

MOLDMAKER

APPENDIX A

O*NET CODE 51-4111.00

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 or classroom learning.

WORK PROCESSES

	Approximate Hours
A. Safety	100
1. Use of personal protective equipment; safe use of hand tools, power tools, and machinery. Basic	
2. First Aid and CPR.	
B. Drills	500
1. Kinds of drills, tapping, reaming, lapping, counter-boring, countersinking, grinding, lubricants, speeds and feeds, safety.	
C. Milling Machines (Vertical and Horizontal)	1,000
1. Use of dividing head, spline, milling, fluting spiral milling, rack cutting, cutter milling, set-up tram bridge porheads, rotary tables, speeds, feeds, lubricants, safety.	
D. Grinders	1,000
1. Selection of grinding wheels, mounting wheels, taper form, angle and hole grinding, grinding of mills, speeds, feeds. Use of gauge blocks and measuring instruments, jig grinding, injector pins, safety.	
E. Lathes (Engine and Bench)	1,000
1. Use of face plates, straight turning, facing, tapping, threading, set-up, speed, feeds, lubricants, safety.	
F. Bench and Die Work	1,000
1. Use of gauge blocks and measuring instruments, use of hand tools, assembly and repair of molds and dies, finishing of dies, shut off and fitting.	

G. Polishing and Handwork	950
1. Polishing mold using different grits of paper, stones, or hand tools, mold cavities, cores, pins to SPI finishes.	
H. Design and Layout	1,000
1. Take specifications, use of drawing tools, make design and layouts (program and operate CAD/CAM machines if applicable).	
I. Heating Treating	100
J. Miscellaneous Machines	800
1. Machine repair and other such work as may be considered adequate to complete the experience necessary to attain the skills and versatility required of journey person.	
K. EDM	200
1. Set up and operation of Wire EDM, fabrication of electrodes 3R systems.	
L. CNC Mills	250
1. Proper set up of machines, selection of cutting tools and inputting tool length of sets, use of correct programming methods and sequences, use of desktop computer to write programs, machine maintenance, safety.	
M. Repair Welding – TIG	100
1. Safety, proper set up and selection of gas pressures tungsten diameters and filler materials, matching filler materials to steel being welded for hardness and machinability.	
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>.

MOLDBAKER

APPENDIX B

RELATED INSTRUCTION

Safety (16 hours)

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 – must comply with Section 201-g of the Labor Law

Industrial and Labor Relations (20 hours)

1. History and Background (6 hours first year)
2. Current Laws and Practices (14 hours second year)

Blueprint Reading, Sketching and Drawing

1. Elementary Blueprint Reading and Sketching
2. Advanced Blueprint Reading and Sketching
3. Specifications, Scales, etc.

Mathematics

1. Elementary Fundamentals
2. Elementary Foundry Mathematics
3. Advanced Foundry Mathematics
4. Estimating Quantities and Costs
5. Introduction to Trigonometry

Trade Theory and Science

1. Tools, Machines and Equipment – Care and Maintenance
2. Materials of the Trade
3. Terminology
4. Technology of Jobs and Processes
5. Basic NC and CNC Programming
6. Principles of Patterns
7. Properties of Materials
8. Principles of Punch and Die Design
9. Principles of Jig & Fixture Design

10. Principles of Gauge Design

11. Principles of Cutting Tool Design

Inspection, Layout and Assembly Practices

Other Related Courses as Necessary

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

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