

ELECTRONICS-MECHANIC (CNC SYSTEMS MAINTENANCE)

APPENDIX A

O*NET CODE 47-2111.00

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job training or classroom instruction.

WORK PROCESSES

	Approximate Hours
A. Familiarization with CNC Machines	500
1. Preliminary familiarization with the operations of, and adjustments to, various CNC machines including: controls, equipment and parts.	
2. Safety Practices.	
B. Basic Maintenance	750
1. Basic maintenance of machines and equipment including: oiling, greasing, pressure readings and basic preventive maintenance.	
2. Performance of minor repairs and installations on Electrical Services, Hydraulic, and Pneumatic Circuits.	
C. Basic Machine Shop Operations	750
1. Operation of mills, drill presses, lathes, grinders, saws.	
2. Operation of welding equipment.	
3. Familiarization with various machine controls, alarm messages, maintenance manuals and test equipment.	
D. Basic CNC Machine Maintenance	2,500
1. Troubleshooting, repair, adjustments, and prevention maintenance on the various CNC Machines.	
2. Familiarization with care and use of all tools.	
E. Intermediate CNC Machine Maintenance	2,000
1. Intermediate troubleshooting, repair, adjustments, and preventive maintenance. Familiarization with problems in, and repairs to, specific equipment in the areas of: electronic control, calibration, electrical controls, and mechanical assemblies.	

F. Advanced Electronic and Mechanical Troubleshooting **1,500**

1. Diagnosis of complex problems and repairs, to components level, using machine-coded CNC programs to simulate machine functions and electronic schematics, mechanical drawings, machine manuals, diagrams, and other test equipment on CNC types of machines, equipment, and controls.

Approximate Total Hours **8,000**

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>

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APPENDIX B

RELATED INSTRUCTION

Safety

1. Fundamentals (4 hours first year)
2. Trade Safety (12 hours second year)
3. First Aid (minimum 6.5 hours every 3 years)
4. Sexual Harassment Prevention Training – must comply with section 201-g of the Labor Law

Blueprint Reading

1. Basic Blueprint Reading
2. Advanced Blueprint Reading

Mathematics

1. Algebra
2. Trigonometry

Trade Theory

1. Industrial Electricity
2. Industrial Electronics
3. Hydraulics
4. Pneumatics
5. CNC Controls

Trade Technology

1. Manufacturer's Electronic Control Course

144 Hours of Related Instruction are Required for Each Apprentice for Each Year.

Appendix B topics are approved by New York State Education Department.