

# CAREER ACADEMY

## PROGRAMS, SCHEDULE, AND DESCRIPTIONS

### 2018-2019

Metropolitan Community College's (MCC) Career Academy program is designed to provide high school juniors and seniors with opportunities to explore various career fields and get a jumpstart on their postsecondary education. MCC Career Academies increase student awareness in various career fields prior to high school graduation so more informed career choices can be made. Students gain practical skills for specific career areas, knowledge of safety procedures, job-seeking skills, interpersonal skills for the workplace, and exposure to a college environment while earning both high school and college credit.

### CAMPUS LOCATIONS/PROGRAMS

<b>Fort Omaha Campus (FOC)</b> <b>30th and Fort, Omaha</b>			
➤ <b>Architecture</b> <i>(Seniors Only)</i> <i>Maximum 12 students</i>	➤ <b>Civil Engineering</b> <i>(Seniors Only)</i> <i>Maximum 12 students</i>	➤ <b>Construction Technology</b> <i>Maximum 12 students</i>	
➤ <b>Electrical Technology</b> <i>Maximum 12 students</i>	➤ <b>Heating, Air Conditioning and Refrigeration (HVAC)</b> <i>Maximum 12 students</i>	➤ <b>IT – Data Center Operations</b> <i>Maximum 12 students</i>	
➤ <b>IT – Prototype Design</b> <i>Maximum 12 students</i>	➤ <b>Pre-Apprenticeship Plumbing</b> <i>Maximum 12 students</i>	➤ <b>Welding Technology <u>1<sup>ST</sup> Year</u></b> <i>Maximum 12 students</i>	
➤ <b>IT Cyber Security Program</b> <i>Maximum 12 students</i>			
<b>South Omaha (SOC)</b> <b>27th &amp; Q, Omaha</b>			
➤ <b>Automotive Technology</b> <i>(Driver's License required)</i> <i>Maximum 16 students</i>	➤ <b>Certified Nursing Assistant (CNA)</b> <i>Maximum 20 students</i>	➤ <b>Emergency Medical Technician (EMT) (Seniors Only)</b> <i>Maximum 12 students</i>	
	➤ <b>Diversified Manufacturing/ Process Operations</b> <i>Maximum 10 students</i>		
<b>Applied Technology Center (ATC)</b> <b>10407 State St, Omaha</b>			
➤ <b>Auto Collision Technology</b> <i>Maximum 10 students</i>	➤ <b>Diesel Technology</b> <i>Maximum 10 students</i>	➤ <b>Fire Science Technology (FIST)</b> <i>Maximum 12 students</i>	➤ <b>Utility Line Technician</b>
<b>Elkhorn Valley (EVC),</b> <b>204th &amp; Dodge, Omaha</b>	<b>Learning Community of North Omaha</b> <b>24th and Franklin</b>	<b>Omaha Community Playhouse (OCP)</b> <b>6915 Cass</b>	<b>Sarpy Center (SRP)</b> <b>91st &amp; Giles</b>
➤ <b>Digital Cinema/Filmmaking</b> <i>Maximum 12 students</i>	➤ <b>Early Childhood Education</b> <i>(Seniors Only)</i> <i>Maximum 24 students</i>	➤ <b>Theatre Technology</b> <i>Separate application needed*</i> <i>Maximum 10 students</i>	➤ <b>Criminal Justice</b> <i>(Seniors Only)</i> <i>Maximum 20 students</i>

MCC reserves the right to cancel or modify courses. Tuition is based on the rate for the 2017 Academic Year for Nebraska High School residents. MCC's tuition and fees schedule is subject to change without prior notice and at the discretion of the MCC Board of Governors.

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**Students must abide by the MCC Calendar. This has special meaning for seniors since they may have to continue attending classes beyond their graduation date or beyond their last day of class at their high school.**

<b>Fall Quarter</b> 2018 18/FA	Labor Day Recess/College closed Classes begin Classes end	September 3 Sept. 4 Nov. 19	Monday Tuesday Monday
<b>Winter Quarter</b> 2018 - 2019 18/WI	Thanksgiving Day Recess/College closed Classes begin Last class day before Holiday Recess Holiday Recess/College closed Classes resume Martin Luther King Recess/College closed Classes end	Nov. 22 – 23 Dec. 3 Dec. 21 Dec. 25 - Jan. 1 Jan.5 Jan. 21 Feb. 25	Monday Friday Saturday Monday Monday
<b>Spring Quarter</b> 2019 18/SP	Classes begin Spring Recess/College closed Classes resume Classes end	Mar. 7 April 20-21 April 22 May 22	Thursday Saturday-Sunday Monday Wednesday

# ARCHITECTURE TECHNOLOGY SENIORS ONLY

Fort Omaha Campus – 30th and Fort – Construction Education Center

## Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	SCET 1120	AutoCAD Essentials	9.0	1:00 – 3:00	M-TH
<b>December, 2018 – February, 2019</b>					
	ARCH 1120	Beginning REVIT (First five weeks)	4.5	1:00 – 3:00	M-TH
	ARCH 1130	Intermediate REVIT (Second five weeks)*	4.5	1:00 – 3:00	M-TH
<b>March – May, 2019</b>					
	ARCH 1200	Wood Frame Architecture	9.0	1:00 – 3:00	M-TH
<b>TOTAL CREDIT HOURS</b>			<b>27.0</b>		

### COURSE DESCRIPTIONS

#### **ARCH 1120 - Beginning REVIT (Building)**

Hands-on experience with the Autodesk software provided in this course introduces students to the basic functions of building information modeling (BIM). Concentration is on building parts (walls, floors, roofs, doors, windows), and construction documents are produced from 3-D models.

#### **ARCH 1130 - Intermediate REVIT (Building)\* Prerequisite (1) ARCH 1120 - must be completed prior to taking this course.**

Hands-on experience with Autodesk REVIT Building software allows students to continue the work started in Beginning REVIT. Students concentrate on schedules, family components, production of construction documents, and rendering.

#### **ARCH 1200 - Wood Frame Architecture**

Students investigate the process by which architects and drafters determine the form of a small wood-frame building and produce the set of drawings, models, and specifications used to build the building.

#### **SCET 1120 - AutoCAD Essentials**

This course introduces basic computer-aided design 2-D drawing techniques using AutoCAD software. It includes drawing terminology, AutoCAD menus, text creation and editing, dimensioning, plotting and geometric construction, and file manipulation techniques. Students also learn model space and layout, viewports, polylines, multilines and splines, annotation with text, use of attributes for data storage, and extraction and xrefs.

#### **Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.efollett.com](http://www.efollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

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# AUTO COLLISION TECHNOLOGY

Applied Technology Center – 10407 State

## Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	AUTB 1200	Non Structural Repair I	6	12:30 – 4:30	M, W
<b>December, 2018 – January, 2019</b>					
	AUTB 1040	Auto Collision Repair Welding	3	12:30 – 4:30	M, W
<b>January – February, 2019</b>					
	AUTB 2450	Collision Estimating I	3	12:30 – 4:30	M, W
<b>March – April, 2019</b>					
	AUTB 2300	Automotive Refinishing I	3	12:30 – 4:30	M, W
<b>April – May, 2019</b>					
	AUTB 1100	Structural Repair I	3	12:30 – 4:30	M, W
<b>TOTAL CREDIT HOURS</b>			<b>18</b>		

## Year 2 Student 2018 - 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	AUTB 1210	Non Structural Repair II	6	12:30 – 4:30	T, TH
<b>December, 2018 – February, 2019</b>					
	AUTB 2310	Automotive Refinishing II	6	12:30 – 4:30	T, TH
<b>March – May, 2019</b>					
	AUTB 1220	Non Structural Repair III	6	12:30 – 4:30	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>18</b>		

**Supplies:** Shirt(s) will be required; purchase from instructor during first week of class.

### COURSE DESCRIPTIONS

**AUTB 1040 – Auto Collision Repair Welding** Students learn techniques of oxy-acetylene cutting and welding for automotive applications. Students study and practice the theory and use of metal inert gas (MIG) welding, the plasma-cutting torch, and resistance welding in the repair of high-strength steel structural and nonstructural body components. In addition, this course provides practice in advanced automotive welding skills, including various types of position welds.

**AUTB 1100 – Structural Repair I** Students learn to analyze various types of vehicle damage, interpret dimension specification sheets, and select and set up various types of measuring systems used for damage analysis.

**AUTB 1200 – Non Structural Repair I** This course provides the fundamentals of shop safety, tool application, damage repair preparation, metal straightening techniques, and the use of body fillers in the repair of collision-damaged vehicles.

## AUTO COLLISION cont'd

**AUTB 1210 – Non Structural Repair II** *Prerequisite: AUTB 1200.* This course continues to build skills acquired in the basic course. Students learn the techniques of door skin replacement and how to work with trim and hardware. Other related subjects are covered.

**AUTB 1220 – Non Structural Repair III** *Prerequisite: AUTB 1210.* This course focuses on evaluating major body damage and determining the necessary repairs. The complete job is stressed, from body repair to final refinishing.

**AUTB 2300 – Automotive Refinishing I** Students are introduced to EPA, personal health, and safety equipment regulations. It covers introductions to finish systems, metal prep, sealers and primers, and masking techniques.

**AUTB 2310 – Automotive Refinishing II** *Prerequisite: AUTB 2300* This course is a continuation of Automotive Refinishing I with emphasis placed on solving paint application problems. Students practice paint mixing, matching and application, finish defects, and causes and cures.

**AUTB 2450 - Collision Estimating I** Students learn the systematic approach to analyzing collision damage and creating a damage report manually. It covers different types of damage, plan for repairs, repair or replace decisions, and use of crash guides.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## AUTOMOTIVE TECHNOLOGY

South Omaha Campus – 27<sup>th</sup> & Q – Mahoney Building

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>July 5 – 20, 2018</b>		<b>Students must pass to move on.</b>	1.5	9:00 – 12:00	MTWTh
	AUTT 0900	Automotive Fundamentals			
<b>September – November 20, 2018</b>					
	MATH 1240	Applied Mathematics Modular*	4.5	2:00 - 3:50	T, TH
<b>September 5 – October 10, 2018</b>	AUTT 1010	Introduction to Auto Service & Minor Repair*	3	12:30 – 4:10	M, W
<b>October 15 – November 19, 2018</b>	AUTT 1310	Power Train Repair I*	3	12:30 – 4:10	M, W
<b>December, 2018 – February, 2019</b>					
	MATH 1240	Applied Mathematics*(if not completed in Fall)	4.5	2:00 – 3:50	T, TH
<b>December 3, 2018 – January 16, 2019</b>	AUTT 1210	Automotive Electricity & Electronics I*	3	12:30 – 4:10	M, W
<b>January 23 – February 25, 2019</b>	AUTT 1220	Automotive Electricity & Electronics II*	3	12:30 – 4:10	M, W
<b>March 11 – April 15, 2019</b>	AUTT 1320	Power Train Repair II*	3	12:30 – 4:10	M, W
<b>April 17– May 22, 2019</b>	AUTT 1510	Brake Repair I*	3	12:30 – 4:10	M, W
		<b>TOTAL CREDIT HOURS</b>	<b>24</b>		

### Transition Year 2 Student 2018– 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September 5 – October 10, 2018</b>	AUTT 1520	Brake Repair II*	3	12:30 – 4:10	M, W
<b>October 15– November 19, 2018</b>	AUTT 1230	Automotive Electricity & Electronics III	3	12:30 – 4:10	M, W
<b>December 3, 2017 – January 16, 2019</b>	AUTT 1620	Heating and Air Conditioning I	3	12:30 – 4:10	M, W
<b>January 23 – February 25, 2019</b>	AUTT 1330	Power Train Repair III*	3	12:30 – 4:10	M, W
<b>March 11 – April 15, 2019</b>	AUTT 1710	Engine Mechanical Service*	3	12:30 – 4:10	M, W
<b>April 17 – May 22, 2019</b>	AUTT 2310	Suspension Systems*	3	12:30 – 4:10	M, W
		<b>TOTAL CREDIT HOURS</b>	<b>18</b>		

\*Students must pass the prerequisite class to remain in the program.

All classes use Hybrid format; these courses combine classroom learning with a significant online component. Typically, students in hybrid courses work online during portions of the week and then come to campus to apply and refine their skills, participate in labs, etc.

## AUTOMOTIVE TECHNOLOGY – cont'd.

### **Additional Supplies and Fees:**

ASE student certification testing fee will be assessed when the student enrolls in the AUTT 1010 fall quarter class (Fee for 2017/2018 year was \$30.00.) Supplies required: Safety glasses, program t-shirt, steel toed shoes or boots must be worn in lab. No shorts. MCC will provide, on loan, most of the appropriate supplies and tools for each course. Students will be held responsible for lost and/or broken equipment and tools.

Automotive Youth Educational Systems (AYES): AYES is a partnership among participating automotive manufacturers, dealerships and select automotive programs. It is designed to encourage young people to consider careers in retail automotive service. Visit <https://www.ayes.org/Home.aspx> for more information.

### **Review**

- ✓ Driver's License Required
- ✓ Juniors Preferred
- ✓ All classes use a Hybrid format - in class and on-line
- ✓ Good attendance required.
- ✓ Students must maintain a 3.0 GPA in the automotive classes and a 2.0 GPA in their high school to be in the AYES program. Students that do not meet this requirement may remain in the program provided they are passing all classes, but they will lose the AYES status.
- ✓ Students with traffic violations; DUI, drug arrest, speeding ticket, and loss of driver's license, may find employment difficult.
- ✓ Students may be asked to interview in March/April for the summer program internship.\*\*
- ✓ Internship can be done during the summer of either the first and/or second year. This is not a requirement for the AYES program. Students must meet the MCC internship requirements.

**\*\*Summer internship will require purchase of internship tool set. See instructor for more information.**

### **COURSE DESCRIPTIONS**

**AUTT 0900** - Students that are unfamiliar with modern tools and terminology in the automotive business or want to get a head start are requested to take this course. Materials presented in this course are designed to help the entry level student learn how to use basic tools, service information systems and terms. This will require use of items in the lab as most lectures will take place in a lab setting. This is a Hybrid class format.

**AUTT 1010 – Introduction to Auto Service and Minor Repair** Students registering for this course must have a valid driver's license. This beginning class deals with many of the basic elements of the auto repair trade. Items covered are safety, chemicals, and bulb replacement. This class also encourages the soft skills needed in today's modern workplaces, such as attitude, ethics, professionalism, and on-the-job communication. Individualized hands-on laboratory training utilizing live work is included in this course.

**AUTT 1210 – Automotive Electricity & Electronics I** Students registering for this course must have a valid driver's license. This course covers basic electrical theory, including Ohm's Law and basic dc circuits. Through the use of specially designed electrical trainers and hands-on experience, students investigate electrical systems common to the automobile. The course includes individualized hands-on laboratory training utilizing live work.

**AUTT 1220 – Automotive Electricity & Electronics II** *Prerequisite: AUTT 1210 with C or better and valid driver's license.* This course explains and demonstrates theory, construction, operation, and testing of batteries, starters, and charging systems. The course includes individualized hands-on laboratory training utilizing live work. NOTE: Students must have an acceptable completion score on the Sp/2 Safety Course for Mechanical Safety and Mechanical Pollution Prevention.



## AUTOMOTIVE TECHNOLOGY – cont'd

**AUTT 1230 – Automotive Electricity & Electronics III** *Prerequisite: AUTT 1220 with C or better and valid driver's license.* This course covers the fundamentals of automotive computers and their relationship with sensor inputs and actuator outputs along with advanced diagnostic procedures of electronic body electrical systems. The course includes individualized hands-on laboratory training utilizing live work.

**AUTT 1310 – Power Train Repair I** *Prerequisite: Valid driver's license.* This course covers tire and wheel balancing, inspection of steering, power assisted steering and suspension parts, tire wear, and pre-alignment inspection. The course includes individualized hands-on laboratory training utilizing live work.

**AUTT 1320 – Power Train Repair II** *Prerequisite: AUTT 1220, 1310 with C or better and valid driver's license.* This course will cover basic theory and operation of engines, transmissions, and drivetrains including: 4 stroke theory, basic ignition systems, timing chain and belt operation, transmission gear flow for both manual and automatics and hydraulic principles.

**AUTT 1330 – Power Train Repair III** *Prerequisite: AUTT 1320 with C or better and valid driver's license.* Students perform maintenance and light repair on the following: manual transmissions, automatic transmissions, differentials, axles, and engines.

**AUTT 1510 – Brake Systems I** *Prerequisite: AUTT 1010 with C or better and valid driver's license.* Students spend classroom and lab hours on the proper repair and diagnosis of modern brake systems. Students cover basic operation and diagnosis and perform brake rotor and drum resurfacing.. NOTE: Students must have an acceptable completion score on the Sp/2 Safety Course for Mechanical Safety and Mechanical Pollution Prevention.

**AUTT 1520 – Brake Repair II** *Prerequisite: AUTT 1510 and AUTT 1220 with C or better and valid driver's license.* Students spend classroom and lab hours on the proper repair and diagnosis of modern brake systems. They study components, such as power boosters and master cylinders. The course covers the design, operation, and testing of anti-lock brake and traction control systems using a variety of testing equipment. The course includes individualized hands-on laboratory training utilizing live work.

**AUTT 1620 Heating and Air Conditioning** *Prerequisite: AUTT 1230 and AUTT 1310 with a grade of C or better and valid driver's license.* Automotive heating and air conditioning theory of operation, diagnostic equipment, and minor service are covered. The course includes hands-on laboratory training utilizing live work. NOTE: Students must have an acceptable completion score on the Sp/2 Safety Course for Mechanical Safety and Mechanical Pollution Prevention.

**AUTT 1710 – Engine Mechanical Service I** *Prerequisite: AUTT 1330 with a grade of C or better valid driver's license.* This course covers minor engine repair, such as gasket replacement, compression testing, and timing belt replacement. The course includes individualized hands-on laboratory training utilizing live work. NOTE: Students must have an acceptable completion score on the Sp/2 Safety Course for Mechanical Safety and Mechanical Pollution Prevention.

**AUTT 2310 – Suspension Systems** *Prerequisite: AUTT 1310 and AUTT 1230 both with grades of C or better and valid driver's license.* This course covers the operation, diagnosis, and repair of front and rear suspension systems. Students also study manual and power steering systems, tire wear, and four-wheel alignment. The course includes individualized hands-on laboratory training utilizing live work. NOTE: Students must have an acceptable completion score on the Sp/2 Safety Course for Mechanical Safety and Mechanical Pollution Prevention.

### **MATH 1240 – Applied Mathematics Modular**

Students develop and apply the mathematical skills needed to solve problems related in industrial occupations. Students enroll in the mastery-based modular course with the intent of completing one of two strands. Placement is determined by the instructor and is based on the students' majors. Each strand satisfies the objectives for the course, but is contextualized to meet students' individual needs. Topics include applications of arithmetic skills, measurement, elementary algebra, geometry, and trigonometry.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## CERTIFIED NURSING ASSISTANT (CNA)

South Omaha Campus – 27<sup>th</sup> & Q – Mahoney Building

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
MCC staff will place you in either Group 1 or Group 2.					
<b>Group 1 September – September, 2018</b>					
	EMSP 1000	Cardiopulmonary Resuscitation	1	1:00–4:00	F First 4 Weeks
	EMSP 1010	Heartsaver First Aid with CPR and AED	1	1:00–4:00	F First 4 Weeks
<b>Group 1 September – November, 2018</b>					
	HIMS 1120	Medical Terminology I*	4.5	1:00–2:45	M, W
<b>Group 2 September – November, 2018</b>					
	HIMS 1120	Medical Terminology I*	4.5	1:00–2:45	T, TH
<b>Group 2 October – October, 2018</b>					
	EMSP 1000	Cardiopulmonary Resuscitation	1	1:00–4:00	F Second 4 Weeks
	EMSP 1010	Heartsaver First Aid with CPR and AED	1	1:00–4:00	F Second 4 Weeks
<b>Group 1 December, 2018 – February, 2019</b>					
	HIMS 1130	Medical Terminology II*	4.5	1:00–2:55	M, W
<b>Group 1 December, 2018 – February, 2019</b>					
	WORK 1400	Employability Skills	4.5	1:00–2:55	T, TH
<b>Group 2 December, 2018 – February, 2019</b>					
	HIMS 1130	Medical Terminology II*	4.5	1:00–2:55	T, TH
<b>Group 2 December, 2018 – February, 2019</b>					
	WORK 1400	Employability Skills	4.5	1:00–2:55	M, W
<b>March 10 – May, 2019</b>					
	HLTH 1200	Long Term Care / Certified Nursing Assistant	6.5	2:00-4:00	M, T, W, TH
<b>May 2019</b>					
	HLTH 1200	Clinicals (must attend all days)		<b>6:00-2:30</b>	M, W, TH,
<b>May 2019</b>					
	State Testing			TBA	TBA
<b>TOTAL CREDIT HOURS - per group</b>			<b>22.0</b>		

**\*Students must receive passing grades in order to remain in the academy.**

#### Application Process and Fees:

- Proof of required English in the form of actual College Level English Composition I or student completes ACCUPLACER with minimum 82 Read/Writing or ACT scores of 18 in Reading and 18 in Writing.
- Career Academy CNA Application/Technical Standards form signed and submitted
- Background Check form signed and submitted by both student and parent if under 18.
- Provide proof Mantoux PPD Skin Test (TB -Tuberculosis Test) that will remain current through the end of the spring quarter classes.
- SSN or I-94 required for State Registry
- Student Liability Insurance Program\*\* fee will be assessed when the student enrolls in the spring quarter class HLTH 1200 CNA Long Term Care / Certified Nursing Assistant. (Fee for 2017/2018 year was \$14.50.)
- Background Check fee will be assessed when the student enrolls in the spring quarter class is necessary prior to starting HLTH 1200. (Fee for 2017/2018 year was \$45.00.)

## CNA cont'd.

*\*\*Students enrolling in certain health occupations and human services programs requiring clinical practice, laboratory or experiences that place the student in the position of providing patient care must be covered by a student liability insurance program. The specific policy shall be determined by the College with the cost paid by the student as part of the fee assessment upon initial enrollment in the clinical, laboratory or patient care class.*

### **COURSE DESCRIPTIONS**

**EMSP 1000 – Cardiopulmonary Resuscitation for Healthcare Providers** This course will teach the participant how to recognize and respond to life-threatening emergencies, such as cardiac arrest, respiratory arrest, and foreign-body airway obstruction (choking). The student will learn to recognize heart attack and stroke symptoms in adults and breathing difficulty in children. This course teaches the skills needed to respond to emergencies identified. The participant will learn the skills of CPR for victims of all ages (including ventilation with barrier devices and bag-mask devices), use of an automated external defibrillator (AED), and relief of foreign-body airway obstruction (FBAO).

**EMSP 1010 – Heartsaver First Aid with CPR and AED** This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

**HIMS 1120 – Medical Terminology I** This course assists students in establishing a solid foundation of medical terminology and abbreviations and introduces prefixes, suffixes, and word roots used in the language of medicine. The course emphasizes medical vocabulary as it applies to the anatomy, physiology, and pathology of the human body. Students study the functioning of the body systems, clinical/surgical procedures, and therapies and examine normal, pathological, clinical, and laboratory considerations in order to best prepare for entrance into the healthcare professions. The course also emphasizes correct spelling and pronunciation.

**HIMS 1130 – Medical Terminology II** *Prerequisite: HIMS 1120 with C or better.*

This course is a continuation of HIMS 1120. It presents additional body systems, specialty medical areas, clinical procedures, laboratory tests, medical terms, and abbreviations. Students study practical applications with case reports, operative and diagnostic tests, and laboratory and x-ray reports. The course also emphasizes correct spelling and pronunciation.

**HLTH 1200 – Long Term Care/Certified Nursing Assistant** The course meets the Nebraska Health and Human Services System training requirements for nursing assistant certification and employment in long-term care facilities. The course combines classroom lecture, laboratory application, and clinical experience for development of basic skills needed to care for the elderly. Course content focuses on teaching nursing assistants to provide safe, effective, and caring services to the elderly or chronically ill patients of any age in a long-term care facility. *Upon enrollment: Background Check and Student Liability Insurance Program fee is assessed to the student's account.*

**WORK 1400 – Employability Skills** This course allows students to enhance their interpersonal skills, improve their ability to work in teams, learn to communicate effectively, think creatively, use problem-solving techniques, and explore competitive job-seeking strategies.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## CIVIL ENGINEERING TECHNOLOGY- SENIORS ONLY

Fort Omaha Campus – 30th and Fort – Construction Education Center

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	SCET 1120	AutoCAD Essentials	9.0	1:00 – 3:00	M-TH
<b>December, 2018 – February, 2019</b>					
	SCET 1150*	AutoCAD Civil 3-D Fundamentals	9.0	1:00 – 3:00	M-TH
<b>March – May, 2019</b>					
	SCET 1000	Civil Engineering Fundamentals (First five weeks)	4.5	1:00 – 3:00	M-TH
	SCET 1090*	ArcGIS Fundamentals (Second five weeks)	4.5	1:00 – 3:00	M-TH
	<b>TOTAL CREDIT HOURS</b>		<b>27.0</b>		

Students must pass each course with a C or better to continue.

### **COURSE DESCRIPTIONS**

#### **SCET 1120 - AutoCAD Essentials**

This course introduces basic computer-aided design 2-D drawing techniques using AutoCAD software. It includes drawing terminology, AutoCAD menus, text creation and editing, dimensioning, plotting and geometric construction, and file manipulation techniques. Students also learn model space and layout, viewports, polylines, multilines and splines, annotation with text, use of attributes for data storage, and extraction and xrefs.

**SCET 1150 – AutoCAD Civil 3-D Fundamentals** *Prerequisite (1) SCET 1120 must be completed prior to taking this course.*

This course covers nearly all of the objects and commands needed to start using AutoCAD Civil 3-D. Students focus on tools designed specifically for civil engineers, including utility, site, and roadway plans; profile; and section sheets. (Formerly AutoCAD Civil 3-D)

#### **SCET 1000 – Civil Engineering Fundamentals**

This course introduces students to a wide variety of topics related to the civil engineering field. It includes historical and contemporary engineering applications. Students investigate a variety of testing, evaluation, and classifications of methods and materials. The course covers the analysis and interpretation of topographic maps and aerial photographs.

#### **SCET 1090 – ArcGIS Fundamentals**

This course introduces students to the fundamentals of ArcGIS GIS software and general geographic information system concepts, including data editing, cartographic map production, and geospatial data analysis.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.efollett.com](http://www.efollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

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## CONSTRUCTION TECHNOLOGY

Fort Omaha Campus – 30th and Fort – Construction Education Center

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	CNST 1005	Introduction to Construction Industry	4.5	1:00 – 3:00	M, W
	CNST 1050	Introduction to Carpentry	4.5	1:00 – 3:00	T, TH
<b>December, 2018 – February, 2019</b>					
	EMSP 1010	Heartsaver First Aid with CPR and AED (First three weeks)	1.0	12:30 – 3:10	F
	CNST 1110	Construction Safety (Next four weeks)	1.0	1:00 – 3:00	F
	CNST 1370	Exterior Finish	6.5	1:00 – 3:00	M-TH
<b>March – May, 2019</b>					
	CNST 1240	Interior Finish & Cabinetry	9.0	1:00 – 3:00	M-TH
<b>TOTAL CREDIT HOURS</b>			<b>26.5</b>		

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	CNST 1360	Floor, Wall, Stair & Ceiling Framing	9.0	1:00 – 3:00	M-TH
<b>December, 2018 – February, 2019</b>					
	CNST 2360	Roof Framing	6.5	1:00 – 3:00	M-TH
<b>March – May, 2018</b>					
	CNST 1400	Introduction to Masonry	6.5	1:00 – 3:00	M-TH
<b>Summer 2018 Dates TBA</b>					
	CNST 2981	Internship	8.0		
<b>TOTAL CREDIT HOURS</b>			<b>30</b>		

### COURSE DESCRIPTIONS Year 1

#### **CNST 1005 – Introduction to Construction Industry**

This course will introduce students to the methods and material used in the construction industry. The course also covers construction efficiency and safety in the delivery, handling, and installation of building materials. It covers information on building materials, products, systems, and procedures.

**CNST 1050 – Introduction to Carpentry** This course covers the safe use of hand and power tools. Students practice the proper set up of tools and the manufacture of jigs and templates. They take part in a lab project involving all stationary and hand power tools, as well as carpentry hand tools. This course is a must for practitioners who want their tools to perform as designed.

## Construction Technology cont'd

**CNST 1110 – Construction Safety** This course provides training outlined by the Occupational Safety and Health Administration (OSHA). This course supplies students with the recommended safety requirements for working in the construction field.

**CNST 1370 – Exterior Finish** This course includes terms and definitions used in the construction field pertaining to exterior finish. It covers theory and practical application of various types of wall covering, roof covering, exterior doors, windows, and trim and emphasizes estimation of labor and materials in all areas. Students install exterior siding, roofing, windows, doors, and roofing materials on a house in the indoor lab.

### **CNST 1240 – Interior Finish and Cabinetry**

This course presents interior finish terms and definitions that are used in the construction field. It covers theory and practical application of various types of wall and ceiling finish, interior door hanging, and various applications of interior trim and cabinets. The course emphasizes estimation of labor and materials in all areas.

**EMSP 1010 – Heartsaver First Aid with CPR and AED** This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

### **Year 2**

**CNST 1360 – Floor, Wall, Stair & Ceiling Framing** Students learn the fundamentals of floor framing, wall parts, wall construction, stair parts, stair construction and installation of ceiling posts. Students construct a full-scale house in the indoor learning lab

**CNST 2360 – Roof Framing** This course covers the principles, calculations, and cutting of all components of gable, hip, and valley rafters. Students frame an actual roof on a house in the indoor lab.

**CNST 1400 - Introduction to Masonry** This course emphasizes brick and block construction. Students mix mortar and use the trowel, spread mortar, cut brick and concrete blocks, and level and plumb laid-up units. It includes dry bonding techniques and various brick-block patterns.

**CNST 2981 – Internship** *Prerequisites (2) GPA of 2.5 and career certificate or equivalent in framing, concrete, masonry management, cabinetry, or commercial construction; or instructor approval.* This internship gives students the opportunity to develop skills in the field and exposes them to established craftspeople. Applications for internships must be made through the program full-time faculty. Based on state guidelines, students must complete 40 hours of work for each credit hour.

### **Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.



## CRIMINAL JUSTICE SENIORS ONLY

Sarpy Center – 91<sup>st</sup> & Giles

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	CRIM 1010	Introduction to Criminal Justice*	4.5	1:00-3:00	M, W
	CRIM 2300	Community Relations	4.5	1:00-3:00	T, TH
<b>December, 2018 – February, 2019</b>					
	CRIM 2030	Police and Society**	4.5	1:00-3:00	M, W
	CRIM 1030	Courts and the Judicial Process	4.5	1:00-3:00	T, TH
<b>March – May, 2019</b>					
	CRIM 1020	Introduction to Corrections	4.5	1:00-3:00	M, W
	CRIM 2120	Community Based Corrections	4.5	1:00-3:00	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>27</b>		

\*Must pass with a C or better to continue.

### COURSE DESCRIPTIONS

**CRIM 1010\* – Introduction to Criminal Justice** This course is an overview of the history, development, and philosophies of crime control within a democratic society. It examines the criminal justice system with emphasis on the police, the prosecution and the defense, the courts and the correctional agencies.

**CRIM 1020 – Introduction to Corrections** This course outlines corrections as a systematic process, showing the evolving changes within institutional and community-based corrections. Topics include the history of corrections, the influence of social thought and philosophy on the development of corrections, the rights of the incarcerated inmate, and the duties of the correctional officer.

### **CRIM 1030 – Courts and the Judicial Process**

This course examines legal aspects of investigation and arrest procedures as well as rules governing the admissibility of evidence in court. It focuses primarily on police and correctional due process, application of the law, and civil liability concerns. Topics include search and seizure, arrest and interrogation, revocation, probation and parole, probable cause, and other timely issues.

**CRIM 2030 – Police and Society\*\*** *Prerequisite: CRIM 1010* This course examines the role of the police in relationship to the duties of law enforcement and their policing in a diverse society. Specific topics include key demographic trends related to the growth of multicultural communities. Also covered are key issues associated with immigration and how those issues affect law enforcement in their everyday job.

### **CRIM 2120 – Community-Based Corrections**

This course outlines a number of community-based corrections programs such as probation, parole, electronic monitoring, and fines designed to meet the level of risk and needs of the offender. The course covers the balanced approach that reflects a strong emphasis on practical and legal matters. It also discusses the historical, philosophical, social, and legal contexts of community-based corrections.

**CRIM 2300 – Community Relations** *Prerequisite: CRIM 1010* This course examines the traditional and current problems that inhibit understanding among all segments of the criminal justice system and the public. It explores methods of creating understanding and confidence by using various means of communication.

## Criminal Justice cont'd

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

## DIESEL TECHNOLOGY

Applied Technology Center – 10407 State St, Omaha  
Omaha, NE

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Days
<b>(Th) July 5 – (W) July 18</b>					
	DESL 0900	Basics of Diesel Mechanics	1.5	8:00-11:00	M, T, W, TH, F
<b>September – November, 2018</b>					
<i>Note: Career Academy Students are divided into two sections by space availability</i>					
	DESL 1000	Diesel Preventive Maintenance	4	1:00-4:25	T, TH or
	DESL 1000	Diesel Preventive Maintenance	4	1:00-4:25	M, W
<b>December, 2018 – February, 2019</b>					
	DESL 1230	Diesel Engine Fundamentals	4	1:00-4:25	M, W or
	DESL 1230	Diesel Engine Fundamentals	4	1:00-4:25	T, TH
<b>March – May, 2019</b>					
	DESL 2100	Heavy Duty Drivetrain	4	1:00-4:25	M, W or
	DESL 2100	Heavy Duty Drivetrain	4	1:00-4:25	T, TH
<b>TOTAL CREDIT HOURS - per group</b>			<b>13.5</b>		

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Course Title	Credits	Times	Scheduled Days
<b>SUMMER QUARTER 2018</b>					
<b>RECOMMENDED for Career Certificate DDES1:</b>					
	DESL 2200	Steering and Suspension	4.0 credits	2 afternoons / wk	
	WELD 1261	Combination Welding - Automotive	3.0 credits	Welding Department	
<b>TOTAL CREDIT HOURS</b>			<b>7.0</b>		
<b>*OPTIONAL</b>	DESL 2981	Diesel Internship I (with Host Employer from the Industry with pay)	8	As required	
<b>September – November</b>					
	DESL 1210	Electricity and Electronics	6	1:00-5:45	M, W
<b>December – February</b>					
	DESL 2150	Truck ABS and Brakes	4	1:00-4:25	T, TH
<b>March – May</b>					
	DESL 1620	Climate Control/Heating and Air Conditioning	4	1:00-4:25	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>14*</b>		

**1. First Year students are required to attend and pass the DESL 900 summer session for screening into the fall program.**

**2. Good attendance is required.**

**3. \*\*TOTAL CREDIT HOURS of 14 for Summer Year 2 students does not include DESL 2981 Diesel Internship I or recommended classes for career certificate.**

**4. Shirt(s) will be required; purchase ONLINE. (For 2017/2018 year, cost was \$12.00/shirt)**

### **COURSE DESCRIPTIONS first year (2018-19)**

**DESL 0900 – Basics of Diesel Mechanics** This class provides the student with an overview of the profession of diesel mechanics. In addition, it gives the beginning student hands-on experience with tasks designed to enhance mechanical ability, as well as the opportunity to explore the broad areas of a career in diesel technology.

**DESL 1000 – Preventive Maintenance** This course is the study of truck and equipment preventive maintenance and inspection. Focus will be emphasized in shop tools, equipment and practices to start a career in diesel technology.

**DESL 1230 – Diesel Engine Fundamentals** *Prerequisite DESL 1000 Diesel Preventive Maintenance and earn a “C” or better.* This course is the study of diesel engine principles and component identification. Students gain knowledge through lecture and entry-level hands-on engine assembly and disassembly.

**DESL 2100 – Heavy Duty Drivetrain** *Prerequisite: DESL 1000 Diesel Preventive Maintenance and earn a “C” or better.* This course is the study of medium and heavy-duty truck clutches, transmissions, drivelines, and differentials. Focus will be emphasized on operation, repair and maintenance of these systems.

### **COURSE DESCRIPTIONS second year (2019-20)**

**DESL 1210 – Electricity and Electronics** **COURSE REQUISITE (S):** *DESL 1000 Diesel Preventive Maintenance and earn a “C” or better* **Note:** *Students should qualify by proper testing to enter at minimum Math 1240 before registering for DESL 1210.* This course presents electrical principles and basic introductory electronics used in the Diesel Technology career field for service of medium duty truck, heavy duty truck, heavy equipment, and power generation applications. Theory, operation and testing of common systems will be investigated with MCC hands-on trainers and live work.

**DESL 1620 – Climate Control/Heating and Air Conditioning** *Prerequisite: DESL 1210.* This course is the study of diesel heating, air conditioning, and support systems in-depth. Students troubleshoot and make repairs in the shop with a variety of trucks and equipment.

**DESL 2150 – Truck ABS and Brakes** **COURSE REQUISITE (S):** *Prerequisites (2): DESL 1000 Diesel Preventive Maintenance & DESL 1200 Fundamentals of Hydraulics and earn a “C” or better; or it may be taken with Instructor Permission in conjunction with either one or both of these 2 courses as a co-requisite.* This course with professional lab presentations studies, analyzes, and repairs ABS systems on both medium- and heavy-duty trucks. Students learn to repair, rebuild, and maintain air brake systems through lab experiences in wheel-end repair and maintenance.

**RECOMMENDED for Career Certificate DDES1:** *not part of the academy\**

**\*DESL 1200 – Fundamentals of Hydraulics** *Prerequisite DESL 1000 Diesel Preventive Maintenance and earn a “C” or better; or it may, with Instructor Permission, be taken in conjunction with DESL 1000 as a co-requisite.* This course is the study of basic principles relating to hydraulic systems and component identification. Activities involving schematic usage and symbol identification enhance students' diagnostic skills.

**\*DESL 2200 – Steering and Suspension** *Prerequisites (2): DESL 1000 Diesel Preventive Maintenance & DESL 1200 Fundamentals of Hydraulics and earn a “C” or better; or it may, with Instructor Permission, be taken in conjunction with either one or both of these 2 courses as a co-requisite.* This course is a study of heavy-duty truck steering and suspension systems. Students learn to repair, align, and maintain these systems.

**\*WELD 1261 Combination Welding - Automotive** This course acquaints students with the various welding and cutting techniques applicable to the automotive field.

**\*DESL 2981 – Diesel Internship I** This internship gives students the needed experience to advance their skills, while working with a qualified mentor in a diesel repair shop or dealership. The experience provides students the opportunity to practice their skills in real life work situations. Applications for internships must be approved by program faculty.

**Required Books: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

All classes listed above need: CDX Medium/Heavy Duty Diesel System Textbook & Engine Textbook + (2yr. Online Access) ISBN Kit #9781284110586 (Complete Kit available at our MCC bookstore only). **2017 cost \$464.75 + tax.**

**DIGITAL CINEMA/FILMMAKING**  
Elkhorn Valley Campus – 204<sup>th</sup> & Dodge

**Year 1 Student 2018 - 2019**

<b>Dates</b>	<b>Course</b>	<b>Title</b>	<b>Credits</b>	<b>Times</b>	<b>Scheduled Days</b>
<b>September – November, 2018</b>					
	PHOT 1500	Moving Image Lab	6	1:00 - 2:30	M, T, W, TH
<b>December, 2018 – February, 2019</b>					
	VACA 1130	Video I - Studio	4.5	1:00 - 4:00	M, W
	VACA 1110	Introduction to Scriptwriting***	4.5	1:00 - 3:05	T, TH
<b>March – May, 2019</b>					
	VACA 2900	Art in Film	3	1:00 - 3:00	M, W
	VACA 2130	Video II – Field	4.5	1:00 – 4:00	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>22.5</b>		

\*\*\*Note: VACA 1110 requires: Excellent English grades

**COURSE DESCRIPTIONS**

**PHOT 1500 – Moving Image Lab** This course is an overview of methods used in moving image production. By investigating the pre-production, production and post-production processes, students achieve an understanding of how these principles integrate with still photography, video production, and multimedia.

**VACA 1110 – Introduction to Scriptwriting** This course introduces scriptwriting for video production, television, and motion picture film. Using the two-column and screenplay formats, students complete lab exercises and assignments about the structure of concept, treatment, and finished script. It reviews broadcast or corporate examples. Students can use the scripts for projects in Moving Image Lab, Video II, and Video III.

**VACA 1130 – Video I - Studio** This course is an introduction to the video medium. Students learn and practice the basics of operating a video camera, recording quality images and sound, and editing tape. Both studio and location assignments provide practical learning opportunities. NOTE: PHOT 1500 is required for Video majors only.

**VACA 2130 – Video II – Field** Camera operation, sound recording, and editing assignments provide an intermediate skill level of learning and practice. It introduces and applies lighting for the studio and on location.

**VACA 2900 – Art in Film** *Prerequisite: PHOT 1500* This course examines film as an art form, emphasizing the connection between form and content. Students will gain a greater understanding of the visual language of cinema by studying the conscious aesthetic choices made by the filmmakers to convey the story and/or meaning. Students view and discuss a variety of films from various genres, including noir, screwball comedy and documentary. The course also covers important movements in cinema such as French New Wave and Italian Neo-realism, examining both stylistic traits as well as historical importance. Beyond covering and analyzing the components of filmmaking, this course delves into basic concepts of film theory.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## DIVERSIFIED MANUFACTURING / PROCESS OPERATIONS

Fort Omaha Campus – 30<sup>th</sup> and Fort – Center for Applied Technology

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2017</b>					
	PROT 1010	Safety Topics for Process and Power Operations	4.5	1:00 – 3:20	M, W,
	PROT 1000	Introduction to Process and Power Operations	4.5	1:00 – 3:20	T, TH,
<b>December, 2018 – February, 2019</b>					
	PROT 1250	Basic Electricity for Power and Process	6.0	1:00 – 3:20	T, W, TH
	INCT 2050	Problem Solving	3.0	1:00 – 3:20	M
<b>March - May, 2019</b>					
	WORK 1401	Employability Skills for Power and Process	4.5	1:00 – 3:20	T, TH
Optional Internship:					
	PROT 2981	Internship	2.0	TBA	M,T,W,TH
<b>TOTAL CREDIT HOURS</b>			<b>22.5/24.5 w/internship</b>		

OSHA Credential fee will be assessed when the student enrolls in the fall quarter class PROT 1010 (Fee for 2016/2017 year was \$25.00).

The Diversified Manufacturing and Process Operations Academy features an introduction for those students interested in advancing into the skilled trades. This academy is for someone that has not decided on a specific trade's area as the knowledge and skills learned will be useful in a broad spectrum of manufacturing occupations.

### **COURSE DESCRIPTIONS**

**INCT 2050 – Problem Solving** This course builds troubleshooting expertise for maintenance professionals and decision-makers at all levels. It examines creative- and critical- thinking, problem-solving, and troubleshooting.

**PROT 1000 – Introduction to Process and Power Operations** This course is designed to introduce students to various equipment and components found in the Process and Power Operations industry. Some of the topics explored may include; preventive and predictive maintenance, safety, lubrication, precision measuring devices, compressors, pumps, valves, steam systems, heat exchangers, cooling systems, and process instrumentation.

**PROT 1010 – Safety Topics for Process and Power Operations** This course is designed to provide students instruction in various safety topics found in the Process and Power Operations industry.

**PROT 1250 – Basic Electricity for Power and Process** This course consists of lectures, discussions, demonstration and coaching in the general area of electrical theory and practice used in process control systems. Electron theory is studied as it relates to ac and dc circuits. Various circuits, resistance, capacitance, inductance, symbols and wiring diagrams are studied. Laboratory assignments and virtual training provide students an understanding of electrical theory, measuring and control devices. Safety will be emphasized as the student is working with actual controls and voltages.

**PROT 2981 –** The internship provides students the opportunity to apply their knowledge, learn new techniques, and get on-the-job training in the Process, Power and Manufacturing industries. Based on state guidelines, students must complete 40 hours of work for each credit hour in this course.

## DIVERSIFIED MANUFACTURING / PROCESS OPERATIONS cont.d

**WORK 1401 – Employability Skills for Power and Process** This course introduces students to energy related industries, employers and unique employability skills required to succeed. Students will have the opportunity to enhance their interpersonal, teamwork, and communication skills, to problem solve and think creatively, and to employ effective time management life skills as required for success in the field.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.efollett.com](http://www.efollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.



## EARLY CHILDHOOD EDUCATION -SENIORS ONLY

24<sup>th</sup> and Franklin, Learning Center

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	ECED 1150	Introduction to Early Childhood Education	4.5	2:00-4:00	T, TH
	ECED 1110	Infant/Toddler Development	4.5	2:00-4:00	M, W
<b>December, 2018 – February, 2019</b>					
	ECED 1120	Preschool Child Development *	4.5	2:00-4:00	M, W
	ECED 1050	Expressive Arts	4.5	2:00-4:00	T, TH
<b>March – May, 2019</b>					
	ECED 1060	Observation, Assessment/Guidance*	4.5	2:00-4:00	M, W
	ECED 1260	Children's Health & Nutrition	4.5	2:00-4:00	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>27</b>		

\* Observation outside of class time may be required (no more than 4 hours per course).

#### Additional Fees:

State licensing requires a background check fee to be assessed when taking Early Childhood Education courses. Background check fee is estimated at \$35.00.

#### **COURSE DESCRIPTIONS**

**ECED 1050 – Expressive Arts** This course covers selection, construction, and use of materials, activities, and experiences that encourage the young child's creativity and aesthetic appreciation through the visual arts, music, body movement, and dramatic play. Curriculum is for three to eight years of age.

**ECED 1060 – Observation, Assessment and Guidance** This course introduces a variety of observation, assessment, and guidance strategies used in early childhood education settings birth through age eight. Student will create a portfolio for one child.

**ECED 1110 – Infant/Toddler Development** This course focuses on typical and atypical development of children in the prenatal period of development through 36 months of age. It examines planning curriculum in the domains of physical growth and motor skills, cognition, language, and social and emotional development.

**ECED 1120 – Preschool Child Development** This course focuses on typical and atypical development of the child ages three to five years in the domains of physical growth and motor skills, cognition and language, and social/emotional development.

**ECED 1150 – Introduction to Early Childhood Education** This course is an overview of early childhood education, history, and trends. It examines the philosophies of various programs, diversity, inclusion, licensing standards, current legislation, professionalism, and advocacy.

**ECED 1260 – Children's Health and Nutrition** Students gain an understanding of the inter-relatedness of health, safety, and nutrition in the life of a young child, birth through age eight. Students learn about health appraisals and appropriate assessment tools. They make an in-depth analysis of the infectious process and effective control of communicable diseases and acute illness found in the early childhood years and settings. The course examines safety management and the handling of child abuse and neglect. Students learn appropriate nutritional guidelines and practices for planning meals and snacks in the classroom.

## EARLY CHILDHOOD EDUCATION cont'd.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

# ELECTRICAL TECHNOLOGY

Fort Omaha Campus – 30th and Fort – Construction Education Center

## Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	ELTR 1200	Basic Electricity*	8	1:00 – 2:50	M-TH
<b>December, 2018 – February, 2019</b>					
	CNST 1020	Blueprint Reading (First 5 weeks)	4.5	1:00 – 3:00	M-TH
	ELTR 2240	National Electrical Code (Second 5 weeks)	4.5	1:00 – 3:00	M-TH
	EMSP 1010	Heartsaver First Aid with CPR and AED (First three weeks)	1.0	12:30 – 3:10	F
	CNST 1110	Construction Safety (Next four weeks)	1.0	1:00 – 3:00	F
<b>March – May, 2019</b>					
	ELTR 1210	Residential Wiring*	9	1:00-3:00	M, T, W, TH
<b>TOTAL CREDIT HOURS</b>			<b>28</b>		

## Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	ELTR 1220	Commercial Wiring*	9.0	1:00-3:00	M, T, W, TH
<b>December, 2018 – January, 2019</b>					
	ELTR 2250	Commercial Wiring II	6.0	1:00-2:40	M, T, W, TH
<b>March 10 – May, 2019</b>					
	ELTR 1250	Electric Service and Installation	6.0	1:00-2:40	M, T, W, TH
<b>TOTAL CREDIT HOURS</b>			<b>21</b>		

**\*Students must receive a C or better to advance to the next class.**

**Tools and Supplies:** Students provide tool pouch, wire strippers, lineman's pliers, 4 in 1 screwdriver, multi-meter (recommended Ideal #61-744), calculator, safety glasses and colored pencil set with green, yellow, red, black, blue, violet and brown. Safety glasses and closed toe shoes must be worn in lab. MCC will provide, on loan, most of the appropriate supplies and tools for each course. Students will be held responsible for lost and/or broken equipment and tools.

### **COURSE DESCRIPTIONS**

**CNST 1110 – Construction Safety** This course provides training outlined by the Occupational Safety and Health Administration (OSHA). This course supplies students with the recommended safety requirements for working in the construction field.

**CNST 1020** – This course teaches how to read and interpret residential architectural plans, including terms and definitions, architectural drawings, alphabet of lines, description of lines, and floor plan, electrical, plumbing, section, and mechanical symbols. It emphasizes reading an architect's scale. This course also includes extracting specified information from a set of building specifications and simple sketching procedures.

## ELECTRICAL TECHNOLOGY cont'd.

**EMSP 1010 – Heartsaver First Aid with CPR and AED** This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

**ELTR 1200 – Basic Electricity** This course includes an introduction to electrical theory and series and parallel circuits. Topics include alternating current, Ohm's Law, meters, grounding, preview of the National Electric Code, troubleshooting, and repair. NOTE: Completion of ELTR 1200 with a grade of C or better is required to advance to next level class.

**ELTR 1210 – Residential Wiring** Prerequisite: ELTR 1200 with grade of C or better. This course is designed to give students a basic knowledge of the electrical circuitry found in residential wiring. Students learn to apply the National Electrical Code standards.

**ELTR 1220 – Commercial Wiring** Prerequisite: ELTR 1210 with grade of C or better. This course includes the study of branch circuits, wiring methods, and application of the National Electrical Code. Following the requirements of the National Electrical Code, students learn how to select the proper type and size of boxes, raceways, and conductors. Students also learn how to calculate box fill, conduit fill, and conduit bending.

**ELTR 1250 Electric Service and Installation** – Prerequisite (1) ELTR 1200 with grade of C or better - must be completed prior to taking this course.

This course explains the electric controls for general motor controllers, time clock lighting controls, photo electric controls, AC and DC controls, equipment grounding, heat pump concepts and controls, and furnace and AC concepts and controls. Troubleshooting basic motor and control concepts are covered.

### **ELTR 2250 – Commercial Wiring II**

This course is a continuance of Commercial Wiring I. Students will focus on advanced devices, installation of equipment installations, and trouble shooting and repairs. Further understanding of calculations for equipment and the National Electrical Code will be included.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

## EMERGENCY MEDICAL TECHNICIAN (EMT) – Seniors Only

South Omaha Campus – 27<sup>th</sup> & Q – Mahoney Building

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>Group 1 September – September, 2018</b>					
	EMSP 1000	Cardiopulmonary Resuscitation	1	1:00–4:00	F First 4 Weeks
	EMSP 1010	Heartsaver First Aid with CPR and AED	1	1:00–4:00	F First 4 Weeks
<b>Group 1 September – November, 2018</b>					
	HIMS 1120	Medical Terminology I*	4.5	1:00–2:55	M, W
<b>Group 2 September – November, 2018</b>					
	HIMS 1120	Medical Terminology I*	4.5	1:00–2:55	T, TH
<b>Group 2 September – September, 2018</b>					
	EMSP 1000	Cardiopulmonary Resuscitation	1	1:00–4:00	F Second 4 Weeks
	EMSP 1010	Heartsaver First Aid with CPR and AED	1	1:00–4:00	F Second 4 Weeks
<b>Group 1 December, 2018 – February, 2019</b>					
	HIMS 1130	Medical Terminology II*	4.5	1:00–2:55	M, W
<b>Group 1 December, 2018 – February, 2019</b>					
	WORK 1400	Employability Skills	4.5	1:00–3:00	T, TH
<b>Group 2 December, 2018 – February, 2019</b>					
	HIMS 1130	Medical Terminology II*	4.5	1:00–2:55	T, TH
<b>Group 2 December, 2018 – February, 2019</b>					
	WORK 1400	Employability Skills	4.5	1:00–3:00	M, W
<b>March – May, 2019</b>					
	EMSP 1100	EMT	12	1:00–4:00	M, T, W, TH
<b>TOTAL CREDIT HOURS - per group</b>			<b>27.5</b>		

**Note:** In EMSP 1100 -National Registry Exam -Certification Test can be taken before 18 but you must be 18 years or older to receive the certificate.

**\*Students must receive C or above in order to remain in the academy.**

#### Application Process and Fees:

- EMT Application/Technical Standards form signed and submitted
- Background Check form signed and submitted by both student and parent if under 18.
- Provide proof of all immunizations, including Hepatitis B and Mantoux PPD Skin Test (TB -Tuberculosis Test) that will remain current through the end of the spring quarter classes. SSN required for State Registry
- Driver's License or government ID
- Need CPR Card from EMSP 1010 for EMSP 1100
- National Registry Exam test fee will be assessed when the student enrolls in the spring quarter class EMSP 1100 EMT (Fee for 2017/2018 year was \$80.00.)
- Student Liability Insurance Program\*\* fee will be assessed when the student enrolls in the spring quarter class EMSP 1100 EMT (Fee for 2017/2018 year was \$14.50.)
- Fire Department Ride Along fee will be assessed when student enrolls in the spring quarter class EMSP 1100 EMT (Fee for 2016/2017 year was \$25.00.)
- Fire Department Fisdap Ride Along program scheduler fee will be assessed when student enrolls in the spring quarter class EMSP 1100 EMT (Fee for 2017/2018 year was \$15.00.)

## EMERGENCY MEDICAL TECHNICIAN (EMT) – Seniors Only

- Background Check fee will be assessed when the student enrolls in the spring quarter class is necessary prior to starting EMSP 1100 EMT (Fee for 2017/2018 year was \$45.00.)
- Drug Testing will be assessed when the student enrolls in the spring quarter class is necessary prior to starting EMSP 1100 EMT (Fee for 2017/2018 year was \$48.00)
- Tools and Supplies: stethoscope, uniform (polo, pants, black shoes), pen and notepad, watch with second hand will be required in the Spring Quarter.

*\*\*Students enrolling in certain health occupations and human services programs requiring clinical practice, laboratory or experiences that place the student in the position of providing patient care must be covered by a student liability insurance program. The specific policy shall be determined by the College with the cost paid by the student as part of the fee assessment upon initial enrollment in the clinical, laboratory or patient care class.*

### **COURSE DESCRIPTIONS**

**EMSP 1000 – Cardiopulmonary Resuscitation for Healthcare Providers** This course will teach the participant how to recognize and respond to life-threatening emergencies, such as cardiac arrest, respiratory arrest, and foreign-body airway obstruction (choking). The student will learn to recognize heart attack and stroke symptoms in adults and breathing difficulty in children. This course teaches the skills needed to respond to emergencies identified. The participant will learn the skills of CPR for victims of all ages (including ventilation with barrier devices and bag-mask devices), use of an automated external defibrillator (AED), and relief of foreign-body airway obstruction (FBAO).

**EMSP 1010 – Heartsaver First Aid with CPR and AED** This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

**EMSP 1100 – Emergency Medical Technician** This Emergency Medical Technician course provides an introduction to Emergency Medical Care. Modules of training will include medical-legal, roles and responsibilities of the EMT, documentation and communication, human body anatomy and physiology of the major human systems, medical terminology, lifting and moving, airway management basic and advanced, patient assessment, medical and trauma, medical emergencies, treatment, and use of assisted medications and IV maintenance, bleeding control and shock, trauma emergencies, use of immobilization devices, obstetrical emergencies, childbirth, pediatrics and children emergencies, ambulance operations, hazardous materials, mass casualty, and triage. This course consists of 110 didactic hours, 55 hours of lab, and 10 hours of field experience with 5 patient contacts. NOTE: Requirements for this course include a completed application, completed background check form, and proof of current CPR Certification for Healthcare Provider or CPR for the Professional Rescuer. Upon enrollment the National Registry Test Fee, Student Liability Insurance, Fire Department Ride Along fee, FISDAP fee, drug testing fee, and Background Check fee are assessed to the student's account.

**HIMS 1120 – Medical Terminology I** This course assists students in establishing a solid foundation of medical terminology and abbreviations and introduces prefixes, suffixes, and word roots used in the language of medicine. The course emphasizes medical vocabulary as it applies to the anatomy, physiology, and pathology of the human body. Students study the functioning of the body systems, clinical/surgical procedures, and therapies and examine normal, pathological, clinical, and laboratory considerations in order to best prepare for entrance into the healthcare professions. The course also emphasizes correct spelling and pronunciation.

**HIMS 1130 – Medical Terminology II** *Prerequisite: HIMS 1120*

This course is a continuation of HIMS 1120. It presents additional body systems, specialty medical areas, clinical procedures, laboratory tests, medical terms, and abbreviations. Students study practical applications with case reports, operative and diagnostic tests, and laboratory and x-ray reports. The course also emphasizes correct spelling and pronunciation.

## EMERGENCY MEDICAL TECHNICIAN (EMT) – Seniors Only

**WORK 1400 – Employability Skills** This course allows students to enhance their interpersonal skills, improve their ability to work in teams, learn to communicate effectively, think creatively, use problem-solving techniques, and explore competitive job-seeking strategies.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

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## FIRE SCIENCE TECHNOLOGY (FIST)

Applied Technology Campus – 10407 State Street, Omaha, Nebraska

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	FIST 1000	Principles of Emergency Services	3	12:30-3:30	TU
	FIST 1020	Fire Behavior & Combustion	4	12:30-3:30	WE
<b>December, 2018 – February, 2019</b>					
	FIST 1060	Occupational Safety & Health for Emergency Services	3	12:30-3:30	TU
	FIST 2040	Principles of Fire & Emergency Services Safety & Survival	3	12:30-3:30	WE
<b>March – May, 2019</b>					
	FIST 1070	Fire Protection Systems	3	12:30-3:30	TU
	FIST 2020	Fire Prevention, Inspection & Codes	3	12:30-3:30	WE
<b>TOTAL CREDIT HOURS</b>			<b>19</b>		

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	FIST 2030	Legal Aspects of Emergency Services	3	12:30-3:30	TU
	FIST 2000	Incident Command System	3	12:30-3:30	WE
<b>December, 2018 – February, 2019</b>					
	FIST 1050	Building Construction for Fire Protection	3	12:30-3:30	TU
	FIST 2010	Fire Investigation I	3	12:30-3:30	WE
<b>March – May, 2019</b>					
	FIST 2900	Selected Topics in Fire Science*	3	12:30-3:30	TU
	FIST 2070	Hazardous Materials Operations	3.5	12:30-3:30	WE
<b>TOTAL CREDIT HOURS</b>			<b>18.5</b>		

**GRADUATION SUMMER** – any senior who completes year one and is 18 by the start of the class will be guaranteed a spot in FIST 1090. Students completing both years are also guaranteed a spot in class the summer they graduate if they are 18 by the start of the class.

<i>FIST 1090**</i>	<i>Firefighter I</i>	10	5:00-9:00p	WE
			8:30-3:00p	SAT

*FIST 2900 is not part of the FSAAS degree but is required*

*Students must receive passing grades in order to remain in the academy.*

*\*\* must be 18 years or older by June in order to take FIST 1090 (Firefighter I).*

## FIST cont'd.

### Application Process and Fees:

- Career Academy FIST Application/Technical Standards form signed and submitted

### **COURSE DESCRIPTIONS**

**FIST 1000 – Principles of Emergency Services** This course provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; culture and history of emergency services; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics; and life safety initiatives. NOTE: Course formerly Introduction to Fire Protection Principles.

**FIST 1020 – Fire Behavior & Combustion** This course explores the theories and fundamentals of how and why fires start, spread, and are controlled. Topics include fundamental laws of chemistry, states of matter, gas laws, chemical bonding, and thermodynamics with applications to various industrial processes.

**FIST 1050 – Building Construction for Fire Protection** This course provides a basic understanding of how the construction type, alternative design, and materials influence a building's reaction to fire. This course provides recognition of relevant information about a building before a fire, as well as fire ground 'reading' of the building that provides the ability to assess building stability and resistance to fire and determine likely paths of fire extension. Students become familiar with the materials and types of construction used for the various parts of buildings in this class. This course covers building code requirements; steel, timber, and masonry construction; structures of the common form; lift-slab and tilt-up construction; and developments in the building construction field. This course teaches building construction as it relates to the firefighter and life safety.

**FIST 1060 – Occupational Safety and Health for Emergency Services** This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk and hazard evaluation and control procedures for emergency service organizations.

**FIST 1070 – Fire Protection Systems** This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection, and portable fire extinguishers.

**FIST 2000 – Incident Command System** This course provides an introduction to the basic principles of the Incident Command System within the National Incident Management System (NIMS) compliant framework. The course covers the Department of Homeland Security Incident Command courses 100, 200, and 700. These are the minimum Federal ICS requirements for first responders within the United States. In addition to the course reading material and lecture, the course relies heavily on a final group activity and an understanding of inter-agency dynamics. Personnel accountability, safety at the scene, planning for the continuity of operations, and logistical requirements for incidents of all risks and sizes are only a few of the major components that are covered.

**FIST 2010 – Fire Investigation I** This course provides students with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire-setter, and types of fire causes. NOTE: Course formerly Incendiary Fire Analysis and Investigation.

## FIST cont'd.

**FIST 2020 – Fire Prevention, Inspection and Codes** This course is an examination and evaluation of the techniques, procedures, programs, and agencies involved with fire prevention. It gives consideration to related governmental inspection and education procedures.

**Fist 2030 – Legal Aspects of Emergency Services** This course is an introductory course that addresses the federal, state, and local laws that regulate emergency services and includes a review of national standards, regulations, and consensus standards.

**FIST 2040 – Principles of Fire & Emergency Services Safety & Survival** This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavioral change throughout the emergency services.

**FIST 2070 – Hazardous Materials Operations** This course introduces the basic skills necessary to safely and effectively manage on-scene operations involving the uncontrolled release of dangerous chemicals. It focuses on those individuals in local jurisdictions who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. Those individuals respond in a defensive fashion without actually trying to stop the release. Upon successful completion, students are able to apply for certification at the Hazardous Materials Operations Level, as per OSHA regulation 29 CFR 1910.120, their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures.

**FIST 2900 – Selected Topics in Fire Science\*** This course provides students with practical instruction and lab demonstration in all areas of a Fire Fighting Career without placing them in an Immediately Dangerous to Life or Health Situation (non-IDLH). Such practical instruction and lab demonstration will include: Search & Rescue Techniques; Use of Portable Fire Extinguishers; PPE; Ropes & Knot Tying; Use of Fire Hose, Nozzles and Appliances; Salvage & Overhaul Procedures; Tools & Equipment; and Ladders. Upon enrollment, Student Liability Insurance fees are assessed to the student's account.

**FIST 1090 – Firefighter I** *Prerequisites: Medical screening compliant with NFPA 1582 Corequisites: FIST 2070*  
This course includes the information and skills to perform basic firefighting functions on the fire ground. Upon completion, students can take the Nebraska State Firefighter I Certification Test. This course prepares students to meet the requirements of Firefighter I per NFPA 1001 Standard for Firefighter Professional Qualifications and Hazardous Materials Awareness per NFPA 472 Standard for Responders to Hazardous Materials Incidents. **\*\*student must be 18 years or older**

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## HVAC Technology

Fort Omaha Campus – 30th and Fort – Construction Education Center

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	HVAC 1000	Refrigeration Electrical Theory	6.0	1:00 – 2:30	M-TH
<b>December, 2018 – February, 2019</b>					
	HVAC 1010	Refrigeration Service Principles	6.0	1:00 – 2:30	M-TH
<b>March – May, 2019</b>					
	HVAC 1020	Refrigeration Shop Practices	4.5	1:00 – 3:00	M,W
	HVAC 2310	Refrigeration Certification	2.0	1:00 – 3:00	TH
<b>TOTAL CREDIT HOURS</b>			<b>18.5</b>		

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	HVAC 1210	Gas Heat (First five weeks)	4.5	1:00 – 3:00	M-TH
	HVAC 1211	Electric Heat (Second five weeks)	4.5	1:00 – 3:00	M-TH
<b>December, 2018 – February, 2019</b>					
	CNST 1020	Blueprint Reading	4.5	1:00 – 3:00	M,W
	EMSP 1010	Heartsaver First Aid with CPR and AED (First three weeks)	1.0	12:30 – 3:10	F
	CNST 1110	Construction Safety (Next four weeks)	1.0	1:00 – 3:00	F
<b>March – May, 2019</b>					
	HVAC 1540	All Weather Syst. Conventional (First five weeks)	4.5	1:00 – 3:00	M-TH
	HVAC 2220	All Weather Syst. Heat Pump (Second five weeks)	4.5	1:00 – 3:00	M-TH
<b>TOTAL CREDIT HOURS</b>			<b>24.5</b>		

#### Year One

##### **HVAC 1000 – Refrigeration Electrical Theory and Application**

This course consists of lectures, discussions, and demonstrations in the general area of electrical theory and practice used in HVAC systems. It makes a general study of the electron theory as it relates to the electrical circuit and covers various circuits, resistance capacitance, symbols, and ladder diagrams. Students conduct lab experiments to provide understanding of electrical theory. The course places great emphasis upon safety, as students are working with actual controls and voltages.

##### **HVAC 1010 – Refrigeration Service Principles and Basic Automatic Controls**

This course provides experience in actual refrigeration service practice and stresses controls, system maintenance, and subassembly replacement. Students work out typical service problems and learn the fundamentals of controls, definitions, measurements, electric controls, safety controls, and refrigerant controls.

## HVAC Technology cont'd.

### **HVAC 1020 – Refrigeration Shop Practices**

This course provides practice in using tools in basic refrigeration jobs, such as tube bending, flaring, swaging, and soldering. Students become acquainted with standard shop tools and equipment so they can meet or exceed industry standards.

### **HVAC 2310 – Refrigeration Certification**

This course covers the usage of EPA-approved equipment to remove, recycle, and reclaim refrigerant. Students take the EPA test with a pass or fail of 75 percent minimum.

### Year Two

**HVAC 1210 Gas Heat** – Prerequisite HVAC 1000 - must be completed prior to taking this course.

Students examine, service, and troubleshoot various types of gas furnaces. The course covers heating fundamentals, including combustion and heat transfer, and explains heating components, including spark ignition. Special attention is given to safety.

**HVAC 1211 Electric Heat** – Prerequisite HVAC 1210 - must be completed prior to taking this course.

Students make a comprehensive study of electric furnace wiring for residential and light commercial installations. The course covers operating and safety controls in-depth and gives considerable time to proper care and use of test instruments, troubleshooting, and safety requirements.

**HVAC 1540 All-Weather Systems (Conventional)** – Prerequisite (1) HVAC 1210 - must be completed prior to taking this course.

The course emphasizes combination heating and cooling systems. The class and laboratory time deals primarily with natural gas heating and cooling systems. It also covers humidification, electronic air cleaning, and air filtering.

**HVAC 2220 All-Weather Systems (Heat Pumps)** – Prerequisite (1) HVAC 1211 - must be completed prior to taking this course.

This course covers the refrigerant cycle and the reverse cycle principle, including the reversing valve. It discusses special components and accessories used with heat pumps and devotes a considerable amount of instruction to electric controls found on heat pump systems and to the various services involved.

**ELTR 2900 – Special Topics** Students will be introduced to the benefits and application of SkillsUSA.

**EMSP 1010 – Heartsaver First Aid with CPR and AED** – This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

**CNST 1110 Construction Safety** – This course provides training outlined by the Occupational Safety and Health Administration (OSHA). This course supplies students with the recommended safety requirements for working in the construction field.

**CNST 1020 Blueprint Reading** – This course teaches how to read and interpret residential architectural plans, including terms and definitions, architectural drawings, alphabet of lines, description of lines, and floor plan, electrical, plumbing, section, and mechanical symbols. It emphasizes reading an architect's scale. This course also includes extracting specified information from a set of building specifications and simple sketching procedures.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## IT – INFORMATION TECHNOLOGY DATA CENTER OPERATIONS

Fort Omaha Campus –30th and Fort - Center for Advanced and Emerging Technology

Data Centers store information; deploy business applications; and use data analytics, desktop virtualization, and cloud technology to improve agility and efficiency. According to the US Department of Labor, the median annual wage for computer systems analysts is \$85,800 with a 20.9% change from 2014 to 2024. This academy provides students with a basic knowledge of the data center operations technician. Students get hands-on experience working with MCC's Data Center to explore the day-to-day duties of a data center technician.

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	INFO 1110	Windows Operating System I	4.5	1:00 – 3:00	M, W
	INFO 1023	Networking Essentials	4.5	1:00 – 3:00	T, TH
<b>December, 2018 – February, 2019</b>					
	INFO 1401	Intro to Data Center Operations	4.5	1:00 – 3:00	M,W
	CFOT 1000	Introduction to Critical Facilities	4.5	1:00 – 3:00	T, TH
<b>March – May, 2019</b>					
	INFO 1413	Data Center Technician I	4.5	1:00 – 3:00	T, TH
<b>TOTAL CREDIT HOURS</b>			<b>22.5</b>		

All students must have a basic knowledge of computer technology. All classes are Hybrid format. MCC's credit online, hybrid and web-enhanced courses are delivered via a Learning Management System called Blackboard. Blackboard is a website that provides a user-friendly way for teachers to place course materials, interactive and/or collaborative activities, and assessments online. Students have an intuitive way to interact with the course materials and with other students. With Blackboard, students can upload files to submit assignments, post messages to forums, take tests and more. Students can check their progress and grades at any time during the course.

### COURSE DESCRIPTIONS

**CFOT 1000 – Introduction to Critical Facilities.** This course introduces students to the unique systems and requirements for safely, effectively, efficiently, and sustainably operating critical facilities such as data centers, hospitals, and other buildings that must operate at all times with minimal down time. Students identify codes, regulations, and standards, and apply essential concepts such as redundancy and systems thinking as they examine operating parameters and processes related to the various interrelated systems. Students also explore the use of industry-related software to obtain and analyze data necessary to effectively operate critical facilities.

**INFO 1023 – Networking Essentials.** This course is the foundational networking course and prepares students for the advanced IT courses. The fundamentals of national and international networked communications, including standards, data communications, local area networking, wide area networking, virtual computing, and wireless communications are covered. WAN technologies and hardware as well as emerging data network technologies, mobile, and nomadic computing are also covered.

**INFO 1110 – Windows Operating System I.** This course introduces students to the Microsoft Windows desktop operating system. Students learn fundamental concepts to effectively use and manage the Microsoft Windows desktop operating system. Many of the course objectives comply with industry standard certification exam objectives.

**INFORMATION TECHNOLOGY DATA CENTER OPERATIONS cont'd.**

**INFO 1401 – Introduction to Data Center Operations.** This course introduces all aspects of a data center and its physical infrastructure. Students learn about data center design, support, management, and maintenance while working in a server environment. The course includes daily operations of a data center, which include monitoring power requirements and safety regulations.

**INFO 1413 – Data Center Technician I.** This course introduces fundamental data center concepts for the technician. Concepts include infrastructure, working in a data center, and maintenance techniques. Topics include physical infrastructure, cabling and network infrastructure, power infrastructure, and cooling infrastructure.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.** Please go to Follett Bookstore's web site at [www.efollett.com](http://www.efollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.



## IT - PROTOTYPE DESIGN PROGRAM WORKFORCE INNOVATION DIVISION

Fort Omaha Campus – 30<sup>th</sup> and Sorensen - CAET Bldg

A prototype is a sample or model built to test a concept or process for a particular application that can be replicated or used to learn from. A prototype designer uses troubleshooting skills, creative thinking, and analytical skills to design the product. Students use hands-on application skills from product conception to completion.

### Year 1 Student 2018-2019

Course Dates	Course No.	Course Title	Credits	Times	Days
<b>September 4 – November 19, 2018</b>					
<b>Fall Quarter</b>					
	DIMA 1305	Concept Development	4.5	1:00p-3:20p	T, TH
	WIDX 1000	Intro to Prototype Design	4.5	1:00p-3:20p	M, W
<b>December 3, 2018 – February 25, 2019</b>					
<b>Winter Quarter</b>					
	BSAD 1000	Intro to Business	4.5	1:00p-3:20p	T, TH
	WIDX 1105	Digital Electronics	4.5	1:00p-3:20p	M, W
<b>March 7, 2019 – May 22, 2019</b>					
<b>Spring Quarter</b>					
	WIDX 1210	Prototyping with SolidWorks	4.5	1-3:20p	T, TH
	WIDX 1225	How to Build Almost Anything	4.5	1:00p-3:20p	M, W

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Course Dates	Course No.	Course Title	Credits	Times	Days
<b>September – November 2018</b>					
<b>Fall Quarter</b>					
	INFO 1011	Project Management	4.5	1:00p-3:20p	T, TH
	WIDX 2435	Basic Model Making	4.5	1:00p-3:20p	M, W
<b>December 2018 – February 2019</b>					
<b>Winter Quarter</b>					
	WIDX 2420	The Business of Innovation	4.5	1:00p-2:50p	M, T, W
	WIDX 2510	Robotic Concepts in Prototyping	4.5	1:00p-3:20p	M, T, TH
<b>March – May 2019</b>					
<b>Spring Quarter 11-weeks</b>					
	WIDX 2644	The Internet of Things	4.5	1:00p-3:20p	M, W
<b>TOTAL CREDIT HOURS</b>			<b>22.5/45 two years</b>		

All students must have a basic knowledge of computer technology.

### COURSE DESCRIPTIONS

**BSAD 1000 – Introduction to Business.** This course provides a survey of the structure and functions of the American business system together with an overview of business organization, finance, managerial control, production and distribution, personnel, the interdependence of business and government, and consumer business relations.

**DIMA 1305 – Concept Development.** This course provides a basic introduction to graphic design. It emphasizes creative problem-solving through the use of thumbnail and rough sketches.

**INFO 1011 – Project Management.** Project management is the discipline of defining and managing the vision, tasks, and resources required to complete a project. This course provides a deep dive into the project management process, resource management (time, money, and people), quality control, communications, and risk. Students complete projects utilizing project management software.

**WIDX 1000 – Introduction to Prototype Design.** Students explore the fundamentals of prototype design. Students learn the three integrated concepts of design thinking, business acumen, and low-volume production to ideate, prototype, and manufacture a human-centered product. A comparison of careers and occupations that require prototyping skills is also explored.

**WIDX 1105 – Digital Electronics in Prototyping.** Students are introduced to basic electronic components, digital devices, and basic circuits. This course emphasizes the concepts and principles through hands-on activities. Students develop the strategies necessary to create new electronic products. Topics include how to use basic equipment and basic electronics theory. Students also learn to read schematic diagrams, build circuit prototypes, test prototypes, and construct circuits using a variety of tools and circuit boards.

**WIDX 1210 – Prototyping with SolidWorks.** This course provides students with the tools to design, document, and simulate 3D models using SolidWorks. Students use a systematic approach to construct parts, assemblies, and drawings used to develop a real world model in the Prototype Design Lab.

**WIDX 1225 – How to Build Almost Anything.** Students learn basic concepts of prototype construction using tools and materials found in the Prototype Design Laboratory. Students take part in a laboratory project using stationary and power tools, electronics, and software. Material costs for projects are additional.

**WIDX 2420 – The Business of Innovation.** This course introduces students to the skills needed to innovate what they do as contributors in businesses striving to meet organizational goals. Concepts include ideation, prototyping, and production in support of business goals and organizational objectives.

**WIDX 2435 – Basic Model Making.** This course provides students with the information and skills to safely build and test models as a continuing and critical component of the design process. Students learn the importance of prototyping to the design process and explore the typical materials used by designers and how to work with them. Students create a series of iterations to meet emerging specification that happen in real-life projects.

**WIDX 2510 – Robotic Concepts in Prototyping.** Students are introduced to the design, use, and programming of robots. Topics include robot anatomy, sensing, degrees-of-freedom, the Cartesian coordinate system, lean manufacturing concepts, maintenance, as well as, the history and future of robotic concepts in modern technology. Students demonstrate safe practices when programming robots for a variety of automated tasks.

**WIDX 2644 – The Internet of Things.** This course introduces students to the network of physical objects which are embedded with electronics, software, sensors, and network connectivity, that enable these objects to collect and exchange data. Concepts include networking everyday objects, embedding electronics, data collection, economic implications, data analysis, and user analysis.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

Please go to Follett Bookstore's web site at [www.foollett.com](http://www.foollett.com) start typing in Metropolitan Community College. For classes held at the South Campus select South Omaha; for classes held at the Sarpy Center select Sarpy; for classes held at the Applied Technology Center or Fort Campus select Omaha; for classes at the Elkhorn Campus or Fremont Center select Elkhorn.

**\*Extra cost: project fees with each class run between \$10- \$50 plus books.**

## IT – INFORMATION TECHNOLOGY CYBER SECURITY PROGRAM

Fort Omaha Campus –30th and Fort – Center for Advanced and Emerging Technology

All business, industry, government, financial, or medical facilities, needs to safeguard information from potential security threats or vulnerabilities. The US Department of Labor predicts a 37% growth by 2022 in the number of information security analysts. This academy provides students with a basic knowledge of the cyber security field. Students get hands-on experience with MCC's Data Center servers and virtual machines. Upon completion, students may also sit for the CompTIA Security+ certification.

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November 2018</b>					
	INFO 1023	Networking Essentials	4.5	1:00 – 3:00	M, W
	INFO 1110	Windows Operating Systems I	4.5	1:00 – 3:00	T, TH
<b>December, 2018 – February, 2019</b>					
	INFO 2135	Network Infrastructure	4.5	1:00 – 3:00	M, W
	INFO 2805	Network and Information Security Basics	4.5	1:00 – 3:00	T, TH
<b>March – May, 2019</b>					
	INFO 2809	Information Systems, Forensics, Legal Topics	4.5	1:00 – 3:00	M, W
<b>TOTAL CREDIT HOURS</b>			<b>22.5</b>		

All students must have a basic knowledge of computer technology. All classes are Hybrid format. MCC's credit online, hybrid and web-enhanced courses are delivered via a Learning Management System called Blackboard. Blackboard is a website that provides a user-friendly way for teachers to place course materials, interactive and/or collaborative activities, and assessments online. Students have an intuitive way to interact with the course materials and with other students. With Blackboard, students can upload files to submit assignments, post messages to forums, take tests and more. Students can check their progress and grades at any time during the course.

### COURSE DESCRIPTIONS

**INFO 1023 – Networking Essentials** This course is the foundational networking course and prepares students for the advanced IT courses. The fundamentals of national and international networked communications, including standards, data communications, local area networking, wide area networking, virtual computing, and wireless communications are covered. WAN technologies and hardware as well as emerging data network technologies, mobile, and nomadic computing are also covered.

**INFO 1110 – Windows Operating System I** This course introduces students to the Microsoft Windows desktop operating system. Students learn fundamental concepts to effectively use and manage the Microsoft Windows desktop operating system. Many of the course objectives comply with industry standard certification exam objectives.

**INFO 2135 – Network Infrastructure** This course is for support professionals who need to know how to install, configure, maintain, and troubleshoot a Microsoft Windows Server 2012r2 environment. It gives new and experienced users alike the opportunity for in-depth study of the core networking technologies. The approach is to work through hands-on labs done on servers in a virtual environment provided to the students. The focus on network infrastructure involves, but is not limited to, configuring DNS, DHCP, routing, NAT, VPNs, and a basic understanding of TCP/IP v4 and v6.

INFORMATION TECHNOLOGY CYBER SECURITY PROGRAM cont'd.

**INFO 2805 – Network and Information Security Basics.** This course is a survey of network and information security. Topics include threat assessment, risk management, establishing and managing network security policy, user training, security models, objectives, architectures, and the investigative process. It covers information security policy, user training, security models, objectives, architectures, and the investigative process. It covers information security topics, such as constitutional issues, applicable laws, and right and rules of evidence. Students also discuss confidentiality, integrity, availability, accountability, and auditing.

**INFO 2809 – Information Systems, Forensics, and Legal Topics.** This course presents computer forensics concepts, tools, and data analysis. Students explore civil and common law issues that apply to information systems and gain practical experience in evidence detection and preservation as well as the concepts of establishing communications with company leadership and investigative agencies.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## Pre-APPRENTICESHIP PLUMBING

Fort Omaha Campus – 30th and Fort – Construction Education Center

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	PLBG 1010	Introduction to Plumbing*	6.5	1:00 – 3:00	MTWTH
<b>December, 2018 – February, 2019</b>					
	PLBG 1020	Basic Residential Plumbing*	9	1:00 – 3:00	MTWTH
	EMSP 1010	Heartsaver First Aid with CPR and AED (First three weeks)	1.0	12:30 – 3:10	F
	CNST 1110	Construction Safety (Next four weeks)	1.0	1:00 – 3:00	F
<b>March – May, 2019</b>					
	PLBG 1030	Basic Commercial Plumbing	9	1:00 – 3:00	MTWTH
<b>TOTAL CREDIT HOURS</b>			<b>26.5</b>		

**\*Courses must be passed to continue.**

#### Course Description:

**PLBG 1010 Introduction to Plumbing** - This course will introduce the students to the Plumbing Trade. The topics covered in this course will include plumbing history, plumbing tools, materials, safety, applicable math for the trade, work ethic, and careers in the industry.

**PLBG 1020 Basic Residential Plumbing** - Students continue to learn the residential side of plumbing, focusing mainly on wood structures, materials, and tools. The items discussed in this course direct attention on wood-framed structures such as single and multi-family dwellings along with the different types of materials and tools that are commonly used with these structures.

**PLBG 1030 Basic Commercial Plumbing** – Students study the commercial side of the plumbing trade. The focus is on metal stud framed, masonry, and concrete structures. The items discussed in the class direct attention to the metal, masonry, and concrete structures along with the different types of materials and tools that are common with these structures.

**CNST 1110 – Construction Safety** This course provides training outlined by the Occupational Safety and Health Administration (OSHA). This course supplies students with the recommended safety requirements for working in the construction field.

**ELTR 2900 – Special Topics** Students will be introduced to the benefits and application of SkillsUSA.

**EMSP 1010 – Heartsaver First Aid with CPR and AED** This course teaches rescuers to effectively identify and treat adult emergencies in the critical first minutes of injury or illness until emergency medical service personnel arrive. The course provides basic training solutions for first aid, adult CPR, and automated external defibrillator.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## THEATRE TECHNOLOGY

The Omaha Community Playhouse – 6915 Cass

### Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – November, 2018</b>					
	THEA 1110	Theatre Technology I	4	2:30 - 4:25	M, T, W, TH, F
	THEA 2981	Cooperative Study I	4	TBA	M, T, W, TH, F
<b>December, 2018 – February, 2019</b>					
	THEA 1120	Theatre Technology II	4	2:30 - 4:25	M, T, W, TH, F
	THEA 2982	Cooperative Study II	4	TBA	M, T, W, TH, F
<b>March – May, 2019</b>					
	THEA 1130	Theatre Technology III	4	2:30 - 4:25	M, T, W, TH, F
	THEA 2983	Cooperative Study III	4	TBA	M, T, W, TH, F
<b>TOTAL CREDIT HOURS</b>			<b>24</b>		

### Year 2 Student 2018 – 2019 (students who took 1<sup>st</sup> year in 2017)

Dates	Course	Title	Credits	Times	Scheduled Days
<b>June – July, 2018</b>					
	THEA 2150	Stage Rigging	4.5	5:15 - 9:45 MW	
<b>September – November, 2018</b>					
	THEA 2160	Principles of Stage Lighting	4.5	5:00 - 9:00	TBA
	THEA 2984	Cooperative Study IV	4	TBA	TBA
<b>December, 2018 – February, 2019</b>					
	THEA 2985	Cooperative Study V	4	TBA	TBA
<b>March – May, 2019</b>					
	THEA 2986	Cooperative Study VI	4	TBA	TBA
<b>TOTAL CREDIT HOURS</b>			<b>21</b>		

Theatre students need to interview with Apprenticeship Coordinator. Call 402-553-4890, ext 131 to set up that appointment.

1. After completing the courses listed in the Year 1 program, students will have satisfied the requirements for a Career Certificate in Theatre Technology (THETD).
2. By taking 13.5 credits of Gen Ed (ENGL, MATH, and Humanities), students will have satisfied the requirements for the Certificate of Achievement in Theatre Technology (THETC) after Year 2 of the program. Ideal times to take those Gen Ed courses would be summer quarter between Year 1 & 2 as well as the Fall quarter of Year 2.
3. As a reminder, by taking all the courses listed on the previous pages the student (apprentice) will receive a U.S. Department of Labor Certificate, an Omaha Playhouse Certification of Skills, the THETD Career Certificate and the THETC Certificate of Achievement if the Gen Ed requirements are met.

## THEATRE TECHNOLOGY cont'd.

### **COURSE DESCRIPTIONS**

**THEA 1110 – Theatre Technology I** Beginning and experienced students learn the basic arts and crafts of technical theatre in a professional theatre environment. The course includes overviews of the procedure and safety issues and practices set construction, lighting, and costume. It is a prerequisite for admission to the certified Theatre Technology Apprentice program offered through the Omaha Community Playhouse.

**THEA 1120 – Theatre Technology II** *Prerequisite: THEA 1110* Students continue work begun in THEA 1110 with focus on real work situations and experiences. Topics include overview and practice in properties, scenic painting, and sound design and support. Students also begin work in their chosen areas of emphasis. These areas include sound, lights, construction, scenic painting, costume, props, stage management, box office, and house management.

**THEA 1130 – Theatre Technology III** *Prerequisite: THEA 1120* Students continue the work begun in THEA 1110 and 1120 with focus on real work situations and experiences, continuing their rotation within their selected artistic areas of emphasis. These areas include sound, lights, construction, scenic painting, costume, props, stage management, box office and house management. Students begin the process of career development through the creation of professional materials, such as resumes and portfolios.

**THEA 2150 – Stage Rigging** *Prerequisite: THEA 1110* The course builds on concepts and skills introduced in Theatre Technology I with specific emphasis on stage rigging. It covers rigging topics, including repair and maintenance, motorized rigging, trussing, and special applications in the lecture portion and reinforces them during labs under non-production conditions. Students apply fundamental skills in the installation of flying scenery, as well as use of stage rigging equipment under show conditions.

**THEA 2160 – Principles of Stage Lighting** *Prerequisite: THEA 1110* This course builds on concepts and skills introduced in THEA 1110 with specific emphasis on stage lighting. It covers lighting topics, including wiring and repair of electrical cables, basic color theory, and refraction principles in the lecture portion and reinforces them during labs under non-production conditions. Students apply fundamental skills in light console operation and temporary installations of lighting systems under show conditions.

**THEA 2981, 2982, 2983, 2984, 2985, 2986 – Cooperative Study I, II, III, IV, V VI** The Cooperative Study courses are special cooperative education experiences with the College and the Omaha Community Playhouse. The student works a minimum of 165 hours per quarter in conjunction with the Playhouse and its staff. Students who successfully complete this course sequence receive an apprentice certificate.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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# UTILITY LINE TECHNICIAN

Applied Technology Center – 10407 State

## Year 1 Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – October, 2018 (five weeks)</b>					
	UTIL 1030	Ropes, Rigging, and Safety	4.5	12:30 – 4:30	M, TH
<b>October – November, 2018 (five weeks)</b>					
	UTIL 1020	Electricity	5.5	12:30 – 4:30	M, TH,
<b>December, 2018 – January, 2019 (five weeks)</b>					
	UTIL 1240	Underground Distribution 1	5.5	12:30 – 4:30	M, TH
<b>January – February, 2019 (five weeks)</b>					
	UTIL 2020	Transformer Theory	5.5	12:30 – 4:30	M, TH
<b>March – May, 2019</b>					
	UTIL 2240	Underground Distribution 2	4.5	12:30 – 4:30	M, TH
		<b>TOTAL CREDIT HOURS</b>	<b>25.5</b>		

**UTIL 1030 Ropes, Rigging, and Safety** – This is a hybrid course.

This course acquaints students with tools, equipment, basic rope knots, and splices, as well as the proper operation of utility equipment.

**UTIL 1020 Electricity I** – This is a hybrid course.

Students learn about electricity theory, Ohm's Law, series circuits, parallel circuits, and series/parallel circuits, including direct current and alternating current. This course also covers inductance, capacitance, and single-phase transformers. Math skills used in completing circuit computations are also taught.

**UTIL 1240 Underground Distribution Systems I** – This is a hybrid course.

This course introduces students to URD systems, underground cables, and apparatus. Students learn various termination techniques and construct a model URD system in the lab.

**UTIL 2020 Transformer Theory** – This is a hybrid course.

This course includes principles of electromagnetic induction, use and application of transformers, banking of transformers, calculating transformer loads, maintenance, testing, and proper connection of transformers.

**UTIL 2240 Underground Distribution Systems II** – This is a hybrid course.

This course emphasizes construction, maintenance, and troubleshooting of underground distribution systems, including trenching and termination and primary and secondary cables.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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## WELDING AND FABRICATION TECHNOLOGY

Fort Omaha Campus – 30th and Fort – Construction Education Center

### Student 2018 - 2019

Dates	Course	Title	Credits	Times	Scheduled Days
<b>September – October, 2018</b>					
	WELD 1100	Industrial Cutting Processes	3	1:00-3:10	M, T, W, TH
<b>October - November, 2018</b>					
	WELD 1300	Oxy Fuel Welding	3	1:00-3:10	M, T, W, TH
<b>December, 2018 – January, 2019</b>					
	WELD 1200	Gas Metal Arc Welding (MIG) - Steel I	3	1:00-3:10	M, T, W, TH
<b>January – February, 2019</b>					
	WELD 1400	Gas Tungsten Arc Welding (GTAW) - Steel 1	3	1:00-3:10	M, T, W, TH
<b>December – February, 2019</b>					
	WELD 1910	Special Topics in Welding-Skills USA Training I	1	1:15-2:45	F
<b>March – April, 2019</b>					
	WELD 1500	Shielded Metal Arc Welding (SMAW)	3	1:00-3:10	M, T, W, TH
<b>April - May, 2019</b>					
	WELD 1700	Introductory Fabrication	3	1:00-3:10	M, T, W, TH
<b>TOTAL CREDIT HOURS</b>			<b>19</b>		

Second year options are available for students wishing to continue.

**Tools and Materials:** Students provide work boots and safety glasses. MCC will provide, on loan, most of the appropriate equipment and tools for each course. Students will be held responsible for lost and/or broken equipment and tools.

**Students must abide by the MCC Calendar. This has special meaning for Seniors since they may have to continue attending classes beyond their graduation date or beyond their last day of class at their high school.**

### COURSE DESCRIPTIONS

**WELD 1100 - Industrial Cutting Processes** Students gain a working knowledge of oxy-fuel cutting (manual and machine), plasma cutting (manual and machine), and air carbon arc and plasma gouging.

**WELD 1200 - Gas Metal Arc Welding (MIG) - Steel I** This course uses the theory and techniques in basic gas metal arc welding to produce sound fillet welds and sound groove welds in both the flat and vertical positions. Students weld using short-circuit and spray modes of metal transfer.

**WELD 1300 - Oxy-Acetylene Welding** This course covers the basic skills and use of equipment necessary to be knowledgeable in this discipline. Students learn to weld various joint types in all positions with steel and braze filler materials. This is an excellent preparatory class for TIG welding classes.

**WELD 1400 - Gas Tungsten Arc Welding (TIG) - Steel I** This course emphasizes the theory and techniques used in basic gas tungsten arc welding of steel fillet and groove welds in the flat and vertical positions. It covers the equipment and its proper adjustment and also includes the many types of tungsten electrodes and the use of different gases.

## **Welding cont'd.**

**WELD 1500 - Shielded Metal Arc Welding (Stick) – Flat** This course covers fundamental understanding and skills in the safe use of arc welding equipment. Typical operations include striking the arc, making fillet welds in the flat position, and making groove welds in the flat position. It uses a variety of methods to examine the weldments such as visual inspection, fillet weld break tests, and root/face bend test specimens.

**WELD 1700 - Introductory Fabrication** *Prerequisite: WELD 1100, WELD 1200,* This is a basic course in the fabrication of projects. It explores the use of layout tools and project drawings or sketches and emphasizes actual vs. estimated time and cost considerations.

**WELD 1910 - Special Topics in Welding-Skills USA Training I** Required course for all students. This course is designed for first year students to learn more about industry standards and help those who have signed up to participate in Skills USA state/national competition.

**Books Needed: \*Books are subject to change, dependent upon the course criteria and without prior notice.**

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