



**Program of Study Scope & Sequence
with
Certification Outcomes**

Powerline/Lineworker

CIP# 46.0303

Task #	Task Description	Level/ Marking Pd 46.0303 Powerline	Career Path CIP/Soc 47-2061.00 Tree Trimmer	Career Path CIP/Soc 49-3023.00 Sub Station Electrician	Career Path CIP/Soc 51-8013.00 Power Plant Operator	Certification to test for
100	SAFETY					
101	Maintain a safe work environment	1,2,3/1,2,3,4	X	X	X	OSHA 10
102	Demonstrate safe work procedures	1,2,3/1,2,3,4	X	X	X	OSHA 10 Ladder Safety
103	Perform safety inspection and safety maintenance of equipment and vehicles	2,3/1,2,4	X	X	X	OSHA 10
104	Demonstrate appropriate and safe use of tools	1,2,3/1,2,3,4	X	X	X	OSHA 10 Ladder Safety
105	Perform Pole Top Rescue	3/3				
200	JOB SITE WORK					
201	Perform Job Site planning activities	2,3/1,2,4	X	X		
202	Determine job site requirements	1,2,3/1,2,3,4	X	X		
203	Perform job site protection activities for worker and public safety	1,2,3/1,2,4	X	X		
204	Perform proper tying of various rope knots	1,2,3/1,2,4	X	X		
300	CLIMBING SKILLS					
301	Demonstrate proper use and inspection of climbing gear	1,2,3/1,2,4	X			

302	Perform basic climbing skills of poles and towers	1,2,3/1,2,4	X			
303	Demonstrate proper maintenance of climbing tools and equipment	1,2,3/1,2,4	X			
400	POLE FRAMING AND CONSTRUCTION SPECIFICATIONS					
401	Recognize, load transport, and use pole hardware and materials	2,3/1,2,4				
402	Demonstrate pole framing on the ground	2,3/2,4				
403	Demonstrate installing pole and equipment grounds	3/4				
404	Perform installing of guy assemblies, cross arms, and insulators	2,3/1,2,4				
405	Demonstrate proper application of attaching a tying-in conductor	2,3/2,4				
500	EQUIPMENT OPERATION					
501	Safely perform traffic control and emergency procedures	3/4	X			OSHA 10
502	Safely operate digger-derrick vehicle	2,3/1,2,4				
503	Demonstrate safe working operation of an aerial platform	2,3/1,2,4	X			
600	SETTING AND REPLACING POLES					
601	Demonstrate worksite recognition and safe work practices	1,2,3/1,2,4	X			OSHA 10 Ladder Safety
602	Perform proper vehicle placement and grounding methods	3/4,4				
603	Perform proper rigging and setting of poles with a Digger Derick	2,3/1,2,4				
604	Utilize temporary pole supports	1/4				
605	Hand dig pole holes	1/4				

606	Set pole by hand using the Dead-Man method	1/4				
607	Set pole by hand using the Gin method	1/4				
700	TRANSFORMER INSTALLATION					
701	Install and properly wire transformers	3/3,4		X		
702	Maintain and troubleshoot transformers and transformer connections	3/3,4		X		
703	Demonstrate proper transformer and sizing applications	3/3,4		X		
800	SERVICE INSTALLATION AND METERING					
801	Perform grounding and safe work procedures	3/3,4		X		OSHA 10
802	Explain meter application and proper meter reading	3/3		X		
900	CONDUCTOR INSTALLATION AND REPAIR					
901	Perform splicing, stringing conductors, dead-ending, and operate hoists	2,3/1,2,4				
902	Safely tie in conductor, carry out hotline re-conductoring, and complete sag charts and tables	2,3/1,2,4				
903	Safely perform grounding practices	3/3,4				OSHA 10
904	Demonstrate safe work practices for conductor installation and repair	2,3/1,2,4				
1000	Rubber gloving methods					
1001	Demonstrate proper use and care of rubber gloves and sleeves	3/3,4		X		
1002	Demonstrate proper bucket truck operation while working on energized lines	3/4				
1100	UNDERGROUND DISTRIBUTION					

1101	Identify and demonstrate knowledge of underground distribution equipment and safe practices while trenching	2,3/1,2,4		X		
1102	Demonstrate knowledge of UD systems and installation	2,3/1,2,4		X		
1103	Demonstrate installation of a padmount transformer, troubleshooting, and fault location	2,3/3,4		X		
1200	SUBSTATIONS AND VOLTAGE REGULATION					
1201	Demonstrate knowledge of substation components and their functions (e.g., voltage regulators, capacitors	3/3,4		X		
1202	Demonstrate knowledge of substation design for various applications	3/3		X		
1203	Follow safe practices when performing work in substations(including use of proper PPE)	3/3		X		
1300	FUSING AND SYSTEM COORDINATION					
1301	Demonstrate knowledge of system/fault surges, and over-current/over-voltage protection components(e.g., regulators, recloser, capacitors, conductors)	3/3		X		
1302	Demonstrate knowledge of oil-circuit reclosers	3/3,4		X		
1303	Demonstrate knowledge of system application and fusing coordination	3/3		X		
1400	MAINTENANCE OF LINE EQUIPMENT AND TOOLS					
1401	Inspect and maintain tools(including hand tools and hot tools)	2,3/1,2,4		X		
1402	Inspect and maintain equipment components(e.g., regulators, recloser, capacitors, conductors)	3/3,4		X		
1500	MAINTAINING RECORDS AND DOCUMENTATION					
1501	Maintain daily vehicle inspection records	3/3	X	X		
1502	Maintain personal protective equipment (PPE)inspection	3/3	X	X		

	records					
1503	Maintain special equipment and accident reports	3/3	X	X		
1600	PROBLEM SOLVING AND TROUBLESHOOTING					
1601	Analyze situations and information, consider alternate solutions	3/3	X	X		
1602	Apply rules and principles to a process to draw conclusions	2,3/1,2,3,4	X	X		
1700	BASIC WIRING					
1701	Cut and properly strip a piece of non-Metallic sheathed cable	1,2/3		X		
1702	Install a single pole switch	1,2/3		X		
1703	Make a wire nut connection	1,2/3		X		
1704	Install a light fixture	1,2/3		X		
1705	Install a three-way switch	1,2/3		X		
1706	Install a four-way switch	1,2/3		X		
1707	Install a duplex receptacle	1,2/3		X		
1708	Wire a switch controlled receptacle	1,2/3		X		
1709	Wire a loop feed	1,2/3		X		
1710	Wire a GFCI receptacle	1,2/3		X		
1711	Wire 120 volt smoke alarms	1,2/3		X		
1800	CONDUIT BENDING					
1801	Bend various sizes of 90 degree stub-ups	1,2/3		X		
1802	Bend various sizes of offsets	1,2/3		X		

1803	Bend various sizes of back-to-back bends	1,2/3		X		
1804	Bend various sizes of three bend saddles	1,2/3		X		
1805	Bend various sizes of four bend saddles	1,2/3		X		
1900	LASHING					
1901	Identify the various parts of a lashing machine	1,2/1,2,4				
1902	Load lashing wire into a lashing machine	1,2/1,2,4				
1903	Demonstrate proper techniques for hanging and moving a lashing machine onto steel strand	1,2/1,2,4				
1904	Hang lashing rollers onto steel strand	1,2/1,2,4				
1905	Demonstrate the setup and installation of the stationary reel method	1,2/1,2,4				
1906	Demonstrate the setup and installation of the moving reel method	1,2/1,2,4				
2000	COPPER NETWORKING					
2100	FIBER-OPTICS					
2200	Electrical Theory					
2201	Describe and identify electrical components in a circuit.	1,2,3/1,2,3		X		
2202	Use Ohm's Law to make calculations in a circuit.	1,2,3/1,2,3		X		
2203	Describe a series circuit and make calculations with given values.	1,2,3/1,2,3		X		
2204	Describe a parallel circuit and make calculations with given values.	1,2,3/1,2,3		X		
2205	Describe a combination circuit and make calculations with given values.	1,2,3/1,2,3		X		