



APPRENTICESHIP PROGRAM OUTLINE

MACHINE OPERATOR I WORK PROCESSES & SKILLS

The term of the apprenticeship will be based on the apprentice's completion and on-the-job demonstration of the professional competencies outlined in the work processes. Apprentices must demonstrate competency in a minimum of **87.5%** of the listed competencies prior to completing the program. If training employers identify specific competencies that cannot be tested on the job, the apprenticeship committee will approve and provide instruction and testing that ensures the competencies have been met. Registered Apprentices will perform work and are required to demonstrate competencies in the following skills:

Work Processes & Skills

- Observe machine operation to detect workpiece defects or machine malfunctions, adjusting machines as necessary.
- Set up and operate machines, such as lathes, cutters, shears, borers, millers, grinders, presses, drills, or auxiliary machines, to make metallic and plastic workpieces.
- Inspect workpieces for defects, and measure workpieces to determine the accuracy of machine operation, using rules, templates, or other measuring instruments.
- Read blueprints or job orders to determine product specifications and tooling instructions and to plan operational sequences.
- Start machines and turn handwheels or valves to engage feeding, cooling, and lubricating mechanisms.
- Select, install, and adjust the alignment of drills, cutters, dies, guides, and holding devices, using templates, measuring instruments, and hand tools.
- Move controls or mount gears, cams, or templates in machines to set feed rates and cutting speeds, depths, and angles.
- Position, adjust, and secure stock material or workpieces against stops, on arbors, or in chucks, fixtures, or automatic feeding mechanisms, manually or using hoists.
- Set machine stops or guides to specified lengths as indicated by scales, rules, or templates.
- Perform minor machine maintenance, such as oiling or cleaning machines, dies, or workpieces, or adding coolant to machine reservoirs.
- Measure and mark reference points and cutting lines on workpieces, using traced templates, compasses, and rules.
- Compute data, such as gear dimensions or machine settings, applying knowledge of shop mathematics.
- Instruct other workers in machine set-up and operation.
- Change worn machine accessories, such as cutting tools or brushes, using hand tools.
- Make minor electrical and mechanical repairs and adjustments to machines and notify supervisors when major service is required.
- Extract or lift jammed pieces from machines, using fingers, wire hooks, or lift bars.
- Record operational data, such as pressure readings, lengths of strokes, feed rates, or speeds.
- Remove burrs, sharp edges, rust, or scale from workpieces, using files, hand grinders, wire brushes, or power tools.
- Select the proper coolants and lubricants and start their flow.
- Align layout marks with dies or blades.



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MACHINE OPERATOR I RELATED INSTRUCTION

Apprentices must Complete Coursework Aligned with Manufacturing and/or Machining Technology, Production Technician, and/or Engineering Technology pathways. Through consultation with the Apprenticeship Committee, the Local Education Agency, and the indenturing employer, apprentices will select an applicable program of study/course track and complete a minimum of **144 hours** of related instruction per year of apprenticeship. Prior applicable education and training will be credited towards completion of related education requirements and apprentices will be offered tracks advancing their technical aptitude in the profession.

Related Instruction Content May Include

SOLID WORKS	108 HOURS
BLUEPRINT READING	54 HOURS
GENERAL MACHINE SHOP & THEORY OF MACHINING	108 HOURS
OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION STANDARDS FOR GENERAL INDUSTRY (OSHA)	36 HOURS
COOPERATIVE WORK EXPERIENCE (1-16 UNITS)	

REGISTERED WITH:



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