

Career Studies Certificates

AREA: Construction Technology

PURPOSE: To introduce students to major practical aspects of construction technology

PROGRAM REQUIREMENTS:

Course#	Title	Credits
ARC 130	Introduction to Materials and Methods of Construction	3
BLD 231	Construction Estimating I ¹	3
CAD 165	Architectural Blueprint Reading	3
	Approved elective	3
	Total	12

¹Prerequisites for BLD 231 are CAD 165 and ARC 130.

AREA: Drafting

PURPOSE: To enable students to develop drafting graphics skills related to architecture, machine design, and using specialized computer software in the drafting field

PROGRAM REQUIREMENTS:

Course#	Title	Credits
ARC 130	Introduction to Materials and Methods of Construction	3
ARC 221	Architectural CAD Applications Software I	3
ARC 222	Architectural CAD Applications Software II	3
CAD 241	Parametric Solid Modeling I	3
CAD 242	Parametric Solid Modeling II	3
EGR 110	Engineering Graphics ¹	3
MEC 113	Materials and Processing of Industry	3
	Total	21

¹Prerequisite for ARC 221, CAD241

AREA: Basic Electrical Technician

PURPOSE: To expose students to theory and applications related to related electrical systems

OCCUPATIONAL OBJECTIVES: To prepare students for entry-level positions in the electrical field

This certificate can be completed in two semesters if the following conditions are met:

- Students are willing to enroll in day and evening classes
- Students must take classes in the semesters they are listed

PROGRAM REQUIREMENTS:

Course#	Title	Credits
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Fall Semester

SDV 101/100	Introduction to the Trades Professions	1
ELE 133	Practical Electricity I	3
ELE 135	National Electrical Code Residential	3

Spring Semester

ELE 134	Practical Electricity II	3
ELE 137	National Electrical Code Industrial	3
ELE 190	Coordinated Internship or Technical Elective (WEL, AIR, ELE or ITE 115)	3
	Total	16

Career Studies Certificates

AREA: HVAC

PURPOSE: To expose students to theory and application related to HVAC

OCCUPATIONAL OBJECTIVES: To prepare students for entry-level positions in heating, ventilation and air conditioning

This certificate can be completed in two semesters if the following conditions are met:

- Students are willing to enroll in day and evening classes
- Students must take classes in the semesters they are listed

PROGRAM REQUIREMENTS:

Course#	Title	Credits
First Semester (Fall)		
AIR 121	Air Conditioning and Refrigeration I	3
AIR 134	Circuits and Controls	3
ELE 133	Practical Electricity I	3
Second Semester (Spring)		
AIR 122	Air Conditioning and Refrigeration II	3
AIR 154	Heating Systems I	3
AIR 155	Heating Systems II	3
	Total	18

AREA: Industrial Design

PURPOSE: To introduce students to the principles of sound industrial design, including related mathematics and concepts

PROGRAM REQUIREMENTS:

Course#	Title	Credits
EGR 135	Statics for Engineering Technology ¹	3
EGR 136	Strength of Materials for Engineering Technology ²	3
EGR 247	Mechanics Laboratory ³	1
MEC 113	Materials and Processes of Industry	3
or		
ARC 130	Materials and Methods of Construction	
MTH 115	Technical Mathematics I	3
MTH 116	Technical Mathematics II	3
	Total	16

¹Prerequisite for EGR 135 is MTH 115.

²Prerequisites for EGR 136 are EGR 135 and MTH 116.

³Prerequisite for EGR 247 is EGR 136.

Career Studies Certificates

AREA: Industrial Maintenance Technician

PURPOSE: To expose students to theory and application related to the maintenance of heating, air conditioning, electrical systems and motors and welding

OCCUPATIONAL OBJECTIVES: To prepare students for entry-level positions in industrial maintenance

This certificate can be completed in two semesters if the following conditions are met:

- Students are willing to enroll in day and evening classes
- Students must take classes in the semesters they are listed

PROGRAM REQUIREMENTS:

Course#	Title	Credits
Fall Semester		
AIR 121	Air Conditioning and Refrigeration I	3
ELE 133	Practical Electricity I	3
ELE 159	Electrical Motors	3
WEL 120	Introduction to Welding	3
CAD 175	Schematics and Mechanical Diagrams	2

Spring Semester

ELE 134	Practical Electricity II	3
ELE 156	Electrical Controls Systems	3
ELE 126	Electricity and Shop Power Distribution	2
Total		22

AREA: Sustainability and Green Construction

PURPOSE: This career studies certificate (CSC) provides instruction in sustainable building materials, construction methods, and design along with instruction in solar energy usage especially photovoltaic grid direct systems. Successful students completing this curriculum will be prepared to take both the L.E.E.D (Leadership in Energy and Environmental Design) entry level certification test and the NABCEP (North American Board of Certified Energy Practitioners) entry level certification test. This CSC, along with the two certifications, will give students a substantial edge when applying for jobs with architectural firms, engineering firms, and construction companies involved with green building design and construction. This CSC is ideally suited for students who have previous technical skills/degrees and want to update their education or are currently in a degree program and want to have additional knowledge and certification to target the green jobs market.

OCCUPATIONAL OBJECTIVES:

Engineering Technician, Engineers Aide, Civil Engineering Technician, Energy Technician, Solar Systems Installer or any occupation that has a new green/sustainable focus including technical sales and project management.

PROGRAM REQUIREMENTS:

Course#	Title	Credits
MTH 115	Technical Math I	3
ARC 130	Materials and Methods of Construction	3
CIV 295	Sustainable Building and Site Design	3
CIV 295B	Solar Energy Fundamentals	3
CIV 295C	Solar Energy Installations	2
CIV 295D	Solar Energy Installation Lab	1
	Approved Technical Elective	1-3
Total		16-18

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