

SKILL SETS



**COMPETENCY ANALYSIS PROFILE
CONSTRUCTION & MAINTENACE ELECTRICIAN
ON-THE-JOB TRAINING STANDARDS**

←SKILLS→

PROTECT SELF AND OTHERS U 1.0	Identify, interpret and apply applicable Acts, regulations, codes and directives 1.01	Recognize, assess and control hazards and hazardous conditions, equipment and material 1 . 0 2	Identify and use fire extinguishers and fire fighting equipment 1.03	Perform housekeeping duties to ensure a safe working environment 1.04	Practice first aid in emergency situations 1.05
	Select, wear, adjust, use and maintain personal protective apparel and equipment 1.06	Perform lock-out, tagging and hold-off procedures 1.07			
READ, INTERPRET AND REVISE SCHEMATIC DRAWINGS AND DOCUMENTATION U 2.0	Identify, read and interpret architectural drawings and specifications 2.01	Create, maintain and modify drawings and sketches 2.02	Identify, read and interpret mechanical drawings and specifications 2.03	Identify, read and interpret power distribution drawings and specifications 2.03	Identify, read and interpret instrumentation and communication drawings and specifications 2.05
	Identify, read and interpret electrical drawings and specifications 2.06	Identify, read and interpret relay, solid state and logic drawings and specifications 2.07			
SELECT, MAINTAIN AND USE TOOLS AND EQUIPMENT U3.0	Select, maintain, use and repair hand tools 3.01	Select, maintain, use and repair electric power tools and accessories 3 02	Select, use, inspect and maintain rigging and hoisting equipment 3.03	Select, inspect, and maintain scaffolds, lifting devices and elevating platforms 3.04	Assemble, erect and locate, scaffolds, lifting devices and elevating platforms 3 05
	Dismantle and store scaffolds, lifting devices and elevating platforms 3.06	Select and perform trade specific oxy-fuel cutting welding procedures 3 07	Schedule electrical job site materials and equipment requirements 3.08		

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INSTALL, MAINTAIN AND REPAIR WIRING SYSTEMS U4.0	Select and install busway systems for rural, institutional, commercial and industrial installations	Maintain and repair busway systems for rural, institutional, commercial and industrial installations	Select, layout and install branch circuit wiring for power and lighting branch circuits 4.03	Troubleshoot branch circuit wiring for power and lighting branch 4.04	Select, layout and install cable trays for power, data and communication cable wiring systems 4.05
	Select, lay out and install feeder cables for single and multi conductor cables, metallic and non-metallic cables	Select, lay out and install rigid Poly Vinyl Chloride (PVC) 4.07	Select, lay out and install electric heating systems 4.08	Select, lay out and install wiring for hazardous locations 4.09	Select, lay out and install overhead distribution systems 4.10
	Select, lay out and install underground distribution systems 4.11				
SELECT, INSTALL, MAINTAIN AND TROUBLESHOOT POWER DISTRIBUTION EQUIPMENT SYSTEMS U5.0	Lay out and install secondary services 5.01	Maintain secondary services 5.02	Select and install high voltage protection and control devices 5.03	Maintain high voltage protection and control devices 5.04	Calculate requirements for secondary service loads, fuses and feeders 5.05
	Select and install oil and dry type distribution transformers 5.06	Test and maintain oil and dry type distribution transformers 5.07	Select and layout power distribution panels 5.08	Test and maintain power distribution panels 5.09	Lay out and install ground fault circuit interrupters 5.10
	Test and maintain ground fault circuit interrupters 5.11	Layout and install power factor correction equipment 5.12	Test and maintain power factor correction equipment 5.13	Install low voltage power distribution systems 5.14	Troubleshoot and maintain low voltage power distribution systems 5.15
	Install direct current (DC) power distribution systems 5.16	Troubleshoot and maintain direct current (DC) power distribution systems 5.17	Select and install AC/DC protective devices 5.18	Troubleshoot and maintain AC?DC protective devices 5.19	

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SELECT, INSTALL, MAINTAIN AND TROUBLESHOOT LIGHTING SYSTEMS U6.0	Layout and install incandescent lighting 6.01	Maintain and troubleshoot incandescent lighting 6.02	Layout and install fluorescent lighting 6.03	Maintain and troubleshoot fluorescent lighting 6.04	Layout and install high intensity discharge lighting 6.05
	Maintain and troubleshoot high intensity discharge lighting 6.06	Layout and install light dimming and control systems 6.07	Maintain and troubleshoot light dimming and control systems 6.08	Layout, install and maintain exit and emergency lighting 6.09	Measure, record and report illumination levels 6.10
INSTALL, MAINTAIN AND TROUBLESHOOT ROTATING EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS U7.0	Inspect, maintain and troubleshoot brush assemblies, slip rings and commutators 7.01	Inspect, maintain and troubleshoot DC motors and generators 7.02	Inspect, maintain and troubleshoot AC motors and generators 7.03	Install and test mechanical, electrical alignment and auxiliary protective equipment 7.04	Maintain and troubleshoot mechanical, electrical alignment and auxiliary protective equipment 7.05
	Maintain and troubleshoot lubrication systems 7.06	Maintain and troubleshoot braking and clutch systems 7.07	Start-up and shut-down rotating equipment 7.08	Select and install relays, solid state devices and controls 7.09	Maintain relays, solid state devices and controls 7.10
	Select and install protective devices 7.11	Maintain protective devices 7.12	Select, assemble and wire control panels, enclosures and control devices 7.13	Select and install field devices such as mechanical/remote field devices 7.14	
INSTALL, MAINTAIN AND TROUBLESHOOT MOTOR DRIVES AND ASSOCIATED CONTROL SYSTEMS U8.0	Install, maintain and troubleshoot DC constant voltage drives 8.01	Install, maintain and troubleshoot solid state and variable DC drives 8.02	Install, maintain and troubleshoot AC constant voltage drives 8.03	Install, maintain and troubleshoot solid state and variable AC drives 8.04	Install, maintain and troubleshoot computer based interface systems 8.05

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	Install, maintain and troubleshoot programmable logic controller systems 8 06	Install, maintain and troubleshoot computerized numerical control systems 8.07	Install, maintain and troubleshoot robotic systems 8.08		
INSTALL, MAINTAIN AND TROUBLESHOOT STANB-BY POWER SYSTEMS AND ASSOCIATED EQUIPMENT U9.0	Layout, install and maintain uninterruptible power supply systems 9.01	Layout and install battery stand-by systems 9.02	Maintain and troubleshoot battery stand-by systems 9.03	Layout and install stand-by generation equipment 9.04	
INSTALL, MAINTAIN AND TROUBLESHOOT COMMUNICATIONS SYSTEMS U10.0	Install and test fibre optic cabling and terminations 10.01	Select, install and terminate test data and communication cables 10.02	Maintain, repair and test data and communication cables 10.03	Install, maintain and troubleshoot fire alarm systems 10.04	Install said test communication system components 10.05
	Install, maintain and troubleshoot audio-visual systems 10.06	Determine layout, install and test patient care systems 10.07	Determine layout, install and test security systems 10.08	Determine layout, install and test paging systems 10.09	Determine layout, install a clock system 10.10
	Test and verify the operation of a clock system 10.11	Determine layout, installing, testing and verifying the operation of automation systems 10.12			
SELECT, MAINTAIN AND OPERATE TEST AND MEASURING EQUIPMENT U11.0	Layout and install power and energy metering equipment 11.01	Select, operate and maintain analog and digital multimeters 11.02	Select, operate and maintain electronic test equipment 11.03	Select, operate and maintain insulation testers 11.04	Select, operate and maintain oscilloscopes 11.05
	Select, operate and maintain fault locators 11.06	Select, operate and maintain high voltage test equipment 11.07	Select, operate and maintain computer-based test equipment 11.08	Select, operate and maintain chart recorders 11.09	Select, operate and maintain electrical test equipment 11.10

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Select, operate and maintain special test equipment 11.11				
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INSTALL, MAINTAIN AND TROUBLESHOOT INSTRUMENTATION DEVICES AND SYSTEMS

U12.0

Select, install and maintain instrumentation devices 12.01	Install, maintain and troubleshoot distributed control systems (DCS) 12.02			
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COMMUNICATE IN THE WORKPLACE

U13.0

Write job related documents 13.01	Give, receive and convey instructions to and from others 13.02	Demonstrate effective interpersonal relations 13.03	Present professional image 13.04	Interact effectively with computers 13.05
Interact effectively through communication devices 13.06				