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# **Appendix A**

**NUMERICAL CONTROL MACHINE OPERATOR (CNC)**

**WORK PROCESS SCHEDULE AND  
RELATED INSTRUCTION OUTLINE**

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## Appendix A

### WORK PROCESS SCHEDULE NUMERICAL CONTROL MACHINE OPERATOR (CNC)

**O\*NET-SOC CODE:** 51-9161.00    **RAPIDS CODE:** 0845CB

This schedule is attached to and a part of these Standards for the above identified occupation.

#### 1. APPRENTICESHIP APPROACH

☐ Time-based      ☒ Competency-based      ☐ Hybrid

#### 2. TERM OF APPRENTICESHIP

The term of **Numerical Control Machine Operator (CNC)** is **Competency Based** supplemented by the minimum required 144 hours of related instruction per year.

#### 3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: **1** Apprentice(s) to **1** Journeyworker(s).

#### 4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is: **\$22.42**/per hour.

Period	Wage (Hourly)	Description
1	16.00	6 months + hours
2	16.50	6 months + hours
3	17.00	6 months + hours
4	17.50	6 months + hours

#### 5. PROBATIONARY PERIOD

Applicants selected for apprenticeship will serve a probationary period of **1000** Hours.



## 6. SELECTION PROCEDURES

Applicants will be selected by individual participating employer sponsors using selection method #4, as outlined in the California Code of Regulations, Title 8, Chapter 2, Part 1, Section 215, Chapter 6, from a pool of eligible created during the established recruiting process in accordance with the State and Federal Equal Opportunity regulations.

1. Minimum age of all applicants shall be 16 years. There is no maximum age;
2. Educational prerequisite for entry: High school diploma or GED/equivalent;
3. Physical prerequisites: Applicant must have the ability to safely perform the work of the trade/occupation. Physical examination required for entry is at no cost to the applicant and the physical exam will be defined by the individual employersponsor.
4. Written Test: Administered by Faculty and/or Program Coordinator
5. Oral Interview: None Required
6. All applicants will be notified in writing of Acceptance or Rejection.
7. If rejected, reasons for rejections will be stated.
8. A pool of applicants will be established and maintained for two years as follows:
  - a. Interested applicants will have an opportunity to attend a publicorientation and enroll in the program's employment preparation course. Completers of the course will be guided through the development of a resume and job application, which will be published to participating employer partners.
9. And applicants will be employed as follows:
  - a. Applicants will follow directives of individual employer partners through job application, interview and pre-screening.
  - b. Applicant's prior work experience and training will be evaluated by the committee at the time of registration, and appropriate credit will be given toward a higher apprenticeship and/or wage bracket. Apprentice applicant must verify, in writing, all past experience/education for consideration of credit.
  - c. Each participating employer sponsor, upon determination of the need to employ and train an apprentice, will register an apprentice after upholding a fair and consistent sourcing, recruiting, and evaluation process;
  - d. Participating employer sponsors will report recruitment and selection data annually to the Program Name Apprenticeship Training Program coordinator/director;
  - e. Minimum age of all applicants shall be 16 years. There is no maximum age;
  - f. Educational prerequisite for entry: High school diploma or GED/equivalent;
  - g. Physical prerequisites: Applicant must have the ability to safely perform the work of the trade/occupation. Physical examination required for entry is at no cost to the applicant and the physical exam will be defined by the individual employer sponsor.
  - h. Drug screening prior to employment, as well as random drug screening throughout the apprenticeship program may be required for selection and/or continued participation/employment;
  - i. General aptitude or other skills test shall be defined by the individual employer sponsor and administered by the employer sponsor or its delegated agent;
  - j. Oral interview is per employer sponsor's individual selection procedures with selection documentation to be on file with the Program Name program director/coordinator.



## WORK PROCESS SCHEDULE NUMERICAL CONTROL MACHINE OPERATOR (CNC)

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### On-the-Job Learning Outline

Skills & Work Processes		
Competencies	Date Completed	Initial
A. Write simple programs for computer-controlled machine tools.		
B. Input initial part dimensions into machine control panels.		
C. Clean machines, tooling, or parts, using solvents or solutions and rags.		
D. Set up future jobs while machines are operating.		
E. Implement changes to machine programs and enter new specifications, using computers.		
F. Confer with supervisors or programmers to resolve machine malfunctions or production errors or to obtain approval to continue production.		
G. Maintain machines and remove and replace broken or worn machine tools, using hand tools.		
H. Control coolant systems.		
I. Stack or load finished items or place items on conveyor systems.		
J. Lift workpieces to machines manually or with hoists or cranes.		
K. Adjust machine feed and speed, change cutting tools, or adjust machine controls when automatic programming is faulty or if machines malfunction.		
L. Calculate machine speed and feed ratios and the size and position of cuts.		
M. Modify cutting programs to account for problems encountered during operation and save modified programs.		
N. Enter commands or load control media, such as tapes, cards, or disks, into machine controllers to retrieve programmed instructions.		
O. Monitor machine operation and control panel displays and compare readings to specifications to detect malfunctions.		
P. Remove and replace dull cutting tools.		
Q. Listen to machines during operation to detect sounds such as those made by dull cutting tools or excessive vibration and adjust machines to compensate for problems.		
R. Review program specifications or blueprints to determine and set machine operations and sequencing, finished workpiece dimensions, or numerical control sequences.		
S. Insert control instructions into machine control units to start operation.		
T. Set up and operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic workpieces.		
U. Check to ensure that workpieces are properly lubricated and cooled during machine operation.		
V. Transfer commands from servers to computer numerical control (CNC) modules, using computer network links.		
W. Stop machines to remove finished workpieces or to change tooling, setup, or workpiece placement, according to required machining sequences.		
X. Mount, install, align, and secure tools, attachments, fixtures, and workpieces on machines, using hand tools and precision measuring instruments.		
Y. Measure dimensions of finished workpieces to ensure conformance to specifications, using precision measuring instruments, templates, and fixtures.		



## **RELATED INSTRUCTION OUTLINE NUMERICAL CONTROL MACHINE OPERATOR (CNC)**

**O\*NET-SOC CODE: 51-9161.00      RAPIDS CODE: 0845CB**

Through consultation with the Apprenticeship Committee 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. Courses will be approved by the Apprenticeship Committee and made available to applicable apprentices by approved education providers/institutions. Apprentices will enroll in, and complete, the required coursework that satisfies the minimum requirements of the program. 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.

**Source: Norco College**

The following related training outline identifies the courses that are currently identified as suggested course work for this occupation:

**Solid Works I – 108 hours**

**Blueprint Reading – 54 hours**

**General Machine Shop & Theory of Machining – 108 hours**

**OSHA Standards for General Industry – 18 hours**

**CNC Machine Set-up and Operations – 108 hours**

**CNC Program Writing – 90 hours**



Appendix A = Work Process Schedule and Related Instruction Outline by LAUNCH Apprenticeship Network, Department of Labor (DOL) – Apprenticeship Building America (ABA) Grant, FoundationCCC is licensed under CC BY 4.0.

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