits**

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): 531-922 EMS Operations or 531-166 EMS Operation*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-924 | Paramedic Clinical/Field 2 // 4 Credits**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in the field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by WI DHS EMS.

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-925 | Paramedic Clinical Field 1A // 2 Credits**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Clinical areas introduced are Physician I, Respiratory Therapy, IV Team, Emergency Department and OR.

*Prerequisite(s): 531-916 Paramedic Cardiology*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

**531-926 | Paramedic Clinical Field 1B // 1 Credits**

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Clinical areas introduced are intensive care medicine, pediatric emergency departments, obstetrics, and cardiac catheterization lab.

*Prerequisite(s): 531-925 Paramedic Clinical Field 1A*

*Restricted to students admitted to the following program(s): 10-531-1, 10-531-2, 31-531-1, 50-531-1*

## Central Services Tech/Asst

**534-300 | Sterile Proc Tech Fundamentals // 3 Credits**

Introduces packaging, cleaning techniques, care, handling, identification, and usage of instruments, equipment and supplies, basic aseptic techniques and patient centered practices in the lab setting. Students will also spend time working in a Central Service Department at a local hospital.

*Restricted to students admitted to the following program(s): 30-534-2, 50-534-1*

**534-302 | Sterile Process Tech Clinical // 1 Credits**

Learner is given the opportunity to apply what they have learned in the clinical setting at a local hospital. Time will be spent in the central service department as well as the operating room.

*Prerequisite(s): 534-300 Sterile Proc Tech Fundamentals*

*Restricted to students admitted to the following program(s): 30-534-2, 50-534-1*

## Therapeutic Massage

### **537-100 | Massage Therapy 1 // 3 Credits**

This course introduces the foundations of the massage therapy profession. Topics include general theory, equipment, and safety techniques. Learners will develop skills related to safety of self, clients, and equipment.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 537-101 MT Ethics & Business Practices, 537-102 MT Applied Kinesiology 1, 537-104 Massage Therapy 2*

### **537-101 | MT Ethics & Business Practices // 3 Credits**

This course explores the historical and cultural foundations of massage therapy, while also developing learners' professional ethics, standards, and legal knowledge. Learners will apply these principles to create a personalized business plan, develop effective professional collaboration skills, and establish a professional development plan to enhance their massage therapy practice. Through hands-on experiences and theoretical exploration, learners will gain the necessary skills to succeed in the massage therapy industry.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 537-100 Massage Therapy 1, 537-102 MT Applied Kinesiology 1, 537-104 Massage Therapy 2*

### **537-102 | MT Applied Kinesiology 1 // 3 Credits**

This course builds on foundational knowledge of anatomy and physiology while focusing on the basic principles of kinesiology relating to massage therapy. Learners will identify and describe the anatomical organization and general physiological principles of the human body. For all systems of the body, learners will demonstrate knowledge of structures, functions, and pathologies encountered in the practice of massage therapy.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology*

*Corequisite(s): 537-100 Massage Therapy 1, 537-101 MT Ethics & Business Practices, 537-104 Massage Therapy 2*

### **537-104 | Massage Therapy 2 // 3 Credits**

This course builds upon the concepts of Therapeutic Massage 1. Students will progress in depth and breadth of skills and techniques in therapeutic massage.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 537-100 Massage Therapy 1*

*Corequisite(s): 537-101 MT Ethics & Business Practices, 537-102 MT Applied Kinesiology 1*

### **537-106 | MT Pathology & Pharmacology // 2 Credits**

This course examines medical terminology, disease mechanisms, and physiological systems in the context of massage therapy. Learners apply medical terms in practical scenarios, assess disease processes and contraindications, and evaluate pharmacological concepts relevant to client care. Through critical thinking and hands-on assessments, learners determine the suitability of massage therapy based on pathology, risk factors, and client health history.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 537-100 Massage Therapy 1 and 537-101 MT Ethics & Business Practices and 537-102 MT Applied Kinesiology 1 and 537-104 Massage Therapy 2*

*Corequisite(s): 537-108 MT Applied Kinesiology 2, 537-110 Massage Therapy 3, 537-112 Massage Therapy Practice 1*

**537-108 | MT Applied Kinesiology 2 // 3 Credits**

This course builds on foundational knowledge from MT Applied Kinesiology 1. The learner analyzes functional movement patterns, assesses functional restrictions, and evaluates muscle tissue. Emphasis is placed on applying advanced assessment techniques to identify and address movement-related issues.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 537-100 Massage Therapy 1 and 537-101 MT Ethics & Business Practices and 537-102 MT Applied Kinesiology 1 and 537-104 Massage Therapy 2*

*Corequisite(s): 537-106 MT Pathology & Pharmacology, 537-110 Massage Therapy 3, 537-112 Massage Therapy Practice 1*

**537-110 | Massage Therapy 3 // 3 Credits**

This course expands on the concepts introduced in Massage Therapy 2, guiding learners in applying the scope of practice within a Wellness model. Students will create therapeutic environments, utilize hydrotherapy techniques, and foster professional client-therapist relationships. The course also focuses on using therapeutic techniques for athletes, providing sports massage for performance enhancement and injury prevention, and delivering customized, client-centered sessions.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 537-100 Massage Therapy 1 and 537-101 MT Ethics & Business Practices and 537-102 MT Applied Kinesiology 1 and 537-104 Massage Therapy 2*

*Corequisite(s): 537-106 MT Pathology & Pharmacology, 537-108 MT Applied Kinesiology 2, 537-112 Massage Therapy Practice 1*

**537-112 | Massage Therapy Practice 1 // 1 Credits**

A practical experience course where students will apply foundational knowledge and skills regarding all aspects of a massage clinic. Students will learn how to provide a positive client experience and beginner-level therapeutic massage treatments.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology and 537-100 Massage Therapy 1 and 537-101 MT Ethics & Business Practices and 537-102 MT Applied Kinesiology 1 and 537-104 Massage Therapy 2*

*Corequisite(s): 537-106 MT Pathology & Pharmacology, 537-108 MT Applied Kinesiology 2, 537-110 Massage Therapy 3*

**537-114 | Massage Therapy Practice 2 // 2 Credits**

This course applies the clinical application of hydrotherapy, pre- and post-sports massage, and sports injury treatment within therapeutic massage sessions. Learners assess client needs, select appropriate techniques, and integrate hydrotherapy to enhance treatment outcomes. Emphasizing injury prevention and recovery, learners develop customized treatment plans, perform targeted massage techniques, and provide home care education. Accurate documentation and client-centered communication are reinforced to support athletic performance and overall wellness.

*Prerequisite(s): 537-106 MT Pathology & Pharmacology and 537-108 MT Applied Kinesiology 2 and 537-110 Massage Therapy 3 and 537-112 Massage Therapy Practice 1*

**537-115 | MT Special Populations // 3 Credits**

This course introduces the various special populations of clients commonly seen for Massage Therapy. Students will learn appropriate massage therapy interventions for these populations, including contraindications and precautions.

*Prerequisite(s): 537-114 Massage Therapy Practice 2*

*Corequisite(s): 537-116 Massage Therapy Practice 3*

**537-116 | Massage Therapy Practice 3 // 3 Credits**

A practical experience course where students will participate in all aspects of a massage clinic. Students will progress their specialized therapeutic massage skills for special populations and patients across the lifespan.

*Prerequisite(s): 537-114 Massage Therapy Practice 2*

*Corequisite(s): 537-115 MT Special Populations*

### **537-117 | Advanced Massage Techniques // 3 Credits**

This course focuses on manual and assessment skills needed to provide individualized, advanced interventions to clients across the lifespan.

*Prerequisite(s): 537-115 MT Special Populations and 537-116 Massage Therapy Practice 3*

*Corequisite(s): 537-118 Massage Therapy Practice 4, 537-119 MT Lymphedema & Craniosacral*

### **537-118 | Massage Therapy Practice 4 // 3 Credits**

A practical experience course where students will participate in all aspects of a massage clinic. Students will become competent in assessing and treating complex clients.

*Prerequisite(s): 537-115 MT Special Populations and 537-116 Massage Therapy Practice 3*

*Corequisite(s): 537-117 Advanced Massage Techniques, 537-119 MT Lymphedema & Craniosacral*

### **537-119 | MT Lymphedema & Craniosacral // 3 Credits**

This course will specialize in the lymphatic and craniosacral systems. Students will learn the theory and manual skills to treat health conditions associated with these systems.

*Prerequisite(s): 537-115 MT Special Populations and 537-116 Massage Therapy Practice 3*

*Corequisite(s): 537-117 Advanced Massage Techniques, 537-118 Massage Therapy Practice 4*

## **Nursing**

### **543-101 | Nursing Fundamentals // 2 Credits**

This course focuses on basic nursing concepts that the beginning nurse will need to provide 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 with alterations in cognition, elimination, comfort, grief/loss, mobility, integument, and fluid/electrolyte balance. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology or 806-140 Anatomy & Physiology I or 806-207 Anatomy & Physiology 1*

*Corequisite(s): 543-103 Nursing Pharmacology*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

### **543-102 | Nursing Skills // 3 Credits**

This course focuses on development of clinical skills and physical assessment across the lifespan. Content includes mathematic calculations and conversions related to clinical skills, blood pressure assessment, aseptic technique, wound care, oxygen administration, tracheostomy care, suctioning, management of enteral tubes, basic medication administration, glucose testing, enemas, ostomy care, and catheterization. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.

*Prerequisite(s): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-103 Nursing Pharmacology or min score of Y on N103) and (806-177 Gen Anatomy & Physiology or 806-207 Anatomy & Physiology 1 or 806-140 Anatomy & Physiology I)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

**543-103 | Nursing Pharmacology // 2 Credits**

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. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology or 806-207 Anatomy & Physiology 1 or 806-140 Anatomy & Physiology I*

*Corequisite(s): 543-101 Nursing Fundamentals*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

**543-104 | Nurs Intro Clinical Practice // 2 Credits**

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): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-102 Nursing Skills or min score of Y on N102) and (543-103 Nursing Pharmacology or min score of Y on N103) and (806-177 Gen Anatomy & Physiology or 806-207 Anatomy & Physiology 1 or 806-140 Anatomy & Physiology I)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

**543-105 | Nursing Health Alterations // 3 Credits**

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 clients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply therapeutic nursing interventions. It will also introduce concepts of leadership, team building, and scope of practice. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-102 Nursing Skills or min score of Y on N102) and (543-103 Nursing Pharmacology or min score of Y on N103) and (543-104 Nurs Intro Clinical Practice or min score of Y on N104) and (806-177 Gen Anatomy & Physiology or 806-207 Anatomy & Physiology 1 or 806-140 Anatomy & Physiology I) and (809-188 Developmental Psychology or 809-130 Developmental Psychology)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

### **543-106 | Nursing Health Promotion // 3 Credits**

This course will cover topics related to health promotion in the context of the family 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 health 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. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-102 Nursing Skills or min score of Y on N102) and (543-103 Nursing Pharmacology or min score of Y on N103) and (543-104 Nurs Intro Clinical Practice or min score of Y on N104) and (806-177 Gen Anatomy & Physiology or 806-207 Anatomy & Physiology I or 806-140 Anatomy & Physiology I) and (809-188 Developmental Psychology or 809-130 Developmental Psychology)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

### **543-107 | Nsg: Clin Care Across Lifespan // 2 Credits**

This clinical experience applies nursing concepts and therapeutic interventions to clients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.

*Prerequisite(s): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-102 Nursing Skills or min score of Y on N102) and (543-103 Nursing Pharmacology or min score of Y on N103) and (543-104 Nurs Intro Clinical Practice or min score of Y on N104)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

### **543-108 | Intro to Clinical Care Mgmt // 2 Credits**

This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of clients across the lifespan. It also provides an introduction to leadership, management, and team building.

*Prerequisite(s): (543-101 Nursing Fundamentals or min score of Y on N101) and (543-102 Nursing Skills or min score of Y on N102) and (543-103 Nursing Pharmacology or min score of Y on N103) and (543-104 Nurs Intro Clinical Practice or min score of Y on N104) and (809-188 Developmental Psychology or 809-130 Developmental Psychology)*

*Restricted to students admitted to the following program(s): 10-543-1, 31-543-1*

### **543-109 | Nursing Complex Health Alts 1 // 3 Credits**

This course prepares the learner to expand knowledge from previous courses in caring for clients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as clients with fluid/electrolyte and acid-base imbalance, and alterations in comfort. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-105 Nursing Health Alterations or min score of Y on N105) and (543-106 Nursing Health Promotion or min score of Y on N106) and (543-107 Nsg: Clin Care Across Lifespan or min score of Y on N107) and (543-108 Intro to Clinical Care Mgmt or min score of Y on N108) and (806-179 Adv Anatomy & Physiology or 806-141 Anatomy & Physiology II) or (806-207 Anatomy & Physiology I and 806-208 Anatomy & Physiology 2) and (806-197 Microbiology or 806-132 Applied Microbiology)*

*Restricted to students admitted to the following program(s): 10-543-1*

**543-110 | Mental Health & Comm Concepts // 2 Credits**

This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-105 Nursing Health Alterations or min score of Y on N105) and (543-106 Nursing Health Promotion or min score of Y on N106) and (543-107 Nsg: Clin Care Across Lifespan or min score of Y on N107) and (543-108 Intro to Clinical Care Mgmt or min score of Y on N108) and (806-179 Adv Anatomy & Physiology or 806-141 Anatomy & Physiology II) or (806-207 Anatomy & Physiology 1 and 806-208 Anatomy & Physiology 2) Restricted to students admitted to the following program(s): 10-543-1*

**543-111 | Nursing Intermediate Clin Prac // 3 Credits**

This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients 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): (809-198 Intro to Psychology or 809-199 Psychology of Human Relations or 809-251 General Psychology) and (806-197 Microbiology or 806-132 Applied Microbiology) and (806-179 Adv Anatomy & Physiology or 806-207 Anatomy & Physiology 1 and 806-208 Anatomy & Physiology 2) or 806-141 Anatomy & Physiology II Restricted to students admitted to the following program(s): 10-543-1*

**543-112 | Nursing Advanced Skills // 1 Credits**

This course focuses on the development of advanced clinical skills across the lifespan. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation and nasogastric/feeding tube insertion.

*Prerequisite(s): (543-105 Nursing Health Alterations or min score of Y on N105) and (543-106 Nursing Health Promotion or min score of Y on N106) and (543-107 Nsg: Clin Care Across Lifespan or min score of Y on N107) and (543-108 Intro to Clinical Care Mgmt or min score of Y on N108) and (806-179 Adv Anatomy & Physiology or 806-141 Anatomy & Physiology II) or (806-207 Anatomy & Physiology 1 and 806-208 Anatomy & Physiology 2) Restricted to students admitted to the following program(s): 10-543-1*

### **543-113 | Nursing Complex Health Alts II // 3 Credits**

This course prepares the learner to expand knowledge and skills from previous courses in caring for clients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary and the reproductive systems. The learner will also focus on management of care for clients with high-risk perinatal conditions, high-risk newborns and the ill child. Synthesis and application of previously learned concepts will be evident in the management of clients with critical/life threatening situations. Note: For Online offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-109 Nursing Complex Health Alts 1 or min score of Y on N109) and (543-110 Mental Health & Comm Concepts or min score of Y on N110) and (543-111 Nursing Intermediate Clin Prac or min score of Y on N111) and (543-112 Nursing Advanced Skills or min score of Y on N112) and (809-198 Intro to Psychology or 809-199 Psychology of Human Relations or 809-251 General Psychology) and (806-197 Microbiology or 806-132 Applied Microbiology)*

### **543-114 | Nursing Mgmt & Prof Concepts // 2 Credits**

This course covers nursing management and professional issues related to the role of the RN. Emphasis is placed on preparing for the RN practice. Note: For Online course offerings of this course: Online test dates are announced/posted in advance for students. Faculty will list in syllabus how far ahead students may work in an online course. Online courses are NOT self-paced or independent study. Faculty will list in the syllabus use of acceptable proctors. Faculty will NOT leave tests open more than one day unless pre-arranged and agreed upon in advance.

*Prerequisite(s): (543-109 Nursing Complex Health Alts 1 or min score of Y on N109) and (543-110 Mental Health & Comm Concepts or min score of Y on N110) and (543-111 Nursing Intermediate Clin Prac or min score of Y on N111) and (543-112 Nursing Advanced Skills or min score of Y on N112) and (809-198 Intro to Psychology or 809-199 Psychology of Human Relations or 809-251 General Psychology) and (806-197 Microbiology or 806-132 Applied Microbiology)*

### **543-115 | Nursing Adv Clinical Practice // 3 Credits**

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): (543-109 Nursing Complex Health Alts 1 or min score of Y on N109) and (543-110 Mental Health & Comm Concepts or min score of Y on N110) and (543-111 Nursing Intermediate Clin Prac or min score of Y on N111) and (543-112 Nursing Advanced Skills or min score of Y on N112) and (809-198 Intro to Psychology or 809-199 Psychology of Human Relations or 809-251 General Psychology) and (806-197 Microbiology or 806-132 Applied Microbiology)*

### **543-116 | Nursing Clinical Transition // 2 Credits**

This clinical experience prepares the student to assume the role of graduate nurse. The course promotes clinical decision-making, delegation, and collaboration to achieve client and organizational outcomes. Continued professional development is fostered.

*Prerequisite(s): (543-109 Nursing Complex Health Alts 1 or min score of Y on N109) and (543-110 Mental Health & Comm Concepts or min score of Y on N110) and (543-111 Nursing Intermediate Clin Prac or min score of Y on N111) and (543-112 Nursing Advanced Skills or min score of Y on N112) and (809-198 Intro to Psychology or 809-199 Psychology of Human Relations or 809-251 General Psychology) and (806-197 Microbiology or 806-132 Applied Microbiology)*

### **543-300 | Nursing Assistant // 2 Credits**

The Nursing Assistant program prepares students for employment as nursing assistants. The program also prepares students for other health-related programs. During the 86-hour course, students will be required to demonstrate the following skills under the supervision of a licensed nurse: communication, basic nursing assistant and personal care skills, attention to client's rights, and care of clients and dementias. The program is recognized by the Wisconsin Department of Health Services as a nurse-aide training program. Upon successful completion of the program, the student is eligible to take the Wisconsin Nursing Assistant competency evaluation for inclusion on the Wisconsin Nurse Aide Registry and employment in nursing homes, hospital, home health agencies, hospices, CBRF's, assistant living centers and homes for the developmentally disabled.

### **543-303 | Introduction to Patient Care // 1 Credits**

This course will provide students with an overview and knowledge to assist with providing basic care in the healthcare setting.

### **543-304 | Nursing Asst Lab & Clinical // 1 Credits**

This course applies knowledge from the Introduction to Patient Care course in the lab and clinical setting. Students will demonstrate competency in completing the skills necessary for employment as a nursing assistant. This course, in combination with 543-300 Introduction to Patient Care course, is equivalent to the 543-300 Nursing Assistant course.

*Prerequisite(s): 543-303 Introduction to Patient Care*

## **Substance Abuse Disorder Couns**

### **550-154 | Culturally Skilled Counseling // 3 Credits**

Learners develop an understanding of diversity among people and systems so they can provide substance use disorder counseling services that respond to the differences between and within cultures relative to norms, values, beliefs, communication styles, world views, and political, social, and historical factors. Learners also begin to recognize individual and institutional racism and prejudice, bias in professional training, racial identity development, and cultural competency issues in the substance use disorder counseling profession. Learners engage in self-examination, discussion, class and community activities, and relate these concepts to individualized treatment planning for the substance use disorder patient based on national CLAS standards outlined by the U.S. Office of Minority Health.

*Prerequisite(s): (550-200 Intro to the SUDC Profession or min score of Y on C200) and (550-201 Understanding Substance Use or min score of Y on C201) and (550-210 Boundaries/Ethics Helping Prof or min score of Y on C210) and (809-198 Intro to Psychology or 809-188 Developmental Psychology or 809-251 General Psychology) and (550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills)*

### **550-161 | SUDs & Criminality // 3 Credits**

An introduction to understanding and treating the substance use disorder patient who is also a criminal justice offender. Learners develop an understanding of how substance use issues impact major areas of the criminal justice offender patient's life. Focus is on understanding how the criminal justice system and the cognitive distortions of criminal thinking affect assessment and treatment planning for the patient.

*Prerequisite(s): 550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and (550-207 Psychopharmacology or min score of Y on C207) and (550-154 Culturally Skilled Counseling or min score of Y on C154) and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

**550-200 | Intro to the SUDC Profession // 3 Credits**

Explore characteristics that are incorporated into substance use counseling and practice. Determine personal values, beliefs, strengths, and weaknesses. Analyze the eight practice dimensions used to effectively treat substance use disorders: Clinical Evaluation; Treatment Planning; Referral; Service Coordination; Counseling; Patient, Family and Community Education; Documentation; and Professional and Ethical Responsibilities. Evaluate legal and ethical issues surrounding substance use counseling. Evaluate information about Wisconsin licensing for substance use counseling.  
*Restricted to students admitted to the following program(s): 10-550-1*

**550-201 | Understanding Substance Use // 3 Credits**

Explore the bio-psych social dynamics of substance use. Examine treatment approaches, models, and screening criteria. Examine substances of abuse, history of SUDs, and their impact on the individual and society.

**550-202 | Foundations of Case Management // 3 Credits**

Introduction to case management techniques and processes. Incorporates intake assessment techniques, service planning techniques, referral processes, coordination of care, and discharge processes determined by a multidisciplinary team approach. Includes client self-determination and autonomy. Incorporates clinical documentation requirements and processes.

*Prerequisite(s): (550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and 550-154 Culturally Skilled Counseling or min score of Y on C154) and 801-197 Technical Reporting and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

*Corequisite(s): 550-208 SUDC Assessmt, Diagnosis, Tmt*

**550-203 | Overview Mental Hlth Disorders // 3 Credits**

Provides an overview to the history, diagnosis, treatment strategies, legal and ethical considerations, and documentation of mental health conditions. Focus is on understanding the mental health conditions that co-occur with substance use disorders.

*Prerequisite(s): (550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and 550-154 Culturally Skilled Counseling or min score of Y on C154) and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

**550-204 | Group Facilitation // 3 Credits**

An introduction to theory and practice of group dynamics and processes. Includes ethical considerations, effective group leadership, and stages of group development. Also includes demonstration of group facilitation skills, clinical documentation, co-facilitation strategies, reflective practitioner techniques, and group formation.

*Prerequisite(s): 550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and (550-154 Culturally Skilled Counseling or min score of Y on C154) and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

*Corequisite(s): 550-211 Clinical Experience I*

**550-205 | Counseling Theory // 3 Credits**

Summarize the history of, and explore the primary concepts within, the major approaches to counseling. Explore the empirical foundations of each theory. Examine application of theories to counseling. Review specific techniques of each theoretical approach. Examine the role of the counselor within each theoretical approach. Explore the role of the counselor, the scope of practice, and the ethical implications in counseling.

*Prerequisite(s): (550-200 Intro to the SUDC Profession or min score of Y on C200) and (550-201 Understanding Substance Use or min score of Y on C201) and (550-210 Boundaries/Ethics Helping Prof or min score of Y on C210) and (801-136 English Composition 1 or 801-219 English Composition 1) and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

**550-206 | Intro Interview&Counsel Skills // 3 Credits**

Analyze foundational skills in the counseling relationship. Analyze the stages of the helping processes and the roles professionals play in the processes. Analyze the importance of establishing therapeutic relationships. Apply basic counseling techniques. Apply interviewing and counseling skills through mock counseling sessions and personal experience reflections. Examine issues of boundaries and ethics.

*Prerequisite(s): (550-200 Intro to the SUDC Profession or min score of Y on C200) and (550-201 Understanding Substance Use or min score of Y on C201) and (550-210 Boundaries/Ethics Helping Prof or min score of Y on C210) and (801-136 English Composition 1 or 801-219 English Composition 1) and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

**550-207 | Psychopharmacology // 3 Credits**

A basic pharmacology course covering mainly drugs capable of altering states of consciousness. Pharmacological classes of drugs studies include: CNS stimulants and depressants, hallucinogens, marijuana, inhalants, antidepressants, antipsychotics, and alcohol. Additional topics include: neuroanatomy, the action of agonists and antagonist on cell receptors, dosage calculations, and the development of tolerance. Each drug class studied will discuss the mechanism of action, metabolism, pharmacokinetics, dosage, names (street, generic and brand), approved medical use, chronic and acute toxicity, symptoms of withdrawal, drug interactions, dosage, routes of administration, and available preparations. The use and benefits of both conventional and computer based pharmacological reference material will be stressed. Students will learn the incidence of drug use and abuse in society, the pharmacology of selected drugs, and the principles of altering one's state of consciousness. Students will gain an established personal view of drug use and will be able to communicate their attitudes. Alternatives to substance abuse and approaches to prevention and community resources will be explored.

*Prerequisite(s): (550-200 Intro to the SUDC Profession or min score of Y on C200) and (550-201 Understanding Substance Use or min score of Y on C201) and (550-210 Boundaries/Ethics Helping Prof or min score of Y on C210) and 806-177 Gen Anatomy & Physiology and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

**550-208 | SUDC Assessmt, Diagnosis, Tmt // 3 Credits**

Explore the core components of substance use disorder treatment. Apply the core practice dimensions of Substance Use Disorder Counseling. Evaluate process for SUD clients for the purpose of developing treatment plans and documenting the treatment process.

*Prerequisite(s): 550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and (550-154 Culturally Skilled Counseling or min score of Y on C154) and 801-197 Technical Reporting and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

*Corequisite(s): 550-202 Foundations of Case Management*

**550-209 | Family Systems // 3 Credits**

Provides a broad understanding of family systems theory and practice relevant to the human services field. Focus is on evaluating the communication and interaction patterns and applying interventions and strategies.

*Prerequisite(s): 550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and (550-204 Group Facilitation or min score of Y on C204) and (809-196 Intro to Sociology or 809-271 Introductory Sociology)*

**550-210 | Boundaries/Ethics Helping Prof // 3 Credits**

Evaluate the ethical codes of the helping professions. Examine professional boundaries related to the helping professions. Incorporate ethical standards into decision making processes. Examine ethical considerations related to professional standards for the helping professions. Examine ethical considerations related to state and federal regulations for the helping professions. Examine the ethical considerations related to professional self-care.

*Restricted to students admitted to the following program(s): 10-550-1*

### **550-211 | Clinical Experience I // 3 Credits**

Immersive experience with an agency including supervised practice in the 12 core functions. Integrates the knowledge, theory, skills, and professional behaviors learned in the two previous semesters of coursework. Emphasis on gaining first-hand knowledge and refine previously acquired skills to gain a greater understanding of self and the helping professions.

*Prerequisite(s): 550-205 Counseling Theory and 550-206 Intro Interview&Counsel Skills and 550-207 Psychopharmacology and 550-154 Culturally Skilled Counseling and (809-188 Developmental Psychology or 809-198 Intro to Psychology or 809-251 General Psychology)*

*Corequisite(s): 550-204 Group Facilitation*

### **550-212 | Clinical Experience II // 3 Credits**

Immersion experience with an agency including supervised practice in the 12 core functions. Integrates the knowledge, theory, skills, and professional behaviors learned in previous courses and refined in Clinical I immersion experience. Emphasis on applying previously acquired knowledge and skills and gaining a greater understanding of self and the helping professions through first-hand experience.

*Prerequisite(s): (550-211 Clinical Experience I or min score of Y on C211) and (550-204 Group Facilitation or min score of Y on C204) and (550-208 SUDC Assessmt, Diagnosis, Tmt or min score of Y on C208) and (550-202 Foundations of Case Management or min score of Y on C202) and (809-196 Intro to Sociology or 809-271 Introductory Sociology)*

## **Library Science**

### **557-111 | Fnd of Library & Info Services // 3 Credits**

This course introduces library science, libraries, and the various services they are charged with providing. Library trends, their role in the community or institution, and governing relationships will be presented. In addition, the importance of customer service, career types, and career readiness will be discussed. Students will begin development of a digital portfolio repository for their program coursework which will be a valuable tool in employment-seeking.

### **557-113 | Basic Public Library Admin // 3 Credits**

This course introduces an overview of public library administration. Emphasis will be on library terminology, library structures, basic daily operations including budgeting, patron-staff interactions, challenges and controversies of libraries in the community, library infrastructures, and providing exceptional customer service.

### **557-115 | School Library Principles // 3 Credits**

This course provides an introduction to libraries in an educational setting with a focus on public school libraries or media centers. Working with children and young adults in a learning environment, promoting a positive learning environment, managing behavior, and working with diverse students will be emphasized in this course. Emerging trends, structures, digital collections and challenges will also be discussed.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and 890-115 Online Success Strategies*

### **557-117 | Managing & Org Collections // 3 Credits**

This course provides an examination of library's collections. Emphasis will be placed on library classification systems, cataloging according to specific classification system, the ILS's role in cataloging, and understanding OCLC and local shared resources. Explores collection development including criteria for selection/de-selection as well as the associated challenges.

**557-121 | Fund of Access Services // 3 Credits**

This course provides an introduction to the fundamentals and emerging trends of access services in a library. An overview of circulation processes and procedures, the ILS, stacks management, course reserves, interlibrary loan and document delivery will be covered. Explores the role of customer service, maintaining patron privacy, and working with patrons from diverse backgrounds. The course will also cover access service barriers, ways to reduce barriers for library customers and safety and security trends in libraries.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and (557-129 Online Learning & Technologies or 890-115 Online Success Strategies)*

**557-125 | Children's Literature & Svcs // 3 Credits**

This course introduces children's literature and related services in a variety of library types and educational settings. Emphasis will be on evaluating and selecting children's literature, developing engaging displays and activities, incorporating technologies and media into children's services, and presenting children's library materials. Trends, challenges, controversies, and barriers will also be discussed. The scope of this course is children ages 0 to 11.

**557-127 | Outreach & Community Services // 3 Credits**

This course provides an overview of services that libraries offer to communities or institutions. Emphasis will be placed on the importance of customer service, the reference interview, evaluating sources, library programming, readers' advisory, the growing role of technology in libraries, assisting patrons with their technology needs, and providing outreach and programming services to the public. Also covered is current trends, challenges, and controversies that libraries encounter when providing services to patrons.

**557-131 | Young Adult Literature & Svcs // 3 Credits**

This course introduces young adult literature and related services in a variety of library types and educational settings. Emphasis will be on evaluating, assessing, and selecting young adult materials, providing readers' advisory and reading lists, incorporating technologies and media to engage young adults, and leaving an impactful impression of library services for the future. Trends, challenges, controversies, and barriers will also be discussed. The scope of this course is young adults ages 12 to 18.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and (557-129 Online Learning & Technologies or 890-115 Online Success Strategies)*

**557-133 | Fund of Reference Services // 3 Credits**

This course provides an introduction to the fundamentals of reference and the role of instructional services. An overview of reference services will be examined while providing excellent customer service and follow-through to patrons. Emphasis on using electronic databases, OPACs, open educational resources, compiling bibliographies, examining patron feedback, and interpreting reference questions through the reference interview process.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and (890-115 Online Success Strategies or 557-129 Online Learning & Technologies)*

**557-134 | Library and Web Technologies // 3 Credits**

This course examines the use of physical, digital, and web technologies in libraries. Topics explored include the responsible use of technology, the digital landscape, productivity tools, technology solutions, data-driven decision making, virtual libraries, and future technologies.

*Prerequisite(s): 103-102 Microsoft Office Suite and 557-111 Fnd of Library & Info Services and 890-115 Online Success Strategies*

**557-136 | Advanced School Libraries // 3 Credits**

This course provides a more in-depth view of school libraries, including administration of school library programs. Students will build their capacity to develop learning experiences, build collections, and provide an equitable environment for diverse student populations. Students will also practice collaboration, leadership, and advocacy.

*Prerequisite(s): 557-115 School Library Principles*

**557-141 | Library Mentorship // 3 Credits**

The LIS practicum provides hands-on experience under the mentorship of experienced librarians or library staff. Students are expected to complete 120 hours of service at an approved library location and engage in a concentration of interest to gain valuable work experience. This course will also prepare students for work in libraries by completing a resume, portfolio, cover letter, and practicing interviewing techniques. It is expected that the candidates will have successfully completed all the prerequisite program courses and had a mentorship proposal approved prior to placement.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and 557-121 Fund of Access Services and (557-134 Library and Web Technologies or 557-123 Library & Edu Technologies) and 557-133 Fund of Reference Services and 557-117 Managing & Org Collections*

**557-143 | Adult Literature & Services // 3 Credits**

This course introduces adult literature, programming and related services in a variety of library types. Emphasis will be on evaluating, assessing, and selecting adult materials, providing readers' advisory and reading lists, incorporating technologies and media. Trends, challenges, controversies, and barriers will also be discussed.

**557-145 | Fundamentals of Tech Services // 3 Credits**

This course provides an introduction to the fundamentals and emerging trends of technical services in a library. An overview of acquisitions, processing and maintaining print materials, managing electronic collections, and maintaining serials subscriptions will be covered. Explores basic terminology related to technical services and related general policies and procedures.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and 890-115 Online Success Strategies*

**557-147 | Advanced Public Library Admin // 3 Credits**

This course provides a more in-depth view of public library administration. Emphasis will be on leading staff and volunteers, forming partnerships, basic legal issues related to public library services, the role of continuing education in the community, creating awareness and marketing libraries, managing change in the workplace, and advocating for the Library.

*Prerequisite(s): 557-113 Basic Public Library Admin*

**557-148 | Information Literacy // 3 Credits**

This course examines the role of information literacy in libraries and educational settings. Students will strengthen their own research skills by collaborating, evaluating, and communicating information with digital tools and resources, while learning to lead inquiry-based learning experiences that enable library users to become critical thinkers and effective, responsible users of ideas and information.

*Prerequisite(s): 557-111 Fnd of Library & Info Services and 890-115 Online Success Strategies*

**557-149 | Info Ethics & Legal Issues // 3 Credits**

This course introduces you to ethical and legal issues related to information use and dissemination in libraries and society. You will examine the library profession's stance on intellectual freedom and censorship; ethical and legal theories of information; professional ethics and law; copyright and intellectual property; and security and privacy issues.

*Prerequisite(s): 557-111 Fnd of Library & Info Services or 890-115 Online Success Strategies*

## Air Cond & Refrig Technlgy

### **601-105 | Refrigeration Principles // 2 Credits**

In this course, the student will properly use tools and test equipment for installation and servicing of domestic and commercial refrigeration systems. Soldering, brazing and flaring of copper tube systems is an essential skill developed in this course.

*Prerequisite(s): 601-106 Refrigeration Theory and 601-140 Electricity Theory and 601-148 Electricity Principles*

### **601-106 | Refrigeration Theory // 1 Credits**

This course will cover the basic refrigeration cycle and components. Different refrigerants and proper handling will also be included.

### **601-107 | Heating Theory // 1 Credits**

This course will cover the basics of how heat is transferred, moved and the properties of combustion.

### **601-108 | Pncples of Gas Heat & Airfl // 2 Credits**

Gas heating systems are evaluated and tested. Operation, service and maintenance are performed on gas heating systems. Evaluating the proper airflow patterns for a variety of applications is emphasized. Prerequisites are required.

*Prerequisite(s): 601-107 Heating Theory and 601-140 Electricity Theory and 601-148 Electricity Principles*

### **601-109 | Prin of Oil, Elec & Hydron Htg // 1 Credits**

Oil, electric and hydronic heating systems are evaluated and tested. Operation, service and maintenance are performed on oil, electric and hydronic heating systems. Prerequisites are required.

*Prerequisite(s): 601-107 Heating Theory and 601-140 Electricity Theory and 601-148 Electricity Principles*

### **601-114 | Plan & Print Reading-HVAC // 2 Credits**

In this course the fundamentals of reading and interpreting architectural, plumbing, HVAC, and electrical plans for the sizing and installation of equipment is covered. Working with actual plans of actual buildings the student is able to understand all aspects of basic plan reading. The International Code as modified by the State of Wisconsin is studied by the students giving them the necessary skills for proper system layout and design.

*Restricted to students admitted to the following program(s): 10-601-1*

### **601-116 | Principles of Air Conditioning // 2 Credits**

The purpose of this course will help the student understand how air is treated by air conditioning equipment to maintain our health, comfort, and cooling environment. The principles of air conditioning will be covered with a look at various types of air conditioning equipment. Equipment included would be air conditioners, heat pumps (geothermal and air-to-air) rooftops and other types of related equipment. This course will assist the student in understanding the principles that underlie present day air conditioning equipment, both residential and commercial.

*Prerequisite(s): 601-106 Refrigeration Theory and 601-140 Electricity Theory and 601-148 Electricity Principles*

### **601-117 | Drafting-HVAC // 2 Credits**

In this course the student draws the HVAC system for a two-story commercial building of his or her choice. The building may be an office building, school, hotel, etc. The student uses AutoCAD to create duct layout and piping drawings, equipment schedules, and details for the HVAC system he or she designs in HVAC System Design class. All equipment is selected by the student, and the system is designed in accordance with the International Code as modified by the state of Wisconsin.

*Prerequisite(s): 601-169 Basic HVAC CAD and 601-157 Commercial HVAC Systems Design and 601-167 Commercial HVAC Load Calcs*

**601-118 | Sustainability for HVAC // 1 Credits**

The purpose of this course is to answer the question, what is sustainability? The student will explore how sustainability is integrated into HVAC/R systems and building management systems. Improving efficiencies in systems and buildings would be the major goal.

**601-119 | Hydronic System Design // 3 Credits**

This course consists of the design and selection of modern hydronic heating systems and geothermal heat pumps. This course (specifically designed for HVAC/R students) studies the way which different components are connected, which translates in energy efficient operating systems. Detailed coverage of open and closed loop geothermal heat pump systems is covered. Systems analyzed include various heat sources, piping and fittings, circulating pumps, heat emitters, radiant panel heating, distribution piping, expansion tanks, air removal, and auxiliary loads. The student will perform sizing, layout, and design of complete systems.

*Restricted to students admitted to the following program(s): 10-601-1*

**601-121 | HVAC/R Service & Applications // 3 Credits**

Students learn the techniques to install, test, maintain, and troubleshoot residential and commercial air conditioning and refrigeration systems. Students will have the benefit of learning in a well-equipped lab that provides experience on both residential and commercial air conditioning and refrigeration systems. Equipment such as heat pumps (geothermal and air-to-air), rooftop air conditioners, walk-in freezers and furnaces, boilers, and other HVAC/R types of equipment will be worked on.

*Prerequisite(s): 601-116 Principles of Air Conditioning and 601-105 Refrigeration Principles and 601-106 Refrigeration Theory*

*Restricted to students admitted to the following program(s): 10-601-1, 31-401-1*

**601-122 | HVACR Industry Skills 2 // 1 Credits**

This course is designed to teach the student specific skills related to the Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) industry.

*Restricted to students admitted to the following program(s): 10-601-1, 31-401-1*

**601-123 | HVACR Industry Skills 1 // 1 Credits**

This course is designed to teach the student specific skills related to the Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) industry.

**601-125 | Safety - HVAC // 1 Credits**

This course provides OSHA based safety training for the HVAC industry.

*Restricted to students admitted to the following program(s): 10-601-1, 30-401-3, 31-401-1, 61-601-1, 61-601-2, 61-601-3, 61-601-4*

**601-130 | Sheet Metal Layout // 1 Credits**

The student will layout and fabricate a variety of sheet metal fittings. Safe working practices are reviewed and stressed. The proper use of hand tools, shears, benders and other types of sheet metal equipment are detailed and demonstrated. One and two piece duct, reducers, elbows, offsets, plenums, drive cleats, S-locks, and square to round transitions are fabricated and assembled.

**601-140 | Electricity Theory // 1 Credits**

This course will cover the fundamentals of electricity as related to air conditioning, heating, and refrigeration. Ohms Law, circuits, direct and alternating current will be introduced.

**601-142 | Schematic Wiring-HVAC // 2 Credits**

Learning to read and interpret electrical schematics found on a variety of HVAC/R equipment is the priority. By referring to an electrical schematic the student wires and operates HVAC/R equipment. The course helps in explaining and showing how each electrical component functions in an electrical circuit.

*Prerequisite(s): 601-141 Electricity-HVAC*

**601-143 | Advanced HVAC Controls // 2 Credits**

The purpose of this course is to review the basic concepts of a HVAC control system. Becoming familiar with the components of a direct digital control (DDC) and pneumatic control system are a priority. The student becomes familiar with analog and binary inputs and outputs. Programming and evaluating control schemes as found on HVAC equipment is the main emphasis.

*Restricted to students admitted to the following program(s): 10-601-1*

**601-144 | Solar/Wind Applications // 2 Credits**

This course provides an overview of solar water heating, solar air heating, solar photovoltaic and wind applications. Students will be involved in the installation, maintenance, service and performance of these systems. Passive and active solar systems will be reviewed. The declination angle and the effect it has on the sun's radiation during winter and summer is detailed in site evaluation. The student will be given the opportunity to explore and evaluate small wind systems.

**601-145 | Geothermal Applications // 1 Credits**

This course explores the use of air source heat pumps and geothermal heat pumps in the HVAC industry. Students work on actual systems and learn the basics of installation, operations, maintenance and troubleshooting. The economics and practical applications are also examined.

**601-146 | Schematic Wiring-HVACR // 1 Credits**

The primary focus of this class is learning to read and interpret schematic symbols and diagrams. Students will be able to wire and operate various HVAC equipment using the schematics found on the equipment. They will also be able to identify individual circuits and their function when given a schematic diagram.

*Prerequisite(s): 601-140 Electricity Theory and 601-148 Electricity Principles*

**601-147 | Schematic Wiring-Trblshtng // 1 Credits**

This course focuses on having students use their knowledge of schematics and electricity to troubleshoot a variety of HVAC/R systems. Both computer simulations and actual working equipment will be used to provide experience in troubleshooting. Emphasis will be on proper use of multi-meters and other electrical testing equipment to determine underlying faults.

*Prerequisite(s): 601-140 Electricity Theory and 601-148 Electricity Principles and 601-146 Schematic Wiring-HVACR*

**601-148 | Electricity Principles // 2 Credits**

Wiring and physical properties as they are related to electricity will be covered. Motors, controls and electrical meters used in the HVAC/R industry will be covered and applied.

*Prerequisite(s): 601-140 Electricity Theory*

**601-151 | Technical Problems-HVAC // 2 Credits**

This course utilizes the knowledge gained in previous courses. The student will be asked to diagnose and troubleshoot a variety of electrical and mechanical problems found on actual HVAC/R equipment. These problems are also simulated using computer programs. The student will complete a detailed start-up analysis on a gas and oil furnace.

*Prerequisite(s): 601-107 Heating Theory and 601-108 Prncples of Gas Heat & Airfl and 601-109 Prin of Oil, Elec & Hydron Htg*

*Restricted to students admitted to the following program(s): 10-601-1, 31-401-1*

**601-153 | Basic Home Automation // 1 Credits**

This course introduces the basics of home automation. The student will learn how to wire and program thermostats, install and set-up wireless thermostats, and learn the basic programming of simple whole home automation including security, lighting and interior comfort.

**601-155 | HVAC Air Handling // 2 Credits**

The purpose of this course is to inform the student about air and analyzing its properties. The study of fans, fan laws, HVAC system balancing, duct layout and sizing detailed. The students are given the opportunity to work on a variety of air handling systems.

*Restricted to students admitted to the following program(s): 10-601-1*

**601-157 | Commercial HVAC Systems Design // 2 Credits**

In this course the student designs air conditioning, heating and ventilation systems for commercial buildings. The building may be an office building, school, hotel, etc. The student performs room by room load calculations, duct layout and pipe sizing, and equipment selection. The system is designed in accordance with the International Code as modified by the state of Wisconsin. This course runs concurrently with Drafting HVAC.

*Prerequisite(s): 601-169 Basic HVAC CAD and 601-117 Drafting-HVAC and 601-167 Commercial HVAC Load Calcs*

**601-163 | Residential HVAC Load Calcs // 2 Credits**

This course introduces basic air properties psychometrics, basic manual calculation principles from ACCA Manual J and various computer software heat loss and heat gains on residential.

**601-167 | Commercial HVAC Load Calcs // 1 Credits**

In this course, the student will build on prior learning and knowledge acquired in Residential HVAC load Calculations course. The student uses basic air properties psychometrics, ACCA Manual N and various computer software to calculate heat loss and heat gains on light commercial and full-scale commercial buildings.

*Restricted to students admitted to the following program(s): 10-601-1*

**601-169 | Basic HVAC CAD // 2 Credits**

This course is designed to teach the basic elements or computer-aided drafting using AutoCAD software. The student learns how the system operates, basic entity control, editing functions, dimensioning, plotting, and template setups. The drafting commands are practiced by creating specific HVAC field related drawings. Individual study supported by short lectures and monitoring drawing times supervised by instructors.

*Restricted to students admitted to the following program(s): 10-601-1*

**601-171 | HVACR Installation Principles // 2 Credits**

In this course, the student will build on prior knowledge acquired in HVACR Service & Applications course as well as in Technical Problems- HVAC course. The focus of this course will be on the advanced installation of commercial and residential equipment with emphasis on speed, accuracy and aesthetics. There will be opportunities to assist CVTC's Residential Construction Program, and their HVACR contractor, and other local HVACR contractors installing heating, air conditioning and refrigeration systems. In addition, the student will also focus on the installation of refrigeration systems, ice machines, walk in cooler/freezer boxes.

*Restricted to students admitted to the following program(s): 10-601-1*

### **601-173 | Advanced Service Applications // 3 Credits**

In this course, the student will build on prior learning and knowledge acquired in HVACR Service & Applications as well in Technical Problems-HVAC. The focus of this course will be in-depth look into advanced troubleshooting skills regarding commercial and residential refrigeration, heating and air conditioning systems and equipment. The student will also focus on customer interaction skills, researching and ordering parts, work order completion, and preventative maintenance procedures. The students will also have opportunity to explore both the residential and commercial sector of the industry by participating in a ride-along local HVACR contractors.

*Restricted to students admitted to the following program(s): 10-601-1*

### **601-341 | Basics of Gas Appliances // 2 Credits**

In this course you will learn electrical principles, reading wiring schematics, introductory wiring, heating principles, how combustion works, function of the gas-valve, sequence of operation, and trouble-shooting of natural and propane gas appliances.

*Prerequisite(s): 469-340 Basic Elect for Gas Utility and 469-310 Gas Utility Field Training 4*

## **Electronic Technology**

### **605-118 | Basic Electronics with Digital // 2 Credits**

DC and AC circuit analysis from an Automation Engineering perspective. Topics covered include Ohm's Law, Watt's Law, series and parallel circuits. Fundamentals of digital circuits. Emphasis will be placed on troubleshooting and measurement of circuit parameters.

*Restricted to students admitted to the following program(s): 10-664-1, 31-620-3, TC-620-2*

### **605-120 | Devices // 2 Credits**

Electronic circuits from an electromechanical perspective. Topics covered include electronic switching devices, operational amplifiers, and A-D conversions. Emphasis will be placed on installation considerations, compatibility with other devices and troubleshooting.

*Prerequisite(s): 605-107 Basic Electronics with Digital or 605-111 Basic Elec: Reactive Compnts*

### **605-134 | Network Infrastructure Cncpts // 2 Credits**

This course provides students an overview of the fundamentals of the infrastructure elements that support computer networks and devices. Learners will study the basics of network cable installation and termination, meter usage, direct current (DC) circuits, alternating current (AC) circuits, AC wiring, uninterruptible power supply (UPS) selection, power conditioning, power management, power over Ethernet (POE), and digital logic. The course will be delivered via a combination of reading and homework assignments, lecture/discussion sessions, and hands-on laboratory exercises. Emphasis will be placed on safety and compliance with industry standards.

*Restricted to students admitted to the following program(s): 10-150-2*

### **605-136 | Electronic Control Devices // 2 Credits**

Electronic circuits and digital electronics from an Automation Engineering perspective. Topics covered include electronic switching and isolation devices. Emphasis will be placed on installation considerations, compatibility with other devices and troubleshooting.

*Prerequisite(s): 605-107 Basic Electronics with Digital or 605-118 Basic Electronics with Digital*

*Restricted to students admitted to the following program(s): 10-620-1, 10-664-1, 31-620-3*

### **605-152 | SCADA Concepts // 2 Credits**

SCADA stands for Supervisory Control and Data Acquisition. This course will focus on industrial applications of acquiring data from PLC based equipment using industrial and Ethernet networks. Display of data will use industrial display terminals such as the Allen-Bradley Panel View and Microsoft Excel spreadsheet using DDE technology. Additional applications utilizing ASCII text strings and HyperTerminal will be investigated.

*Prerequisite(s): 620-136 PLC Applications*

## **Mechanical Technology**

### **606-102 | Principles of Design // 2 Credits**

This course is designed to teach the fundamentals of computer-aided drafting principles from standard practices. AutoCAD software is used for technical drawing; topics include computer drawing entity commands, coordinate features, various editing functions, file maintenance, database management, prototype drawing, mechanical design dimensioning practices, the use of blocks, using library symbols, two-dimensional CAD design details, and printing or plotting. Detailed working drawings follow general dimensioning practices found in ASMEY14.5-2009.

*Prerequisite(s): 606-159 CAD, 2D and 606-130 Solid Modeling I*

### **606-103 | Mechanical Design Concepts // 2 Credits**

This course introduces the student to the basic skills and knowledge required to understand how products are designed and documented. Students will measure and sketch parts to visualize 3-dimensional parts. The steps involved in the design process, problem-solving, and teamwork will be introduced through a simple design project. Students will be exposed to terminology, mechanical components, and software that are used in mechanical design.

### **606-104 | Geometric Dimen & Tolerancing // 1 Credits**

Geometric dimensioning and tolerancing (GD&T) graphically defines limits of size, form, orientation, profile, location, and runout applications to ASME Y14.5-2009. GD&T standards include universal symbols and terms, position tolerancing verification, datum reference frame theory, datum (size) modifiers, datum targets, metrology and functional gage design application using a coordinate measuring open setup. Measurement of floating and fixed fasteners is applied to actual mechanical parts. GD&T will also be applied to welding fabrication drawings and assemblies.

### **606-112 | Tool Design Practices // 3 Credits**

This course provides a fundamental background in the design and application of jigs, fixtures, rapid prototyping equipment and gauging devices that are used in the manufacturing process. Classroom work is done through design work on CAD and Solidworks and research of standard tooling components from a variety of resources.

*Prerequisite(s): 606-142 Additive Manufacturing and 606-159 CAD, 2D and 606-136 Solid Modeling 2 or (606-131 Solid Modeling 2 and 606-161 CAD, Basic)*

### **606-116 | Hydronic Systems Design // 3 Credits**

This course consists of the design and selection of modern hydronic heating systems. These procedures are necessary to fulfill the total design requirements of modern residential and light commercial buildings. This course (specifically designed for HVAC students) studies the various means by which different hydronic components are connected to the hydronic systems, which translated into energy efficient operating systems of interconnected hardware. Systems analyzed include various heat sources, piping and fittings, circulating pumps, heat emitters, radiant panel heating, distribution piping, expansion tanks, air removal, and auxiliary loads. The student will perform sizing, layout, and design of complete hydronic heating systems.

*Prerequisite(s): 606-165 CAD - HVAC*

**606-118 | Mechanisms // 3 Credits**

The student will study and analyze the movement of mechanical systems using a combination of calculations and 2D and 3D simulation. Topics include vectors, displacement, velocity, and acceleration calculations, and developing skeleton representations of mechanisms.

*Prerequisite(s): 806-154 General Physics 1*

**606-121 | Mechanical Design Proj Mgmt // 2 Credits**

This course introduces students to the importance of project management in a mechanical design environment. Project management is the discipline of planning, organizing, and executing a plan to bring about the successful completion of specific goals while managing constraints of scope, costs and time. Learners will explore the systematic approach to coordinating, scheduling, and controlling activities, people, and resources during short-term and long-term design projects. Some of the tools presented include Work Breakdown Structures, Activity Diagrams, Risk registers and Gantt Charts.

**606-123 | Mechanism Design // 2 Credits**

The student will design mechanical system using graphical and analytical methods as well as 3D modeling and simulation tools. Topics include displacement of linkages, velocity and validations of acceleration calculation and force analysis.

**606-127 | Machine Design // 4 Credits**

Fundamental principles required for the correct design of shafts, gears, belt drives, sprockets, bearings, and other machine elements. Calculations will be relied upon to determine the size and proper material for machine components.

*Prerequisite(s): 606-140 Strength of Materials or 606-141 Strength of Materials*

**606-130 | Solid Modeling I // 3 Credits**

This course introduces the student to the concepts and commands required to develop 3-D solid models using SolidWorks software. Students will learn to constrain models and develop parametric models. Students will also produce 2-D working drawings from the models. Topics will also include dimensioning, orthographic views, and section views.

**606-133 | Statics // 3 Credits**

The study of forces and loads applied to structures and mechanical devices that are in equilibrium. Topics include resultant forces, moments, truss analysis, and friction. Calculations, hands-on demonstrations, and software will be used extensively for the analysis of these forces.

**606-135 | SolidWorks for Welders // 3 Credits**

This course is intended for Welding Fabrication program students. Topics include basic solid modeling processes, geometry sketching, features, working drawing for production, general dimensioning with weld symbols, and assemblies for construction of solid models. Student will trouble shoot, edit, modify solid models and geometry. Students will have the opportunity to become a Certified SolidWorks Associate.

*Restricted to students admitted to the following program(s): 32-457-1*

**606-136 | Solid Modeling 2 // 2 Credits**

The student will develop complex parametric models, assemblies, and working drawings, apply drawing standards, materials, and tabulated dimensions. Part families, sheet metal parts, welded assemblies, exploded assemblies, software generated bills of material, and simple animation will also be covered.

*Prerequisite(s): 606-130 Solid Modeling I*

**606-137 | Mfg. Materials Processes // 2 Credits**

In this course you will develop knowledge of the practical application of engineering science and technology of manufacturing materials and their related processes. Topics covered will include exploration of processes from material groups including metals, ceramics, electronics, plastics, and composites. Manufacturing processes such as material removal, additive manufacturing, forming, joining, assembly, inspection, automation processes, and regional applications of biotechnology and food processing will be explored.

*Restricted to students admitted to the following program(s): 10-606-1, 10-623-8, 30-606-3*

**606-141 | Strength of Materials // 3 Credits**

Students will study and analyze the internal forces, stresses, and strains that are generated in machine parts by various loading conditions. Topics include tensile, compressive and shear stresses, bending, torsion, and column analysis. Calculations and hands-on demonstrations will be used.

*Prerequisite(s): 606-133 Statics*

**606-142 | Additive Manufacturing // 1 Credits**

Students will explore Additive Manufacturing (AM), broadly known as 3D printing, and learn how products are designed, produced, and serviced. This course will introduce students to how AM enables on-demand production without dedicated equipment or tooling. Students will review AM principles and applications across industries, emphasizing characteristics and performance of common materials (polymers, metals, ceramics, and composites) used for different applications.

*Prerequisite(s): 606-130 Solid Modeling I*

*Restricted to students admitted to the following program(s): 10-606-1, 10-623-8, 30-606-3*

**606-151 | Capstone Design Project // 2 Credits**

This course integrates technical knowledge, CAD, and documented communication skills acquired from the two-year mechanical design program. Actual design projects are documented to include a statement of the problem, product design requirements, analysis sketches with load conditions, a selection of materials, stress analysis and motion requirements, completed CAD details and assembly drawings, 3-D models or prototypes of graphic simulations. Research written and Internet design information, summaries, vendor reports, and computer generated designs for a compiled technical portfolio. Prerequisite: 4th semester status.

*Prerequisite(s): 606-118 Mechanisms and (606-140 Strength of Materials or 606-141 Strength of Materials) and 606-127 Machine Design*

**606-152 | PLC & Fluid Power Application // 2 Credits**

This course will provide the basics of programmable logic controllers and fluid power systems related to mechanical design. Basic system components, symbols and schematics related to these areas will be analyzed. Students will participate in hands on activities related to these concepts in lab setting.

*Restricted to students admitted to the following program(s): 10-606-1, 30-606-3*

**606-159 | CAD, 2D // 2 Credits**

Basic computer-aided drafting and design (CAD) uses two-dimensional AutoCAD software and commands to create entities, edit, store, and print CAD drawings. Topics include entity creation of arcs, circles, lines, coordinates, editing functions, scaling, making templates, text detailing, layers and line types, viewports, modelspace layout and paper-space practices, dimensioning styles, calculation strategies, blocks, groups, libraries, attributes, bills of materials, and plotting to scale. A final project permits the student to apply technical skills to a detailed mechanical design drawing.

*Restricted to students admitted to the following program(s): 10-606-1, 10-623-8, 30-606-3*

### **606-160 | Mfg. Materials Processes // 3 Credits**

Manufacturing materials includes the study of metals, plastics, elastomers, woods, ceramics, glass, composites, cement, and concrete properties. Manufacturing processes include mechanical tool cutting, machining, electrochemical milling, photochemical etching, laser machining, casting, fabricating, joining, heat treating, and secondary finishing operations. Automation applications such as robotics, and computer integrated technologies are also included with local case studies of industry. Applications and fundamental inspection techniques associated with the various materials are explored.

*Restricted to students admitted to the following program(s): 10-606-1, 10-623-8, 30-606-3, TC-606-2*

### **606-165 | CAD - HVAC // 3 Credits**

This course is designed to teach the basic elements of computer-aided drafting using AutoCAD software. The student learns how the system operates, basic entity control, editing functions, dimensioning, plotting, and template setups. The drafting commands are practiced by creating specific HVAC field related drawings. Self-paced using a tutorial style textbook. Individual study supported by short lectures and monitoring by instructors. Grade level determined by quality and quantity of drawing assignments that are completed. Prerequisite: 854-771 Basic Algebra, high school algebra or equivalent.

*Prerequisite(s): 607-114 Plan and Print Reading-HVAC*

### **606-167 | Advanced CAD // 2 Credits**

The Advanced CAD course will focus some of the topics found in our Solid Modeling and AutoCad courses which were forced out of the initial curriculum due to industry demands on more print reading and Geometric Dimensioning and Tolerance topics. The program will also introduce other software platform applications in this new course.

*Prerequisite(s): 606-159 CAD, 2D*

### **606-185 | Blueprint Reading // 1 Credits**

This course is designed with an emphasis on electromechanical technology related to automation, design, and manufacturing technology. Topics include orthographic projection and sketching, pictorial drawings, standard line types, title blocks, dimensioning, tolerancing, surface texture, threads, gearing design, section views, materials of the trade, computer-aided drafting (CAD), and computer automation used in manufacturing.

## **Fluid Power Technology**

### **612-101 | Related Fluid Power // 2 Credits**

Overview of basic components, applications, and circuitry involved in hydraulics and pneumatics. Lecture and lab experiences involving pumps, valves, cylinders, fluids, and conditioners; basic theory and circuitry.

## **Architectural Technology**

### **614-100 | Draft Fund/Wood Frame Construc // 3 Credits**

This course is designed to introduce basic drafting standards. Learners develop acceptable drafting techniques as they examine two-dimensional and three-dimensional drawings. Learners create a complete set of working drawings for a residence according to industry standards.

*Prerequisite(s): 614-117 Revit Architecture*

**614-111 | Architectural Drafting 1 // 3 Credits**

This course provides instruction in commercial architectural drafting. Learners expand drafting technique, examine building materials, and code requirements. Learners develop a set of architectural plans for a small commercial building. This course analyzes floor plans, details, elevations, and sections.

*Prerequisite(s): (614-100 Draft Fund/Wood Frame Construc or 607-100 Draft Fund/Wood Frame Construc) and (614-140 Structural Analysis or 607-140 Structural Analysis) and 614-117 Revit Architecture and (614-164 CAD Architecture or 607-164 CAD Civil or 606-161 CAD, Basic)*

*Corequisite(s): 614-153 Architectural Illustrating*

**614-113 | Architectural Drafting 2 // 3 Credits**

The classroom simulates a natural architectural drafting room. A design is developed by the student and then the student prepares presentation drawings. After the presentation drawing phase, the student will develop these ideas into working drawings. These drawings will include floor plans, schedules, wall sections, and details. The student will also learn the fundamentals of drawing additions and remodeling and specification writing.

*Prerequisite(s): (614-111 Architectural Drafting 1 or 607-111 Architectural Drafting I) and (614-117 Revit Architecture or 607-117 Revit Architecture) and (614-123 Construction Steel or 607-123 Construction Steel) and (614-124 Construction Concrete or 607-124 Construction Concrete) and (614-140 Structural Analysis or 607-140 Structural Analysis)*

*Corequisite(s): 614-155 Surveying & Site Planning*

**614-117 | Revit Architecture // 3 Credits**

This course establishes the fundamentals of Revit architecture software. Learners use Revit to develop a building model and create its floor plans, sections, elevations, structural framing systems, and details. Learners explore rendering enhancements and develop software problem-solving strategies.

**614-125 | Mechanical Systems // 3 Credits**

This course explores mechanical equipment in commercial building design. Systems analyzed include sanitary drainage, storm drainage, fire protection, and HVAC (heating, ventilating, and air conditioning). Learners examine structural-mechanical relationship; physical considerations for mechanical systems; mechanical drawing symbols; plumbing codes, specifications, fixtures, and materials. Learners produce mechanical system plans related to a small commercial office building.

*Prerequisite(s): 614-100 Draft Fund/Wood Frame Construc and 614-140 Structural Analysis and 614-164 CAD Architecture*

**614-140 | Structural Analysis // 4 Credits**

This course introduces learners to basic principles of structural mechanics and design, with emphasis placed upon application in the design and construction of commercial buildings. Learners solve a number of structural engineering problems. Learners develop skills in this course to successfully complete subsequent courses within the program.

**614-148 | Structural Drafting 1 // 4 Credits**

In this course, the student gains a basic understanding of structural steel sections, terms, abbreviations, and symbols used by structural steel fabricators and by structural steel erectors. The student makes steel erection plans, anchor rod plans, and detailed shop fabrication drawings of structural steel beams and columns. Special emphasis is placed on the design of bolted and welded structural steel connections. The student becomes familiar with Detailing for Steel Construction and the Manual of Steel Construction, which are both published by the American Institute of Steel Construction. The student then learns how to solve typical design problems related to steel framing and steel construction using these design manuals.

*Prerequisite(s): (614-111 Architectural Drafting 1 or 607-111 Architectural Drafting I) and (614-123 Construction Steel or 607-123 Construction Steel) and (614-124 Construction Concrete or 607-124 Construction Concrete)*

**614-149 | Structural Drafting 2 // 2 Credits**

This course is a continuation of Structural Drafting I. In the first part of this course, the student learns how to detail structural support frames and bracing using structural steel. In the second part of this course, the student learns more about structural steel, weld types, and weld symbols. The student then learns how to detail miscellaneous structural steel by detailing the remaining items from his or her Structural Drafting I project, which makes that project complete to industry standards. In the last part of this course, the student learns how to detail skewed beams, which are very common in nonrectangular framing.

*Prerequisite(s): (614-148 Structural Drafting 1 or 607-148 Structural Drafting I)*

**614-151 | Tech Problems-Arch Structural // 3 Credits**

In this course the student continues to design a commercial building project which is started in Architectural Drafting II. This course utilizes the knowledge gained in previous courses. He/she prepares a complete set of working drawings necessary to construct a commercial or industrial building, including the architectural plans and details and structural plans and details using the Revit Architecture software. This project also includes all required structural design calculations. The structural design calculations are typical of those that arise daily in actual design office practice.

*Prerequisite(s): (614-113 Architectural Drafting 2 or 607-113 Architectural Drafting II) and (614-148 Structural Drafting 1 or 607-148 Structural Drafting I) and (614-152 Construction Methods or 607-152 Construction Methods) and (614-155 Surveying & Site Planning or 607-155 Surveying & Site Planning)*

**614-153 | Architectural Illustrating // 2 Credits**

This course explores methods by which architectural projects are prepared for client presentation. Learners use rendering software to create photo-realistic building models. Learners create building components and practice interior design techniques. Learners explore their visually detailed projects using virtual reality.

**614-155 | Surveying & Site Planning // 4 Credits**

An elementary course in surveying, including the fundamentals of plane surveying and care of equipment. The course includes theory and field problems in distance measuring, leveling, measuring, vertical and horizontal angles, topographical surveying, construction location surveying, and water detention. The last unit of study is devoted to land descriptions.

*Prerequisite(s): 614-111 Architectural Drafting 1 or 607-111 Architectural Drafting I*

*Corequisite(s): 614-113 Architectural Drafting 2*

**614-156 | Construction Concrete // 3 Credits**

This course introduces concrete construction. Learners examine concrete types and methods used in commercial construction. Learners prepare design calculations for a variety of concrete components. Learners draw concrete details and reinforcing steel fabrication drawings. Learners create a three-dimensional precast building model.

*Prerequisite(s): 614-100 Draft Fund/Wood Frame Construc and 614-164 CAD Architecture*

**614-157 | Construction Steel // 4 Credits**

This course covers the selection and design of structural steel materials that might be used in the construction of a commercial or industrial building. Special emphasis is placed upon using the AISC Manual of Steel Construction and the Steel Joist Institute's Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders in learning to design and select steel beams, columns, joists, base plates, bearing plates, and lintels used in commercial and industrial roof and floor systems. The student will also learn the proper methods used to create the structural design drawings and details.

*Prerequisite(s): (614-100 Draft Fund/Wood Frame Construc and 614-125 Mechanical Systems and 614-140 Structural Analysis and 614-164 CAD Architecture) and 614-117 Revit Architecture*

### **614-160 | Model Based Steel Detailing // 3 Credits**

In this course the student learns how to use SDS/2 steel detailing software, one of the more advanced 3D-drafting systems used by structural steel detailers in the industry today. The fourth-semester student first uses the SDS/2 Drawing Editor to complete a variety of detailed shop drawings of structural steel beams. The student then goes through basic training on SDS/2 3D Modeling, and once this training is complete, he/she uses the SDS/2 software to produce structural steel detail and erection drawings for all the structural steel items in his or her Technical Problems project.

*Prerequisite(s): (614-140 Structural Analysis or 607-140 Structural Analysis) and (614-148 Structural Drafting 1 or 607-148 Structural Drafting I)*

### **614-164 | CAD Architecture // 3 Credits**

This course is designed to teach individuals interested in learning the fundamentals of computer-aided drafting using AutoCAD software. The student learns how the system operates, basic entity creation, modifying operations, text styles, dimensioning, blocks, plotting, etc. At the conclusion of this course, the student should have developed basic skills related to computer-aided drafting and should be able to use CAD on advanced projects in the future classes.

## **Electromechanical Technlgy**

### **620-101 | Automated Processes // 2 Credits**

Electromechanical systems and processes used in modern manufacturing facilities. An overview of the manufacturing environment and the role of the electromechanical technician in that environment.

### **620-107 | Industrial Electronic Basics I // 1 Credits**

Concepts of basic industrial control electronics. Fundamentals of ladder logic and control wiring. Reading and interpreting ladder logic, wiring diagrams used in industry. Using AutoCAD by Auto Desk to create ladder logic for applications. The importance of using wire numbers and wire color codes in accordance with NFPA 79 (National Fire Protection Association) standards. The standard for electrical safety in the workplace proper PPE according to category, Lock Out - Tag Out use. An over view of test instruments and tools, and their correct use. Gain knowledge of component identification and symbol representation for transformers, fused disconnects switches, control relays, contactors, on-delay and off-delay timing relays, pilot lights, push buttons, selector switches, and limit switches. The creation of ladder logic for basic control circuits using AutoCAD, the wiring and use of the components listed above in control circuits.

### **620-108 | Industrial Electr Basics II // 1 Credits**

The use of and correct application of lockout - tag out and PPE. The use of control circuits to control pneumatic operation. The use of 480 volts 3 phase power, installing and wiring of control circuits in enclosures. The continuation of ladder logic and increased complexity of circuit construction and operation. The introduction of latching relays, ice cube relays, solenoids, sequencers, pressure switches, and timers.

*Prerequisite(s): 620-107 Industrial Electronic Basics I*

### **620-135 | PLC Introduction // 2 Credits**

Principles of programmable logic controllers (PLCs) including programming the PLCs, creating basic ladder logic circuits containing basic logic functions, timers, counters, and sequencers. Emphasis is on basic PLC functions to assist one in servicing and troubleshooting PLC controlled equipment. The Allen Bradley PLC 5/03 and Micrologix family of PLCs are used. May get instructor approval instead of taking prerequisite(s).

*Prerequisite(s): 620-155 Industrial Electronics I*

**620-136 | PLC Applications // 3 Credits**

Design and add documentation to ladder logic programs to solve application problems. PLC applications examples as used in industry will be programmed on real industry equipment utilizing a wide variety of various sensors, photoelectric, proximity, motor drives, and control devices creating working automated systems.

*Prerequisite(s): 620-135 PLC Introduction*

**620-144 | Applied EM Machine Principles // 2 Credits**

Basics of power transmission equipment operation, maintenance, and repair as applied to industrial machines, robots, and manufacturing line systems.

**620-145 | Industrial Robotics Systems // 2 Credits**

Terminology, concepts, and components of robots, robot-type machines, and automation. Emphasis will be on interfacing automated machinery.

*Prerequisite(s): 620-156 Industrial Electronics II*

**620-146 | Machine Troubleshooting Tech // 2 Credits**

This course is a hands-on troubleshooting class which will expose the student to problems that they could encounter as an Automation Technician. PLCs, CNC, robotic, and automated control systems will be some of the possible areas and components they will be required to troubleshoot. Besides troubleshooting failures in electrical, pneumatic, and programming logic, the student may be required to modify, move or reprogram equipment. This course will be a culmination of the knowledge that the students have gained from the multitude of courses they have taken in the electromechanical program.

*Prerequisite(s): 612-101 Related Fluid Power and 620-136 PLC Applications and 620-144 Applied EM Machine Principles*

**620-147 | Control Applications // 2 Credits**

This course is a hands-on control application class which will expose the student to problems that they could encounter as an Automation Technician. PLCs, CNC, robotic, and automated and motion control systems will be some of the possible areas and components they will be required to create control circuits and programs for. Besides creating and modifying existing control circuits the student will also be given new projects that will require fabrication and design of machinery. This course will be a culmination of the knowledge that the students have gained from the multitude of courses they have taken in the electromechanical program.

*Prerequisite(s): 612-101 Related Fluid Power and 620-136 PLC Applications and 620-144 Applied EM Machine Principles*

**620-148 | Automated Systems Interfacing // 4 Credits**

Hands-on interfacing of PLC's, operator interfaces, sensors, and various automated equipment to create a work cell level of automation. Gain experience in programming, wiring, and configuration. Learn the troubleshooting and programming of a more complex process.

*Prerequisite(s): 620-136 PLC Applications*

**620-150 | Instrumentation // 2 Credits**

The student will learn how to measure the properties of temperature, pressure, flow, and level. Tuning PID loops and troubleshooting instrumentation systems. Transducers and control systems will be taught from a systems approach. Full-size industrial standard components and systems are used.

*Prerequisite(s): 620-158 Sensors*

**620-155 | Industrial Electronics I // 2 Credits**

Concepts of basic industrial control electronics. Fundamentals of ladder logic and control wiring. Reading and interpreting ladder logic, wiring diagrams, and one-line diagrams used in industry. Using Actrix Technical by Auto Desk to create ladder logic for applications. The importance of using wire numbers and wire color codes in accordance with NFPA 79 (National Fire Protection Association) standards. The students will work with and gain knowledge of the following components: transformers, power supplies, fuses, disconnect switches, circuit breakers, relays, solenoids, pressure switches, limit switches, timers, latching relays, push buttons, and selector switches.

**620-156 | Industrial Electronics II // 2 Credits**

In-depth concepts of industrial control and power circuits. Counters, temperature controllers, forward and reversing motor starters, contactors and frequency drives. 3-phase AC motors, single-phase, split - phase AC motors, and DC motors. Mounting and wiring of PLCs, designing control systems for easy maintenance, industrial data communication, and quality control. Design, wire, and document control and power circuits to solve application problems.

*Prerequisite(s): 620-155 Industrial Electronics I*

**620-158 | Sensors // 2 Credits**

This course investigates theory, application, and troubleshooting of various sensor technologies including wiring and testing of sensor configurations. This course covers non-contact sensing fundamentals and interfacing.

*Prerequisite(s): 605-136 Electronic Control Devices or 605-108 Electronic Control Devices*

**620-193 | Electronic Software Applic // 2 Credits**

Consists of an introduction to computer software applications used in the Automation Engineering field. Topics include an introduction to the following software: AutoCAD Electrical, Microsoft Word and Microsoft Excel.

**620-194 | Motion Control Applications // 2 Credits**

This course is designed to give the student an understanding of the operation, programming, and wiring of AC induction motors and Drives, DC motors and Drives, Stepper motors and drives, and Servo motors and drives.

*Prerequisite(s): (620-156 Industrial Electronics II and 620-135 PLC Introduction)*

*Restricted to students admitted to the following program(s): 10-664-1*

## Industrial Mfg Tech

**623-101 | Engineering Principles // 1 Credits**

Engineers must consider material properties and process capabilities to design and make products. This introductory course will explore the principles of engineering with an emphasis on the field of manufacturing. Students will encounter the challenges of engineering by designing and building projects that involve problem solving, teamwork, professionalism, and ethics. OSHA safety certification will be included as part of this course.

**623-111 | Measurement for Engineering // 2 Credits**

This course will provide the theory, technique, and care of the coordinate measuring machine (CMM) and various measuring instruments. The student will apply blueprint reading skills and geometric tolerancing to projects while applying measuring techniques used with the CMM and basic measuring instruments. The student will be exposed to precision inspection methods as it relates to industrial blueprints, manufactured parts, and the student's projects.

**623-114 | Industry Practicum // 3 Credits**

The student will conduct 216 hours in an onsite work environment in the food processing, electronics fabrication or other micro/nano technology related work environment. For students unable to coordinate an internship, a practicum opportunity may be available for coordination.

*Restricted to students admitted to the following program(s): 10-623-1, 10-623-8*

**623-117 | Intro to Precision Measurement // 1 Credits**

This course teaches students the use of precision measurement tools including rules, tapes, calipers, micrometers, and gages. Students will apply measurement methods for reverse engineering to reverse engineer parts and to take field measurements on the shop floor. The course will enable students to communicate with machinists and other manufacturing specialists concerning precision measurements.

**623-119 | Advanced Inspection Techniques // 1 Credits**

This course takes students through the use, care, limits, setup, programming, operation, and applications of Zeiss Coordinate Measuring Machine (CMM). Students will utilize the Calypso inspection software on the CMM to facilitate their learning. The CMM is a computer driven high tech measurement machine that inspects dimensions on manufactured parts. With this system, students will be able to setup and measure parts and learn to facilitate manufacturing quality control.

**623-130 | Lean Fundamentals // 2 Credits**

This class provides an introductory study of the Lean Manufacturing philosophy to reduce or eliminate waste in a manufacturing setting. The students will become familiar with the fundamental 5-step process sequence of Lean: 1) Specify value from the customer perspective, 2) Identify the value stream steps for product families and eliminate waste, 3) Improve product flow to increase value creating steps, 4) Improve value connections with upstream customers, and 5) Stabilize processes and continue improvement for waste reduction. Lean terminology and tools used such as 5S will be examined along with the benefits and pitfalls encountered in implementation.

**623-132 | Manufacturing Workplace Safety // 2 Credits**

Students will identify, analyze, and recommend improvements to work areas to minimize the opportunity for workplace injuries to provide for a safe and secure manufacturing work environment. Learners will demonstrate knowledge of workplace safety standards (federal, state, and workplace compliance) and ergonomics, as well as the processes of incident reporting, investigation and documentation.

**623-133 | Automation for Manufacturing // 3 Credits**

Application of automated systems is improving the productivity of the manufacturing industry. This course focuses on the design and development of automated systems in manufacturing. The course introduces various automated systems used in manufacturing including sensors, transducers, actuators, drives, robotics, and programmable logic controllers (PLCs).

*Restricted to students admitted to the following program(s): 10-623-8*

**623-135 | Data Analytics // 2 Credits**

Data analysis is a critical component of modern manufacturing. You will gain an understanding of the fundamentals of data analysis. You will explore the process of gathering data and learn how to identify data sources. You will learn how to clean, analyze, and share data by applying advanced statistical tools to create visualizations and dashboards.

**623-137 | Plant Layout // 2 Credits**

This course will teach you the different classes of plant layout, the different types of plant layout, the procedure of designing a product and process layout. You will learn about the importance of building designs and arrangement of equipment and facilities. You will also learn about the effect of lighting ventilation, and climate conditions the general well being of the workers in a plant. You will learn about material handling and modern techniques for efficient utilization of space.

*Restricted to students admitted to the following program(s): 10-623-8, 10-623-8*

### **623-154 | Engineering Economy // 3 Credits**

This course will enable students to apply the principles and techniques of engineering economic analysis. Interest factors are used to perform equivalency calculations on estimated cash flows that account for the time value of money. Students will apply engineering economic analysis to evaluate a single project or to select from multiple alternatives. Students will learn how to create a cash flow diagram, calculate present, future, and annual worth, determine return on investment, calculate a break-even point, determine the payback period, analyze cost and benefit of public sector projects, and estimate costs.

*Prerequisite(s): 804-115 College Technical Math 1*

## **Quality Interdisciplinary**

### **625-110 | Mfg & Quality Assurance // 3 Credits**

Develops an overview knowledge of quality assurance to provide instruction in methods for measuring quality within manufacturing processes. Students learn the components of a quality assurance program such as quality goals, benchmarks, leadership, and motivation. This course addresses the philosophies of leaders in the field, industry trends, quality standards (ISO and Six Sigma) and how quality assurance relates to specialties in manufacturing, food, biotechnology, micro/nano electronics, service, and pharmaceuticals.

*Prerequisite(s): 804-189 Introductory Statistics*

### **625-180 | Manufacturing Skills Standards // 2 Credits**

In the MSSC Safety course students will be exposed to manufacturing concepts and actions that can produce higher quality products, increase productivity, achieve greater customer satisfaction, and assure a safe and healthy work environment. This course is broken down with definitions, examples, and exercises. Practical cases/examples are investigated and discussed. Capitalizing on a blended learning approach, students experience lectures, self-paced studies, on-line labs, and individual and group activities.

## **Automated Manufacturing**

### **628-100 | Automated Systems // 2 Credits**

The course will allow students the opportunity to identify the use and application of automation in a supply chain. The application of automation technology in a supply chain system continues to advance based on the changing trends with today's consumers. The need to identify, locate and ship a product in the supply chain needs to be executed instantaneously with a great deal of certainty. Students will learn about the application of automation, mechanisms, fluid power and proper safety protocol in the supply chain setting.

## **Computer Hardware Technlgy**

### **631-109 | Industrial Internet of Things // 2 Credits**

This course examines the personal computer and associated networks as it applies to the industrial environment. Computer architecture, hardware requirements and limitations, and troubleshooting are emphasized, as are the networking requirements to maintain information flow between the production floor and the business administrative functions.

## Technical Communications

### **699-105 | Document Design // 3 Credits**

This course is an introduction to graphic design principles and process. It focuses on skills needed to design and layout communications. Visual language using print, iconic, and kinetic forms will be introduced.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-107 | Professional/Technical Writing // 3 Credits**

This course provides an introduction to processes of technical and professional communication, emphasizing application of principles and problem-solving strategies to an array of assignments central to the work of career writers in the workplace.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-115 | Editing and Proofreading // 3 Credits**

This course gives students skills and practice needed to edit communication for usage, capitalization, grammar, punctuation, and spelling. Students will apply theories and strategies to ensure communication products conform to industry style guides, to develop editor-writer relationships, and to provide audiences with clear ethical content.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-117 | Research Basics // 3 Credits**

This course introduces students to basic research skills needed to conduct professional research. Students will collect, interpret, and report data while maintaining ethical standards.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-125 | Proposal/Grant Writing // 3 Credits**

This course is an exploration of various grant proposal forms (government, corporate, foundation), with emphasis on conceptualizing, developing, and writing proposals for real clients.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-127 | Digital Media Communications // 3 Credits**

This course will introduce how to write blogs, posts, tweets, and other updates so they resonate and are relevant to social media audiences, and encourage action, engagement, and interaction. This course focuses primarily on content writing and editing.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

### **699-131 | Information Design // 3 Credits**

This course prepares students to design and manage information, emphasizing data visualization, accessibility, graphic organization, and instructional design strategies.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

**699-133 | Digital Content Writing // 3 Credits**

This course focuses on technical writing strategies and methods of designing and writing for websites that support the workplace, including Search Engine Optimization tactics.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

**699-135 | Writing and Publishing // 3 Credits**

The course covers techniques used in informative and persuasive writing for internal and external communication. Students will use these techniques to create the kinds of messages most widely required in the workplace.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

**699-137 | Technical Documentation // 3 Credits**

This course explores developer documentation as well as end user documentation. Concepts will include documenting standardization, increasing agility of documents, anticipating customer needs, choosing communication modes, analyzing documentation style, and utilizing audience analysis.

*Prerequisite(s): 801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1*

**699-138 | Professional Comm Capstone // 2 Credits**

To prepare for the professional communications internship, students produce all documentation related to the job-seeking process and participate in activities with communications professionals to polish students' job-seeking skills. Students discuss techniques for getting and keeping a job and other career-enhancing strategies. Take during the final semester.

*Prerequisite(s): 699-105 Document Design and 699-107 Professional/Technical Writing and 699-115 Editing and Proofreading and 699-117 Research Basics and 699-125 Proposal/Grant Writing and 699-127 Digital Media Communications and 699-133 Digital Content Writing and 699-135 Writing and Publishing and 699-131 Information Design and 699-137 Technical Documentation*

*Restricted to students admitted to the following program(s): 10-699-1*

**699-139 | Professional Comm Internship // 1 Credits**

This course allows students an opportunity to work in a professional environment. Students will maintain a log of work activities and complete communication-related projects under the direct supervision of the employer. Students will be evaluated by the workplace supervisor and the practicum instructor after completing a self-assessment of the internship.

*Prerequisite(s): 699-138 Professional Comm Capstone*

*Restricted to students admitted to the following program(s): 10-699-1*

## Communication Skills

**801-136 | English Composition 1 // 3 Credits**

This course is designed for learners to develop knowledge and skills in all aspects of the writing process. Planning, organizing, writing, editing, and revising are applied through a variety of activities. Students will analyze audience and purpose, use elements of research and format documents using standard guidelines. Individuals will develop critical reading skills through analysis of various written documents.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**801-141 | Intro to Mass Comm // 3 Credits**

Explores communication in media and media literacy by providing insight into the important issues that confront students as consumers and purveyors of mass media within the workforce and in society. The mass media revolution, including media technologies, the evolution of media content and platforms, including new media, the impact of media communications on business and society as a whole, media bias, and media law and ethics form the basis of the course.

**801-196 | Oral/Interpersonal Comm // 3 Credits**

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.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**801-197 | Technical Reporting // 3 Credits**

Prepares and presents oral and written technical reports. Types of reports may include lab and field reports, proposals, technical letters and memos, technical research reports, and case studies. Designed as an advanced communication course for students who have completed at least the prerequisite introductory writing course with a grade of "D-".  
*Prerequisite(s): 801-136 English Composition 1 or 801-219 English Composition 1 or 801-195 Written Communication or 801-151*

**801-198 | Speech // 3 Credits**

Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**801-204 | Introduction to Literature // 3 Credits**

Introduction to Literature increases the understanding and appreciation of literary genres through analyzing and writing about non-fiction, fiction, drama, and poetry. Students conduct research using library resources and learn to document in MLA-style format.

**801-219 | English Composition 1 // 3 Credits**

English Composition 1 develops critical thinking, reading, writing, listening, and speaking for both exposition and argumentation. The course emphasizes college-level writing skills supported by reasoning, organization, and language conventions for research, presentations, and other discourse.

**801-223 | English Composition 2 // 3 Credits**

English Composition 2 advances composition skills, emphasizing well-reasoned argumentative writing. This course cultivates critical thinking and college-level discourse. Students conduct research using library and web-based sources, observations, and interviews, using a formal documentation style. Students will read and analyze professional non-fiction texts to understand how writers develop and present ideas through writing.

*Prerequisite(s): (801-136 English Composition 1 or 801-195 Written Communication or 801-219 English Composition 1)*

**801-239 | American Literature Since 1865 // 3 Credits**

This course surveys American Literature from 1865 through the present, focusing on the growing diversity in authorship and techniques during this period. Literature by influential writers, representative of major movements and cultural changes, will be examined.

**801-240 | Intro to Creative Writing // 3 Credits**

This class is designed to introduce students to the craft of writing through the appreciation, analysis, creation, and revision of contemporary literary fiction and poetry. Through reading, writing, editing, and in-class activities, students will learn the history, trends, and processes of creating innovative, well-written literary pieces of fiction, non-fiction, and poetry.

**801-243 | American Literature to 1865 // 3 Credits**

Early American Literature takes a critical look at pieces of literature that were written/published up to year 1865. Through various theoretical lenses this course examines pieces of fiction, nonfiction, folklore, poetry, and visual representation by influential and diverse authors of the Early American era.

**801-356 | Applied Job/Interpersonal Comm // 1 Credits**

This course emphasizes the importance of having effective interpersonal communication in the workplace environment and the practical components of job-seeking skills. Students will gain practical workplace skills in listening, speaking, nonverbal, conflict resolution and customer service, and training presentations. Additionally, they will polish a resume, practice their interview skills, explore a company's background, assess and refine their personal career goals, and establish a purpose for writing in their career field.

**801-357 | Applied Written/Job Seek Comm // 1 Credits**

This course emphasizes the importance of effective workplace writing and the practical components of job-seeking skills. Students will acquire practical, business-related skills through reading, writing, revising, and grammar exercises. Additionally, they will polish a resume, practice their interview skills, explore a company's background, assess and refine their personal career goals, and establish a purpose for writing in their career field.

## Foreign Language

**802-103 | Spanish for the Workplace // 2 Credits**

Introductory conversational Spanish for the person whose business works with Spanish-speaking employees and/or customers. Emphasis is on everyday language usage and interaction rather than a formal grammar approach.

**802-211 | Spanish 1 // 4 Credits**

This course provides an introduction to the Spanish language through the basic development of the four core language components: listening, speaking, reading and writing. It provides students with the basic conversational and communicative strategies necessary to carry out simple yet meaningful tasks common in everyday social interactions. Further, it exposes students to many cultural aspects of the Spanish speaking world.

**802-212 | Spanish 2 // 4 Credits**

This second semester introductory course is a continuation of Spanish 1. It focuses on development of listening, speaking, reading, and writing skills, and the further development of basic conversational and grammatical tools introduced in the first semester. It also focuses on the expansion of students' cultural awareness with regard to the Spanish-speaking world.

*Prerequisite(s): 802-211 Spanish 1 or min score of 41 on TWSP*

**802-213 | Spanish 3 // 4 Credits**

Spanish 3 is a review of Spanish grammar and relevant vocabulary, with an increased focus on both active (speaking and writing) and passive (listening and reading) language skills. Students also gain further exposure to the Spanish-speaking world through authentic literary and cultural pieces, and cinematic works.

*Prerequisite(s): 802-212 Spanish 2 or min score of 50 on TWSP*

### **802-218 | Latin American Studies // 3 Credits**

This course is an introduction to Latinos in the United States. It provides a cursory look into the people, culture, language, and history of Latin Americans with specific attention given to how these relate to the modern Latino experience in the United States. It explores the complex and intertwined relationship between the United States and Latin America, and how this relationship affects contemporary Latinos in the United States.

## **History**

### **803-211 | U.S. History to 1877 // 3 Credits**

A survey of the history of the United States to 1877. Emphasis is placed on colonial settlement & development, the movement for independence, the establishment of government under the Constitution, westward expansion, emergence of sectionalism and the Civil War, and the period of Reconstruction.

### **803-212 | U.S. History 1877-Present // 3 Credits**

A survey of the political, economic, social and cultural history of the United States from 1877 to the present. Emphasis is placed on the post reconstruction Jim Crow South, Native American relations, the Gilded Age, Industrialization, Populism and the Progressive Movement, World War I, the New Deal, World War II, the Cold War, Civil Rights, the Vietnam War, Conflict in the Middle East (Iran and Iraq), and Post 9/11 America.

### **803-214 | Native American History // 3 Credits**

This course is a survey of religion, social structure, art, and intertribal relations of various indigenous peoples within the boundaries of the present-day United States. Emphasis is placed on pre-European settlement; the cultural impact and consequences of European colonization; the 17th and 18th century wars for empire; forced removal of native peoples; and the establishment of Native American reservations. The course will conclude with an examination of political, economic, and social issues Native Americans face today.

### **803-236 | The Vietnam Era // 3 Credits**

This course examines the Vietnam War era with emphasis on the years following World War II through the 1970s. The course is taught from the American perspective and focuses on American involvement in Vietnam and the political, social and economic impact the war had (and continues to have) on America and the world.

## **Mathematics**

### **804-113 | College Technical Math 1A // 3 Credits**

Designed for the students who are preparing for a technical career, this course covers a variety of algebraic topics. These include solving linear, quadratic, and rational equations; measurement systems; 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 Math 1A and College Technical Math 1B is the equivalent of College Technical Math 1.

**804-114 | College Technical Math 1B // 2 Credits**

This course is a continuation of College Technical Math 1A. Topics include a basic introduction to graphing; 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. Successful completion of or concurrent enrollment in College Technical Math 1A is required for course enrollment. Successful completion of College Technical Math 1A and College Technical Math 1B is the equivalent of College Technical Math 1.

*Prerequisite(s): 804-113 College Technical Math 1A or 804-141 Applied Algebra or 804-196 College Technical Math 1A*

**804-115 | College Technical Math 1 // 5 Credits**

This course is designed for students who are preparing for a technical career. Topics studied in the course 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. The course will emphasize the use of mathematics as a problem solving tool with a wide variety of technical problems.

**804-118 | Interm Algebra w Apps // 4 Credits**

This course offers algebra content with applications. Topics include properties of real numbers, order of operations, algebraic solution for linear equations and inequalities, operations with polynomial and rational expressions, operations with rational exponents and radicals, algebra of inverse, logarithmic and exponential functions.

**804-133 | Math & Logic // 3 Credits**

Students will apply problem solving techniques from discrete mathematics. Topics include symbolic logic, sets, algebra, and base number systems.

**804-134 | Mathematical Reasoning // 3 Credits**

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.

**804-135 | Quantitative Reasoning // 3 Credits**

This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include: construction & interpretation of graphs; descriptive statistics; geometry & 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.

**804-189 | Introductory Statistics // 3 Credits**

Students taking this course will learn to display data with graphs, describe distributions with numbers, perform correlation and regression analyses, and design experiments. They will use probability and distributions to make predictions, estimate parameters, and test hypotheses. They will learn to draw inferences about relationships including ANOVA.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**804-205 | Precalculus // 4 Credits**

This course includes the study of polynomial and rational functions; solving higher level polynomial equations; conic sections; inequalities; exponential, logarithmic, and trigonometric functions; and complex numbers.

*Prerequisite(s): 804-224 College Algebra or (min score of 58 on TWMA and min score of 47 on TWMM and min score of 15 on TWMT) or (min score of Y on BA or min score of Y on BS)*

**804-211 | Quantitative Reasoning // 4 Credits**

Intended to develop analytic reasoning and the ability to solve quantitative problems. Topics may include: construction and interpretation of graphs; functional relationships and mathematical modeling; descriptive statistics; basic probability; geometry & spatial visualizations. This is a suitable final mathematics course for students who do not intend to take Calculus.

*Prerequisite(s): 804-118 Interm Algebra w Apps or min score of 47 on TWMM or (min score of Y on BA or min score of Y on BS)*

**804-224 | College Algebra // 4 Credits**

College Algebra includes the study of the real and complex number systems; quadratic, polynomial, rational, exponential and logarithmic functions; equations; the use of matrices in solving systems of equations; and sequences. College Algebra is the second step in the STEMway path for liberal arts.

*Prerequisite(s): 804-118 Interm Algebra w Apps or min score of 47 on TWMM or (min score of Y on BA or min score of Y on BS)*

**804-230 | Statistics // 4 Credits**

This course empowers learners to apply statistical techniques in real-world scenarios, covering the fundamentals of statistics, data collection, data organization, and the art of describing distributions. The learner will delve into discrete and continuous probabilities, master one-sample and two-sample inference methods, explore regression and correlation analysis, and gain proficiency in chi-square and ANOVA for comprehensive data analysis.

*Prerequisite(s): 804-118 Interm Algebra w Apps or min score of 47 on TWMM or min score of Y on ALG2*

**804-236 | Calculus & Analytic Geometry 1 // 5 Credits**

This course provides a thorough treatment of differential calculus, including functions, limits, continuity, the derivative, rules of differentiation, and implicit differentiation, as well as applications to graphing, optimization, and related rates. The course concludes with an introduction to integral calculus, including anti-derivatives, the definite integral, the Fundamental Theorem of Calculus, and its application to finding areas and volumes.

*Prerequisite(s): (min score of 58 on TWMA and min score of 56 on TWMT) or (804-224 College Algebra and 804-228 Trigonometry) or (min score of Y on BA or min score of Y on BS)*

**804-240 | Calculus & Analytic Geometry 2 // 5 Credits**

This course uses integration to solve applications in math, science, and engineering. Integrals of transcendental functions like logarithms, and hyperbolic functions have applications in construction and electrical power distribution. We will integrate trigonometric and rational functions using partial integrals, and integration by parts. We will solve applications using first order differential equations including probability. We will study infinite series and sequences and their solutions.

*Prerequisite(s): 804-236 Calculus & Analytic Geometry 1*

**804-360 | Math for Technical Trades // 2 Credits**

Math for Technical Trades is an applied technical math course. The course includes arithmetic, measurement calculation, formula manipulation, basic geometry, right triangle trigonometry, and interpretation of visual displays of data, with an emphasis on contextualized technical applications.

**804-361 | Math 10 // 2 Credits**

This course will study how technicians use arithmetic and algebra as problem solving tools. Topics include arithmetic skills with integers, decimals, and fractions. Algebraic skills with equations, word problems, percents, and technical formulas will focus on solving professional problems.

### **804-362 | Math 20 // 2 Credits**

This course is designed for machinists to provide them with a solid background in geometry, trigonometry, numerical control geometry, measurement conversion techniques, and more algebra. Focus will be on applying the concepts to machining situations and problems.

*Prerequisite(s): 804-361 Math 10 or 804-360 Math for Technical Trades*

## **Natural Science**

### **806-112 | Principles of Sustainability // 3 Credits**

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.

### **806-134 | General Chemistry // 4 Credits**

Covers the fundamentals of chemistry. Topics include the metric system, problem-solving, periodic relationships, chemical reactions, chemical equilibrium, properties of water; acids, bases, and salts; and gas laws.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

### **806-154 | General Physics 1 // 4 Credits**

An overview of various physics topics, routinely covered in an introductory physics course, is presented with appropriate accompanying experiments. Included topics are: mechanics, properties of materials, heat, and sound. In addition to the technical science information given, an ability to solve problems, responsibility and initiative is emphasized.

*Prerequisite(s): 804-115 College Technical Math 1 or 804-118 Interm Algebra w Apps or 804-113 College Technical Math 1A or 804-224 College Algebra or 804-228 Trigonometry*

### **806-177 | Gen Anatomy & Physiology // 4 Credits**

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 health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients.

*Prerequisite(s): 836-133 Prep for Basic Chemistry or 806-134 General Chemistry or min score of Y on CHEM*

### **806-179 | Adv Anatomy & Physiology // 4 Credits**

This course 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 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, neuro-muscular, 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 are also included in this course.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology or 806-140 Anatomy & Physiology I*

**806-186 | Intro to Biochemistry // 4 Credits**

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.

**806-190 | Intro to Microbiology // 2 Credits**

This course is designed to give students a basic understanding of the world of microorganisms. Includes a history of microbiology, classification and taxonomy; cell structure and function; epidemiology, microbial growth and control. Explores how microorganisms impact our lives with discussion about pathogenic, nonpathogenic and opportunistic organisms. Lab activities will include use and care of the microscope, organism sampling, isolation, and staining.

**806-197 | Microbiology // 4 Credits**

This course examines microbial structure, metabolism, genetics, growth, and the relationship between humans and microorganisms. Disease production, epidemiology, host defense mechanisms, and the medical impact of microbes in the environment, industry, and biotechnology are also addressed.

*Prerequisite(s): 806-177 Gen Anatomy & Physiology or 806-140 Anatomy & Physiology I or 806-207 Anatomy & Physiology 1*

**806-201 | Principles of Biology // 4 Credits**

The Principle of Biology Class explores fundamental principles of biochemistry, cells, ecology, genetics, evolution, and biodiversity. This is a lab-based course where students can applying basic laboratory procedures. The course is designed for both majors and non-majors in biological or medical sciences.

**806-207 | Anatomy & Physiology 1 // 4 Credits**

The fundamentals of bodily function are studied at the cellular, tissue, organ, and organ system levels. Integration of physiological function and anatomical structure will be highlighted in the skeletal, integumentary, muscular, nervous, and endocrine systems. This course is the first semester of a two semester sequence designed for students who wish to transfer to a four year institution.

*Prerequisite(s): (min score of Y on BA or min score of Y on BS) or 806-245 Principles of Gen Chemistry 1*

**806-208 | Anatomy & Physiology 2 // 4 Credits**

The second semester of a two semester sequence detailing the anatomical and physiological features of the human body. Topics covered in both a lab and lecture setting include the cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems, as well as metabolism, fluid electrolyte, and acid-based balance. This course is the second semester of a two-semester sequence designed for students who wish to transfer to a four year institution.

*Prerequisite(s): 806-207 Anatomy & Physiology 1*

**806-220 | Conceptual Physics // 4 Credits**

This introductory physics course encompasses the fundamentals of motion, forces, rotation, gravity, energy, sound, light, fluids, heat, electricity, magnetism and selected topics in modern physics. This laboratory course will focus on the ideas of physics, while employing basic mathematical skills for lab work and problem solving.

**806-225 | Introduction to Astronomy // 3 Credits**

This introductory course in astronomy consists of a lab and lecture component. Students will cover the topics of astronomical motion, the life cycle of stars, the structure and scale of the universe, various forms of light and the electromagnetic spectrum, gravity, nuclear fusion, classification and characteristics of various astronomical objects, the Big Bang theory, galaxies, historical events in the field of astronomy, constellations, the evolution of our solar system, and applying the scientific method to the cosmos.

**806-232 | Human Reproductive Biology // 3 Credits**

An exploration of biological, anatomical, and physiological aspects of human reproductive biology, including topics in heredity, reproduction, pregnancy, birth control, sexual development and sexually transmitted disease.

**806-245 | Principles of Gen Chemistry 1 // 5 Credits**

Introduces the laboratory and the scientific method as tools in the study of chemical transformations and the properties of matter. It includes the topics of measurement, chemical nomenclature, chemical reactions and stoichiometry, atomic structure, gas laws, thermochemistry, chemical bonding, kinetics, equilibria, electrochemistry and topics in organic and biochemistry. Qualitative analysis is included in the laboratory course.

*Prerequisite(s): 804-118 Interm Algebra w Apps or 804-362 Math 20 or 804-224 College Algebra or min score of 47 on TWMM*

**806-249 | Principles of Gen Chemistry 2 // 5 Credits**

The second semester university transfer chemistry course employs the scientific method and the laboratory as tools in the topics of equilibria, properties of solutions, kinetics, acids and bases, solubility, entropy and free energy, electron transfer reactions, the chemistry of main group and transition elements and nuclear chemistry. The laboratory focuses on safety and technique and includes experimental studies of colligative properties of solutions, chemical kinetics, equilibria, acid-base chemistry, electrochemistry and coordination chemistry.

*Prerequisite(s): 806-245 Principles of Gen Chemistry 1*

**806-276 | Principles General Physics 1 // 5 Credits**

This algebra based physics course covers kinematics, dynamics, Newton's laws, forces, energy, momentum, rotation, torque, angular kinematics and dynamics, fluids, heat, waves, and sound. Students will engage in hands on laboratory experiments involving graphing, analysis of data, employ critical thinking skills, and applying the scientific method.

*Prerequisite(s): 804-115 College Technical Math 1 or 804-224 College Algebra or (min score of 57 on TWMA and min score of 15 on TWMT)*

**806-280 | Principles General Physics 2 // 4 Credits**

Studies electricity, magnetism, geometric and physical optics, basics of modern physics topics.

*Prerequisite(s): 806-276 Principles General Physics 1*

**806-286 | Environmental Science // 4 Credits**

This course examines current environmental challenges and the impacts on the biological and physical world. Students will investigate biodiversity, renewable and nonrenewable resources, human population and health, global climate change, pollution, agriculture, sustainable practices, and ecosystems. It also explores social, historical, economic, and political aspects related to environmental issues. The laboratory component coincides with the lecture portion of the course and incorporates experiments that model the subjects discussed. The experimentation and analysis performed during lab provides the scientific framework needed for comprehending the importance of the environmental topics.

**806-323 | Salon Science 1 // 1 Credits**

This is a one credit course covering the basic science concepts essential in the beauty industry such as: regulations for health and safety, principles of infection, preventing the spread of disease, basic anatomy and physiology of cells, tissues, and systems, nail structures, growth, diseases and disorders, plus properties of light and electromagnetic waves.

*Corequisite(s): 502-320 Nail Technology*

*Restricted to students admitted to the following program(s): 30-502-4, 31-502-1*

### **806-324 | Salon Science 2 // 1 Credits**

This is a one credit course designed to be a continuation of Salon Science 1 (806-323) for those students pursuing a career in cosmetology. Subjects covered include: Skin structure, growth and nutrition, skin disorders and diseases, hair structure, chemical composition, hair disorders, hair diseases, basics of chemistry, matter, properties, pH, solutions, understanding basic electricity and electric safety.

*Prerequisite(s): 806-323 Salon Science 1*

*Corequisite(s): 502-304 Haircutting 2, 502-321 Salon Services 1*

*Restricted to students admitted to the following program(s): 31-502-1*

### **806-342 | Science for Technical Trades // 2 Credits**

Provides an introduction to basic physical principles involved in precision measurement, mechanics, hydraulics, thermodynamics, and electronics to students. Practical utilization of these principles in various technologies is analyzed with reinforcement from problem solving and laboratory exercises.

*Prerequisite(s): 804-360 Math for Technical Trades or 804-360D Math for Tech Trades-Diesel or 804-360E*

*Math for Tech Trades-Trans or 804-361 Math 10 or 804-363 Math for Electricity & Electric or 804-134*

*Mathematical Reasoning*

## **Physical Education**

### **807-268 | Wellness Today // 1 Credits**

This course takes a holistic approach to wellness that includes all eight components of wellness. Areas of study include physical wellness (lifestyle diseases, infectious diseases, general principles of health, nutrition, weight management and exercise), social wellness (relationships and technology use), mental wellness (mental health, stress management, emotional wellbeing), intellectual wellness, financial wellness, spiritual wellness, occupational wellness (time management and priorities), and environmental wellness. The course provides science-based lecture content and experiences upon which to base decisions concerning an individual's overall wellbeing.

## **Social Science**

### **809-103 | Think Critically & Creatively // 3 Credits**

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 the 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.

### **809-122 | Intro to Amer Government // 3 Credits**

Introduces American political processes and institutions. Focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. Explores the role of the media, interest groups, political parties, and public opinion in the political process. Also explores the role of state and national government in our federal system.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-128 | Marriage & Family // 3 Credits**

This course introduces the student to the sociological aspects of marriage and family life in contemporary American society. Emphasis is on the study of cognitive, emotional, and behavioral patterns associated with courtship, love, mate selection, sexuality, and marriage. Moreover, it discusses the life span development in the family life cycle, balancing work and family, and parenting. This course is based on the premise that human attitudes, feelings, and behaviors are largely shaped and influenced by philosophy, gender, communication, and personal beliefs. Therefore, success in the institutions of marriage and family require knowledge and skills in the roles of spouse and parent and ways to apply concepts to daily life.

**809-159 | Abnormal Psychology // 3 Credits**

This 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.

**809-166 | Intro to Ethics: Theory & App // 3 Credits**

This course provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and professional standards of behavior, and apply a systematic decision-making process to these situations.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-172 | Intro to Diversity Studies // 3 Credits**

This is a course that draws from several disciplines to reaffirm the basic American values of justice and equality by teaching a basic vocabulary, a history of immigration and conquest, principles of transcultural communication, legal liability and the value of aesthetic production to increase the probability of respectful encounters among people. In addition to an analysis of majority/minority relations in a multicultural context, the topics of ageism, sexism, gender differences, sexual orientation, the disabled and the American Disability Act (ADA) are explored. Ethnic relations are studied in global and comparative perspectives.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-188 | Developmental Psychology // 3 Credits**

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 increased knowledge and understanding of themselves and others. It is recommended that either Intro to Psychology (809-198) or Psychology of Human Relations (809-199) be completed before taking this course.

**809-195 | Economics // 3 Credits**

Designed to give an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-196 | Intro to Sociology // 3 Credits**

This course introduces students to the basic concepts of sociology, including culture, race, socialization, gender, group behavior, deviance, social stratification, and social change. Students will use the sociological perspective to analyze major social institutions, multiculturalism, and social issues affecting our selves and society. Students will participate in a variety of experiences to strengthen and demonstrate these perspectives and skills. Critical thinking skills are emphasized, and learning activities include applying sociological theory to current issues in society. The focus is on how social factors and forces influence beliefs and behaviors, both in our personal lives and at work.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-198 | Intro to Psychology // 3 Credits**

This introductory course in psychology is a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. Additional topics include research methods, biological and environmental impacts, development, sensation and perception, consciousness, intelligence and stress. This course directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings.

*Restricted to students admitted to the following program(s): 20-800-1, 20-800-2*

**809-199 | Psychology of Human Relations // 3 Credits**

Students will become acquainted with the basic theories and concepts of psychology and human behavior, enabling them to be more effective in their work and personal lives. A better understanding of human relations will help the individual adjust and grow in a complex society.

**809-202 | Social Problems // 3 Credits**

This course takes a sociological analysis of current social problems by examining the local, national and global impact. Students will become familiar with how the three main sociological theories are applied to the identification, analysis, explanation, and solutions of the various social problems. Some of the topics covered in this course include: inequality, poverty, crime, racial and gender discrimination, drug and alcohol use, education, population and ecology. Students will also consider relevant policy issues and possible solutions to the various social problems.

**809-214 | Introduction to Gender Studies // 3 Credits**

This course introduces students to the interdisciplinary study of gender, examines the components that make up gender, and investigates how gender frames human experience. Students explore sex, gender, femininity, masculinity, queer, sexuality, feminism, culture and related topics from a variety of perspectives. Using a range of concepts, research methods, and tools, students analyze how these components are socially constructed, how they intersect, and how they influence our understanding of the world.

**809-223 | International Relations // 3 Credits**

International Relations will explore the interactions between states in the international system through the prism of major political science paradigms. In particular the course will examine the ability of these theories to account for military conflict, the creation and expansion of international institutions, and interstate trade. It will also introduce concepts such as power, hegemony, cooperation, nuclear proliferation, and terrorism.

**809-225 | Ethics // 3 Credits**

This course engages students in a dialogue with past and present ethical thinkers who provide frameworks for addressing an array of contemporary moral issues pertaining to the individual and society. Students will evaluate responses to contemporary moral dilemmas while developing their own logical ethical stances.

**809-227 | American Government // 3 Credits**

American Government acquaints students with American political processes and institutions via a system approach which emphasizes the relationship between structure and behavior. The interrelationship of our state and national governments will first be analyzed in detail stressing political theory and methodology. Students will then examine, research, and analyze the complexity of the concept of separation of powers (“checks and balances”) between Congress, the judiciary, the presidency, and the bureaucracy as well as explore the role of the media, interest groups, political parties and public opinion in the political process before focusing on the Constitutional rights and responsibilities of citizens and how those citizens access the process of participatory democracy, including elections, most effectively.

**809-229 | Political Theory // 3 Credits**

This course introduces students to major political theorists whose ideas offer tools for understanding political issues and institutions. Students will analyze and evaluate key concepts with a view to developing their own well-reasoned political perspectives. Furthermore, students will apply concepts such as human rights, freedom, justice, or equality to interpret the contemporary political landscape.

**809-230 | Applied Research // 3 Credits**

The purpose of this course is to teach basic research skills and concepts needed to plan, conduct, and analyze data from a research project. Skills including performing literature searches, questionnaire development, scale construction, data cleaning and management, data manipulation and analysis, and interpretation and report writing will be taught. Students will use survey and statistical software throughout the course, and the lab will specifically focus on hands-on activities. The final project will involve proposing a research question, finding and analyzing data to evaluate this question, and writing and publishing the findings.

**809-251 | General Psychology // 3 Credits**

The course will encompass all aspects of the field of psychology from basic research to psychological disorders and treatments. This course will explore the areas of psychology through psychological, environmental, and biological perspectives. The course directs the student to be able to understand and analyze human behavior in everyday life. This is a two hundred 200-level psychology course designed to transfer to the university system, and it includes greater emphasis on psychological theory and research as compared with the 100-level Introduction to Psychology course.

**809-271 | Introductory Sociology // 3 Credits**

Defines and examines concepts and realities of social structure, the social processes that shape behavior, culture, socialization, social groups, and social change. Analyzes concepts and phenomena such as complex organizations, roles, stratification, class, inequality, deviance, and race. Examines institutions such as the family, religion, education, politics, economics and the media.

**809-272 | Race & Ethnicity in the U.S. // 3 Credits**

Course introduces learners to the study of racial and ethnic diversity in the United States. The course begins with basic concepts and language, and examines how race and ethnicity are socially constructed and maintained. It discusses the causes, impacts and reduction of racism using related theories. It explores the socio-history of US minority groups: Native American, African American, Hispanic/Latino American, Asian American, and Arab American as well as the European/white ethnic groups. Dominant-subordinate relations, intersectionality and other aspects of group dynamics are identified. In addition to an analysis of majority/minority relations in a multicultural context, the related topics of gender, class, sexual orientation, disability, and religion are explored.

**809-291 | Principles of Microeconomics // 3 Credits**

Introduces, describes, and analyzes how markets work and emphasizing what they do well and why they sometimes fail. Students will analyze how individuals, businesses, and governments choose to use scarce resources. Current issues will be discussed using economic concepts such as income distribution, market structure, and efficiency. Business decisions will be examined with regard to cost analysis and output determinations. Topics such as the environment, regulation vs. deregulation, international markets and trade, technology, and economic development will be discussed.

**809-292 | Principles of Macroeconomics // 3 Credits**

Macroeconomics is an introductory course. Basic social choices regarding economic systems, basic economic aggregates, fiscal policy, the banking system, monetary policy, and international trade are the principle topics discussed in the course. Balance is drawn between theory, analysis, and a critique of the institutions that characterize modern mixed-capitalist economies. Conflicting social goals, economic constraints, and environmental concerns provide the framework through which the macro economy is analyzed.

**809-351 | Occupational Relations // 2 Credits**

This course is designed to provide the student with a basic understanding of the human relations skills necessary to succeed in a total quality work environment. This will include workplace trends, team-building skills, customer and co-worker relations, attitude and motivation, safety and stress management, diversity, employment law, and financial and benefits planning.

## Speech

**810-201 | Fundamentals of Speech // 3 Credits**

This course includes theoretical examination of the process of communication, the role of speech in self-development, the nature of meaning, and the art of persuasion. It provides practice in selecting speech topics, analyzing audiences, organizing speech content, improving speech delivery, and critiquing speeches via presentation of informative and persuasive speeches. Several graded and non-graded small group discussions sharpen additional communicative skills.

**810-205 | Interpersonal/Small Group Comm // 3 Credits**

Introduces students to the theories and concepts of interpersonal and small group communication to help students develop appropriate and effective communication strategies in one-to-one and small group communication settings. Theory and practice are combined to aid students in developing an awareness of group dynamics and the employment of small groups in information-seeking and problem-solving processes. Students will participate in a community service activity that will integrate instruction with applied learning.

## Art

### **815-201 | Art Appreciation // 3 Credits**

Art Appreciation is to study visual arts as the transmitters of cultural, humanistic, and aesthetic values from the remote past to present across different cultures. It will help learners develop visual literacy, analytical skills, problem solving abilities, and lifelong appreciation for the visual arts. Students will learn to question the nature of art and its relevance to daily life and will be encouraged to integrate art history, design principles, and aesthetic criticism in understanding artworks within cultural and historical contexts. Students also obtain knowledge of art-making, the material processes, and being aware of controversial issues in the art world.

### **815-205 | Introduction to Drawing // 3 Credits**

Drawing is a critical method for creative endeavors in art, language, communications, engineering and design. In this introductory course, students will practice various forms of drawing in order to develop skills in traditional and digital media. A range of drawing systems will be investigated as both a foundational skill set and as a practical strategy in later professional activities.

## General Studies

### **890-115 | Online Success Strategies // 1 Credits**

In this course you will learn how to be successful in an online learning environment. You will explore the common characteristics of successful online learners as well as barriers to learning and how to overcome them. The concept of an online learning community will be examined and demonstrated through participation.

### **890-204 | Transfer Planning for U // 1 Credits**

In this course students acquire an understanding of the liberal arts curriculum and construct a specific plan through this curriculum toward future transfer or career. Students become familiar with academic and student support services and learn strategies that will help them to succeed in academics and advance in a career.

### **890-205 | Academic Success Strategies // 1 Credits**

This one credit course covers success strategies for academic, professional, and life contexts. Students will learn about the academic community, and they will learn strategies and tactics related to effective studying, time management and prioritization, and problem solving. Emphasis will be placed on service learning and community involvement.

### **890-206 | Career Success Strategies // 1 Credits**

This course focuses on the CVTC core abilities: models integrity, thinks critically, communicates effectively, and values diversity. Students will demonstrate core abilities and the understanding of what it takes to be career ready and competitive in today's workforce.

### **890-207 | Directed Study Svc Learning // 1 Credits**

This one credit directed-study course will provide students with the opportunity to grow academically and personally through participation in a service-learning project. Students will meet real needs within their communities by applying knowledge from courses and demonstrating proficiency of the College's core abilities: communicates effectively, thinks critically, models integrity, and values diversity. Students will complete 16 volunteer hours, written reflections, and a final portfolio, in addition to regularly scheduled meetings with a faculty mentor.

**890-261 | Foundation of Research Methods // 4 Credits**

This course will outline the fundamentals of doing research, aimed primarily at conducting original research projects with a community service focus. This course will have a focus of systematic inquiry and collection of information and then applying that information to the community around them. The course will appeal to those who require an understanding of research approaches and skills, and importantly an ability to deploy them in your studies or in your future professional lives. No prior knowledge or experience in research is required to take this course. This course is developed to support research training across multiple academic areas.

**890-298 | CPL Success Strategies // 1 Credits**

This course focuses on how various learners can demonstrate their connections between experiential learning and classroom theory for the purpose of earning college credit for prior learning.