MON VALLEY CAREER & TECHNOLOGY CENTER

Electrical Power Technology

CIP 46.0399

PROGRAM OF STUDY

CURRICULUM MAPPING
WITH
CERTIFICATION OUTCOMES

Mon Valley Career & Technology Center prepares all students to attain their fullest potential for employment, to be life long learners, and to be productive and responsible members of an ever-changing society.

5 Guttman Avenue • Charleroi, PA 15022 • p: 724-489-9581 • f: 724-489-0711 • www.monvalleyctc.org

Objective:

This document has been prepared to project student learning outcomes in a linear fashion over the approved 3-year program of study.

Overview:

This document provides a Pennsylvania Department of Education and Mon Valley CTC Occupational Advisory Committee approved list of tasks and learning objectives that are broken out into a linear form for a better understanding of learning outcomes over a three year period within each program. It also serves as curriculum map as students work towards completing knowledge and skill-based tasks in pursuit of industry credentials. The end goal within each program is to work towards completing all tasks at proficient and advanced levels, earning multiple (stackable) industry credentials, and successfully complete the NOCTI exam. Student's progression and completion of task(s) and industry certification(s) may vary.

Navigation:

Unit / Task # - This column indicates the Pennsylvania Department of Education or Mon Valley CTC local unit or task numbers given to each task within a given duty area.

Task Description – This column explains what knowledge-based or skill-based task that a student is working on for completion.

Level / Marking Period – This column indicates the learning level and timeframe at which the specific task(s) will be introduced to the student(s). Note that some tasks may be taught and completed individually while others may be taught in groups. (i.e. 1.1 would signify a first year student being introduced to this task(s) in the first marking period, 2.3 would signify a second year student being introduced to this task(s) in third marking period, etc.)

Industry Certification:

Students successfully progressing through the curriculum and tasks have opportunity to test for industry credentials. Industry credentials are listed on the right side of the document at the appropriate time within the curriculum that a student would be fully prepared to test for that certification.

MON VALLEY CAREER & TECHNOLOGY CENTER

5 Guttman Avenue • Charleroi, PA 15022 • p: 724-489-9581 • f: 724-489-0711 • www.monvalleyctc.org

Program of Study Mapping with Certification Outcomes

Electrical and Power Transmission Installers, Other

Classification of Industrial Programs 46.0399

Unit / Task #	Task Description	Level / Marking Period
101	Inspect and use personal protective equipment	1.1
102	Identify causes of job site accidents.	1.1
105	Properly don fall protection	1.1
106	Identify four classes of fire extinguishers	1.1
109	Inspect and use ladders	1.1
201	Use screwdrivers.	1.1
1301	Identify the purpose of the National Electrical Code (NEC).	1.1
1305	Identify the code cycle of the National Electrical Code (NEC).	1.1
107	Confirm circuits are de-energized before working on them.	1.2
108	Perform lockout/tagout.	1.2
111	Identify Arc-flash hazards and protection	1.2
202	Use pliers.	1.2
203	Use keyhole/drywall saw.	1.2
206	Use wire strippers.	1.2
207	Use wire cutters.	1.2
210	Use a hammer.	1.2
1103	Use a plug-in circuit tester.	1.2
1302	Use Chapter 9 Tables.	1.2
1303	Use the NEC as a reference to questions and competencies that students perform for all electrical installations.	1.2

Certification test for:
Ladder Certifications

Certification test for:
SP/2 - Construction

5 Guttman Avenue • Charleroi, PA 15022 • p: 724-489-9581 • f: 724-489-0711 • www.monvalleyctc.org

1304	Identify the publisher of the National Electrical Code (NEC).	1.2
1306	Identify NFPA70E (Arc Flash).	1.2
110	Complete jobsite hazard analysis form	1.3
205	Use a tape measure.	1.3
208	Use utility knife.	1.3
214	Use adjustable or non adjustable wrenches.	1.3
601	Install non-metallic (NM) Cable for connection to an electrical device.	1.3
701	Install a duplex receptacle.	1.3
702	Install a single pole switch.	1.3
703	Install a 3-way switch.	1.3
1104	Use a clamp-on ammeter.	1.3
209	Use torpedo level.	1.4
215	Use ratchet and sockets.	1.4
216	Use nut drivers.	1.4
401	Identify types of blueprint plans.	1.4
402	Identify blueprint symbols.	1.4
403	Interpret blueprint plans.	1.4
405	Develop electrical details on a residential blueprint.	1.4
406	Use a measuring tool to scale.	1.4
704	Install a 4-way switch.	1.4
705	Install a split-wired duplex receptacle.	1.4
1108	Apply Ohm's/Watt's Law calculations to electrical applications.	1.4
213	Use a roto-split.	2.1
306	Use a drill.	2.1
310	Use oscillating multi purpose tool.	2.1
311	Use impact driver.	2.1
602	Install metal-clad cable (MC).	2.1

MON VALLEY CAREER & TECHNOLOGY CENTER

Program of Study Mapping with Certification Outcomes

5 Guttman Avenue • Charleroi, PA 15022 • p: 724-489-9581 • f: 724-489-0711 • www.monvalleyctc.org

707	Install an Arc-Fault Circuit Interrupter (AFCI).	2.1
904	Identify flexible raceway.	2.1
302	Use electric hammer drill.	2.2
501	Identify, select and install various types of anchors and supports.	2.2
606	RESERVED	2.2
609	Identify telecommunications cable types.	2.2
706	Install a Ground Fault Circuit Interrupter (GFCI) Receptacle.	2.2
801	Install surface-mounted lighting fixture.	2.2
802	Install recessed lighting fixtures.	2.2
803	Install a ceiling fan.	2.2
1201	Install an overhead service.	2.2
1202	Identify parts of an underground service.	2.2
610	Terminate an RJ45 connector.	2.3
709	Install a range receptacle.	2.3
804	Install LED lighting.	2.3
805	Identify IC and non-IC recessed lighting fixtures.	2.3
1107	Use a network cable tester.	2.3
611	Install SE cable.	2.4
710	Install a dryer receptacle.	2.4
1101	Use a multimeter.	2.4
1102	Use a continuity tester.	2.4
1106	Use a circuit tracer.	2.4
204	Use hydraulic knockout/punch tool.	3.1
212	Use a hacksaw.	3.1
303	Use reciprocating saw.	3.1
304	Use portable hand-held band saw.	3.1
902	Install Poly-Vinyl Chloride conduit (PVC).	3.1

Certification test for: OSHA

Certification test for: NCCER Electrical

5 Guttman Avenue • Charleroi, PA 15022 • p: 724-489-9581 • f: 724-489-0711 • www.monvalleyctc.org

903	Identify surface metal and non-metal raceways (Wiremold).	3.1
1001	Install a hard wired smoke detector.	3.1
1002	Install door-bell system.	3.1
1003	Trim out electrical devices.	3.1
1209	Identify types of safety disconnect switches.	3.1
1210	Terminate a service panel/load center.	3.1
211	Use a conduit reamer.	3.2
605	Terminate a coaxial cable.	3.2
901	Install Electrical Metallic Tubing (EMT).	3.2
908	Bend a stub 90°.	3.2
909	Bend an offset.	3.2
910	Bend a back to back 90°.	3.2
911	Cut, ream and deburr raceway systems.	3.2
1401	Identify renewable energy sources.	3.2
1402	Identify procedures for installing a wind turbine system.	3.2
1404	Identify procedures for installing a solar energy ~~source~~ system.	3.2
708	Install a time control switch.	3.3
1004	Install an occupancy sensor.	3.3
1005	Install a photocell.	3.3
1407	Evaluate the demand and consumption of electrical energy.	3.3
912	Install conductors in a raceway system.	3.4
MVCTC	Task Remediation / NOCTI Test Preparation	3.4