



NEVADA LABOR COMMISSIONER
NEVADA STATE APPRENTICESHIP COUNCIL
2023 Non-Joint Standards of Apprenticeship

Appendix A3

WORK PROCESS SCHEDULES AND RELATED INSTRUCTION OUTLINE

*Truckee Meadows Community College
and Workforce Connections*

Industrial Maintenance Mechanic

O*NET-SOC CODE: 49-9041.00 RAPIDS CODE: 0308HY

APPROVED BY
THE NEVADA LABOR COMMISSIONER AND THE NEVADA STATE APPRENTICESHIP COUNCIL

Toni Giddens, Nevada State Apprenticeship Director

REGISTRATION DATE: _____

RAPIDS PROGRAM ID NUMBER: 2018-NV-70687

**DEVELOPED IN COOPERATION WITH THE
THE NEVADA LABOR COMMISSIONER, THE NEVADA STATE APPRENTICESHIP COUNCIL AND
THE U.S. DEPARTMENT OF LABOR**

Appendix A3
WORK PROCESS SCHEDULE
INDUSTRIAL MAINTENANCE MECHANIC
O*NET-SOC CODE: 49-9041.00 RAPIDS CODE: 0308HY

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

1. TYPE OF OCCUPATION

☐ Time-based ☐ Competency-based ☒ Hybrid

2. TERM OF APPRENTICESHIP

The term of the occupation shall be defined by the attainment of all competencies of the position. This would be expected to occur within approximately 3,500 - 5,000 hours of OJL, supplemented by the minimum of 144 hours of related instruction per year of the apprenticeship.

3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journey worker/fully trained worker ratio is: 1 apprentice to 1 journey worker/fully trained worker.

4. APPRENTICE WAGE SCHEDULE

An apprentice minimum starting wage will be at least \$14.50 per hour. Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journey worker/fully trained worker wage. A journey worker/fully trained worker minimum wage will be at least \$22.00.

3-Year Term Example:

1 st	6 months = 67%	2 nd	6 months = 72%
3 rd	6 months = 78%	4 th	6 months = 83%
5 th	6 months = 89%	6 th	6 months = 94%

Periodic review and evaluation of the apprentice's on-the-job learning and related technical instruction will be conducted in alignment with the wage schedule established.

5. WORK PROCESS SCHEDULE (See attached Work Process Schedule)

The sponsor may modify the work processes to meet local needs prior to submitting these Standards to the appropriate Registration Agency for approval.

6. RELATED INSTRUCTION OUTLINE (See attached Related Instruction Outline)

The sponsor may modify the related instruction to meet local needs prior to submitting these Standards to the appropriate Registration Agency for approval.

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**WORK PROCESS SCHEDULE
INDUSTRIAL MAINTENANCE MECHANIC
O*NET-SOC CODE: 49-9041.00 RAPIDS CODE: 0308HY**

The term of the occupation shall be defined by the attainment of all competencies, both technical and behavioral, of the position, which would be expected and approximated to occur within 3,500 - 5,000 hours of OJL, supplemented by a minimum of 144 hours of related instruction per year of apprenticeship.

Apprenticeship Competencies – Technical

Item	Work Processes	Approx. Hours
A	Workplace Safety and Health	100-150
B	Environmental Protection	200-250
C	Operational and Technical Communication	300-400
D	Plan and Organize Work and Assess Work Results	400-500
E	Distinguish, Classify, and Handle Materials and Auxiliary Supplies	200-300
F	Manufacture Components and Modules	450-600
G	Maintain Operating Equipment	450-600
H	Control Technology (Advanced Manufacturing and Robotics)	200-250
I	Lash, Secure, and Transport	150-250
J	Customer Orientation	100-150
K	Manufacture, Assemble, and Disassemble Components, Modules, & Systems	400-600
L	Ensure Operability of Technical Systems	300-500
M	Repair Technical Systems	200-350
N	Business Processes and Quality Assurance Systems in Operating Area	50-100
	Total hours (approximate)	3500-5000

The above on-the-job-learning (OJL) work process competencies are intended as a guide. It need not be followed in any sequence, and it is understood that some adjustments may be necessary in the hours allotted for different work experience. In all cases, the apprentice is to receive sufficient experience to make them fully competent and use good workmanship in all work processes, which are a part of the industry. In addition, the apprentice shall be fully instructed in safety and OSHA requirements.

Apprenticeship Competencies – Behavioral

In addition to mastering all the essential technical competencies, an apprentice must consistently demonstrate at an acceptable level the following behavioral competencies, to complete the apprenticeship.

Item #	Behavioral Competencies
1.	Participation in team discussions/meetings
2.	Focus in team discussions/meetings
3.	Focus during independent work
4.	Openness to new ideas and change
5.	Ability to deal with ambiguity by exploring, asking questions, etc.
6.	Knows when to ask for help
7.	Able to demonstrate effective group presentation skills
8.	Able to demonstrate effective one-on-one communication skills
9.	Maintains an acceptable attendance record
10.	Reports to work on time
11.	Completes assigned tasks on time
12.	Uses appropriate language
13.	Demonstrates respect for patients, co-workers, and supervisors
14.	Demonstrates trust, honesty, and integrity
15.	Requests and performs work assignments without prompting
16.	Appropriately cares for personal dress, grooming and hygiene
17.	Maintains a positive attitude
18.	Cooperates with and assists co-workers
19.	Follows instructions/directions
20.	Able to work under supervision
21.	Able to accept constructive feedback and criticism
22.	Able to follow safety rules
23.	Able to take care of equipment and workplace
24.	Able to keep work area neat and clean
25.	Able to meet supervisor's work standards
26.	Able to not let personal life interfere with work
27.	Adheres to work policies/rules/regulations

RELATED INSTRUCTION OUTLINE

The related instruction has been developed in cooperation with employer-partners as part of the apprenticeship. The following is a set of courses to be delivered by subject matter experts.

Related Technical Instruction (RTI) - This instruction shall include, but not be limited to, at least 144 hours per year for each year of the apprenticeship. The related theoretical education listed below is tightly integrated with real work product. The curriculum is defined as a variety of classes, around which the exams and projects are based. By defining the RTI this way, all competencies required of the students are met, through project work.

COURSE TOPICS	HOURS	CREDITS
A. Electrical/Electronic Circuits	45	3
B. Mechanical Drive Systems	45	3
C. Introduction to AC Controls	45	3
D. Programmable Logic Controllers I	45	3
E. Intro to Machine Shop	45	3
F. Fluid Power	45	3
G. General Industry Safety	20	1
H. 2 Required Elective Courses (Employer Choice)	90	6

COURSE TOPIC DESCRIPTIONS

A. ELM 110 – Electrical/Electronic Circuits

This course covers basic AC/DC circuit principles and practices. Students will explore areas of electrical and electronic circuits including: circuit theory, components, circuit construction and analysis, soldering techniques, proper test equipment usage, troubleshooting methodology, and applications in various technical fields.

B. MPT 160 – Mechanical Drive Systems

This course covers the basic and intermediate principles and practices of mechanical drive systems used in industry. Students will learn proper installation, troubleshooting, repair and maintenance techniques; of Mechanical Drive Systems such as Belt, Chain, and Gear Drives.

C. ELM 127 – Introduction to AC Controls

An introduction to hard-wired industrial control. Emphasis is on the control of electrical motors through relay logic. Topics include circuit design using industrial control diagrams, circuit construction with industrial control panels and devices, troubleshooting methodology and practice.

D. ELM 134 – Programmable Logic Controllers I

An introduction to, and hands-on experience with Programmable Logic Controllers (PLC's). Emphasis is on understanding the basic operation and fundamental use of PLC's in industry as a "relay-replacer." The student will build several PLC based control circuits and program the PLC's using PC based software.

E. MTT 101 – Introduction to Machine Shop

Introduces safety procedures, use of bench tools, layout tools, power saws, drill presses, precision measurement tools, rotary tables and indexing devices, lathe and mill cutting tools and tool holding, work holding and machining applications as well as the various hand tools related to the machine shop.

F. MT 108 – Fluid Power

This course covers the basic and intermediate principles and practices of Fluid Power for both hydraulic and pneumatic systems. Students will learn and demonstrate applications of industrial use of fluid power components, theory and calculations of fluid control, measuring and calculations of fluid flow, pressure regulation, and troubleshooting, repair and maintenance techniques.

G. OSH 222 - General Industry Safety

This is a general safety course for an industrial environment. Apprentices will learn OSHA regulations, personal safety and understand the importance of safe work habits.

H. Two Required Elective Courses

These two courses are complementary courses to the program of study based on employers' needs and preference. Some examples are:

- MTT 140 – Inspection Techniques
 - MPT 102 – Introduction to Programming for Mechatronics
 - MPT 120 – Automated Production Concepts II
 - MPT 140 – Quality Control
-

SECTION 27 - OFFICIAL ADOPTION OF APPRENTICESHIP STANDARDS

Truckee Meadows Community College and Workforce Connections hereby adopts these standards of apprenticeship.

Sponsor(s) designate the appropriate person(s) to sign the standards on their behalf.

Signature of Sponsor (*designee*)

Date:_____

Diane Ferguson, Program Manager
Type Name & Title