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September 15, 2021

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September 7, 2021

Department of Labor & Industries
Apprenticeship Section
PO Box 44530
Olympia WA 98504-4530

REQUEST FOR REVISION OF STANDARDS

Sandra K. Husband
L&I apprenticeship coordinator

TO: Washington State Apprenticeship & Training Council

From: **Aerospace Joint Apprenticeship Committee, #1828**
(NAME OF PROGRAM STANDARDS)

Teri Gardner 9-14-2021
Teri Gardner 9-7-2021

Please update our Standards of Apprenticeship to reflect the following changes.
Additions shall be underlined.
Deletions shall be ~~struck through~~.
See attached.

Authorized signatures

(chr.) Demetria L. Strickland	Approved by: Washington State Apprenticeship & Training Council
(sec.)	Secretary of WSATC:
date: September 02, 2021	date:

attach additional sheets if necessary

Cover Page

Occupational Objective(s):	SOC#	Term[WAC 296-05-015]
MAINTENANCE/AUTOMATION TECHNICIAN ~~(YOUTH)~~	**49-9071.00**	**2,000 HOURS**
PRODUCTION TECHNICIAN ~~(YOUTH)~~	**51-9198.00**	**2,000 HOURS**

Sponsor Introductory Statement (Required):

The Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth)~~ occupations provides an entry point for youth as young as 16 into apprenticeship with an opportunity to receive career exploration, knowledge and application of skills in a real-world environment which may lead to family-wage careers and additional educational opportunities.

II. Minimum Qualifications:

Age: **~~At least 17 years old. (Exception: 16 for applicants currently enrolled in high school or equivalent credit recovery program).~~**
At least 16 years old for the Maintenance/Automation Technician and Production Technician occupations.

At least 17 years old for all other occupations covered in these standards.

Education: **All occupations unless otherwise noted:**
Evidence of English and Math proficiency equivalent to College Math and English 90. Evidence may include:

- **a.** **High School ~~diploma/~~ graduate or equivalent or working toward ~~a~~ a high school ~~diploma/~~ graduation or equivalent. ~~A two-year Associate's degree will be accepted in lieu of a high school diploma/equivalent.~~; or**
- **b.** **Completion of the World of Work Inventory (WOWI) assessment with a minimum score of 27.78 in numerical and 34.95 in verbal (or equivalent assessment that has cut scores normed to Math 90 and English 90 in the state of WA); or**
- **c.** **Transcript from an accredited college showing passing scores in Math and English 90 or above.**
- **d.** **Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth)~~: must be enrolled in high school or equivalent credit recovery program at a minimum.**

Testing: **None**
~~Persons entering an apprenticeship must have completed the World of Work Inventory (WOWI) assessment with a minimum score of 27.78 in numerical, 34.95 in verbal or have successfully completed a college math and English class at 90 level or above.~~
~~Exception: Production Technician (Youth) and Maintenance/Automation Technician (Youth) entering the youth apprenticeship program may show successful completion of high school level Algebra and English relating to graduation requirements in place of the WOWI test scores.~~

IV. Term of Apprenticeship:

F. The term of the Production Technician ~~(Youth)~~ and the Maintenance/Automation Technician ~~(Youth)~~ will be 2,000 hours of reasonably continuous employment.

The Committee realizes Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth)~~ apprentices may not be able to complete the 2,000 hours of OJT specified in every work process as set forth in this Standard during their high school term and will need to continue employment with an Approved Training Agent after high school to complete the OJT portion of training.

V. Initial Probationary Period:

4. The Initial Probationary Period for Production Technician ~~(Youth)~~ and the Maintenance/Automation Technician ~~(Youth)~~ is the first 400 hours of employment as an apprentice.

VII. Apprentice Wages and Wage Progression:

C. Wage Progression Schedules

Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth)~~

VIII. Work Processes:

D. Machinist (Aircraft Oriented) Approximate Hours

1. Basic Conventional & CNC Machining ~~Basics~~……..…..……~~800~~ 2600
~~Manufacturing primer (500 within 2 years)~~
~~Terminology~~
~~Various shop tools~~
~~Surface grinding~~
~~Honing~~
~~Drill Presses~~
~~Bridgeports~~
~~Cranes/rigging~~
~~Metal/Band Saws~~
~~Health and Safety - All apprentices will be trained on health and safety as it applies to all equipment and shop processes throughout the 8,000 hours of the apprenticeship.~~
Includes but not limited to:

- **Manual Mill & Lathe Machining: Dialing in Machines, Feeds & Speeds, Squaring, Milling, Turning, Threading, hydraulic and manual presses.**
- **CNC Mill & Lathe Machining: Basic CNC Mill & Lathe Machining set up, work holdings, basic machine maintenance (i.e. fluid levels), basic operations.**

2. Advanced Conventional & CNC Machining Operations 2100
~~Axis and Cartesian Coordinates (2100 within 2 years)~~
~~Zero-offsets~~

~~TLO's and CDC's~~
~~M+G programming system~~
~~Crash Avoidance~~
~~Machine Maintenance (including alignment)~~
Includes but not limited to:

- Manual lathe turning, manual milling vertical/horizontal/jig, broaching, keyseat cutting, gear cutting.
- Advanced machining techniques, specialty tool selection/install/repair, advance set-up and operation, complex tolerance machining, and system operations.

3. CNC Set-Up & Advanced Operation Procedures ~~Programming & CAD/CAM……~~ .....~~300~~ 800
~~(250 within 2 years)~~

   Includes but not limited to:

   - Advanced work holdings, jigs, tool and die theory, M+G programming system, crash avoidance, advanced preventative maintenance (including alignment), cutting tool selection/maintenance, tool and cutter grinding. Water-Jet, Laser, EDM operation.

4. Material Process, Quality Assurance & Cutting Technology ~~Inspection~~ 500
~~Blueprint reading~~ ~~(500 within 2 years)~~
~~Mylars~~
~~Geometric dimensioning~~
~~Inspection tool use~~
~~Inspection techniques~~
~~Inspection systems~~
~~Coordinate Measuring Machine (CMM)~~
Includes but not limited to:

   - Material process handling and metallurgy (i.e. Aluminum, Stainless steels, steels, heat treat/electroplate, ceramics, castings, forgings, billets, plastics, composites.)
   - Use of various tools such as but not limited to: (Boring bar, broach, end mill, drill, spot drill, center drill, reamer, engraving cutters, face mills, radius mills, custom ground tools), Turning tools, milling tools, insert Tools, boring tools.

5. ~~Materials--metallurgy and successful machining~~ Advanced Machining Techniques & NC Programming .....~~200~~ 500
~~Aluminum, 6000, 7000 series~~
~~Stainless steels, 15-5, 17-4~~
~~Heat Treat/electroplate~~
~~4000 series steels~~
~~Castings~~
~~Forgings~~
~~Solids~~
Includes but not limited to Programming tools, parts, and workholding using CAD and CAM software, advanced troubleshooting of programming issues, and reprogramming. Ensuring the software is posted correctly for the machine and its capabilities.

6. Inspection, Parts Finishing, Deburr, Assembly & Bench Work……...1500
~~**Cutting Tool technology .....300**~~
~~**Milling tools (150 within 2 years)**~~
~~**Wheel Cutters**~~
~~**Drills**~~
~~**Insert Tools**~~
~~**Boring tools**~~
~~**Form Tools**~~
~~**Taps**~~
Includes but not limited to:

- **Blueprint reading, mylar, GD&T, Inspection techniques & proper tool use, temperature control & FOD control, inspection systems, coordinate measuring machine (CMM), workholding.**
- **Parts assembly, part marking, part packaging, deburring, tool & cutter grinding and maintenance.**

~~**7. Machine Setup Procedures.....800**~~
~~**Elementary layout (350 within 2 years)**~~
~~**Advanced Layout**~~

~~**8. Bench Work…….. .....1000**~~
~~**Assembly (150 within 2 years)**~~
~~**Deburring**~~
~~**Tool & Cutter grinding**~~
~~**External/Internal/Thread/Cylindrical grinding**~~

~~**9. Conventional Machining .....1800**~~
~~**Engine Lathe**~~
~~**Milling/Vertical/Horizontal/Jig**~~
~~**Broaching/Keyseat/Gear cutting**~~

~~**10. Advance Machining, Waterjet, EDM.....200**~~

Total Hours: 8000

I. Production Technician ~~(Youth)~~ Approximate Hours

1. **Production Machining Basics…….…...…..……..…500**
2. **Production ~~Machine~~ Setup and Operations Procedures.....250**
3. **Material Process, Parts Finishing & Deburr ~~CNC Setup and~~ Operations……...250**
4. **Inspection, Assembly, Customer Service & Bench Work…….1000**

Total Hours 2000

The above schedule of practical work experience is designed as a guide. The ~~youth~~ apprentice shall be instructed and trained in all operations and methods customarily used in their trade as allowable by State Law. Each shop will adhere to as closely as facilities will permit and as approved by the Apprenticeship

Committee. Retention of the ~~youth~~ apprentices that are 16-17 years old on a particular operation beyond the established time should not occur unless there is a definite need for further training in the process. Refer to the apprentice work progress record for additional information related to specific work processes.

J. Maintenance/Automation Technician ~~(Youth)~~ Approximate Hours

1. **Basic Machine Operation ~~Preventative Maintenance and Repair, Fluid Power Systems~~.....~~400~~ 700**
2. **Installation of Production Machinery & Equipment ~~Production Machine Operations, PLCs, Robotics, Fluid Power System~~……...~~400~~ 300**
3. **Preventative Maintenance of Machinery & ~~Repair of Production Machinery: PLCs, CNC, Fluid Power Systems, Hydraulics and Robotic~~ Equipment……....…….....200**
4. **Repair of Production Machinery & Equipment ~~Maintenance Welding~~…..400**
5. **Inspection, Troubleshooting, Customer Service & Bench Work ~~Basics and Troubleshooting~~.....~~100~~ 400**
6. ~~**Internal and External Customer Service……..…..300**~~
7. ~~**Bench Work……..……500**~~

Total Hours: 2000

The above schedule of practical work experience is designed as a guide. The ~~youth~~ apprentice shall be instructed and trained in all operations and methods customarily used in their trade as allowable by State Law. Each shop will adhere to as closely as facilities will permit and as approved by the Apprenticeship Committee. Retention of the ~~youth~~ apprentices that are 16-17 years old on a particular operation beyond the established time should not occur unless there is a definite need for further training in the process. Refer to the apprentice work progress record for additional information related to specific work processes.

Additionally, the following will be adhered to for Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth):~~

IX. Related/Supplemental Instruction:

A. The methods of related/supplemental training must be indicated below (check those that apply):

(X) Sponsor approved online or distance learning courses (specify)
Would include but are not limited to: Tooling U, Wisc-Online, etc.

B. **144** Minimum RSI hours per year defined per the following [see WAC 296-05-015(6)]:

(**X**) Two-thousand hours of on the job training. – **Production Technician ~~(Youth)~~ and Maintenance/Automation Technician ~~(Youth)~~ only.**

C. Additional Information:

3. **It is recommended that ~~To~~ to advance to the journey level of their occupation, the apprentice must provide a copy of a valid and current Industrial First Aid and CPR card.**

5. **All AJAC apprentices will be provided with a minimum of 144 hours of RSI per year, up to a total of:**

   f. **150 hours of RSI over the course of their apprenticeship for Production Technician ~~(Youth)~~ apprentices.**

   g. **150 hours of RSI over the course of their apprenticeship for Maintenance/Automation Technician ~~(Youth)~~ apprentices.**

X. Administrative/Disciplinary Procedures:

A. Administrative Procedures:

3. Sponsor Procedures:

e. Credit for Previous Experience or Early Completion:

There is a maximum credit of 25% ~~of~~ for the term of apprenticeship~~.~~ except for apprentices transferring or starting new occupations where more than 25% equivalency can be demonstrated. In the case of Machinist (Aircraft Oriented) graduates who are applying for the Tool and Die Maker occupation, more than 25% credit may be awarded for OJT hours.

f. Credit for Previous Education/Challenge of Curriculum (RSI Only):

An apprentice who has previous industry-related education may request credit for previous education and/or challenge RSI curriculum. An apprenticeship request for credit for previous education and/or challenge of RSI curriculum cannot exceed 25% of the total RSI program course~~.~~ except for apprentices transferring or starting new occupations where more than 25% equivalency can be demonstrated. In the case of Machinist (Aircraft Oriented) graduates who are applying for the Tool and Die Maker occupation, more than 25% credit may be awarded for RSI hours.

~~Apprentices who are granted credit for previous education or challenge a course must still complete the required 144 hours of related classroom instruction. If granted, AJAC staff will work with the apprentice to schedule the next AJAC RSI class.~~

i. Hours Reporting:

1) Apprentice shall submit monthly work progress hours by the fifteenth (15th) day of the following month. It is the responsibility of the apprentice to enter their hours into the online AJAC Apprenticeship Tracking System (ATS):

b. Apprentices may not submit more than 40 straight time hours per week and no more than 2,080 hours per year, toward the required hours for completion with a maximum of 184 hours per month.

2) If the ATS is not available, then the apprentice must make a copy of the work progress report and submit the original signed work progress report to the AJAC Apprenticeship Services Coordinator by:

~~(1)~~a. US Mail
~~(2)~~b. Fax, ~~or~~
~~(3)~~c. DocuSign, or
d. Email directly to the Apprenticeship Services Coordinator.

3) If an apprentice has more than one month of unreported hours, they may be called before the Apprenticeship Coordinator (or representative) to develop a plan to report delinquent hours.
~~Apprentices who fail to submit their hours on time for two months within a year will be called before the Apprenticeship Coordinator.~~

4) Apprentices may be granted a one month extension by the Apprenticeship Coordinator (or representative) to submit unreported hours; however, if the apprentice fails to submit unreported hours within that extension period, the will be called before the Apprenticeship Committee for possible disciplinary actions which may include forfeiture of unreported hours, suspension or cancellation of the Apprenticeship Agreement.
~~Apprentices who fail to submit their hours on time four (4) or more times within a calendar year will be called before the Apprenticeship Committee for possible disciplinary actions, which may include losing the hours for the months that were not reported, hours not being counted towards a step progression or towards the completion of their apprenticeship program, suspension or cancellation of the apprenticeship agreement.~~

5) Employers may dispute hours reported that do not match actual hours worked, overtime, Sick Leave or Paid Time Off.

After employer confirms hours, AJAC may decline hours that exceed 40 straight time hours per week or hours that exceed 184 hours per month.

~~Apprentices who fail to correct disputed or declined hours within 30 days may be called before the Apprenticeship Coordinator.~~

Apprentices who fail to correct disputed or declined hours within 60 days may be called before the Apprenticeship Committee for possible disciplinary actions, which may include ~~losing the hours of the months that were not corrected, hours not being counted towards a step progression or towards the completion of their apprenticeship program,~~

~~**suspension or cancellation of the apprenticeship agreement**~~ **forfeiture of unreported hours, suspension or cancellation of the Apprenticeship Agreement.**

XI. Sponsor – Responsibilities and Governing Structure:

E. Committee governance (see WAC 296-05-009):

1.

[Please delete and replace the committee in its entirety]

c. The employer representatives shall be:

Tim Rabe, Chairperson
P.O. Box 80727
Seattle, WA 98108

Matt Poischbeg
P.O. Box 80727
Seattle, WA 98108

Dave Trader
P.O. Box 80727
Seattle, WA 98108

Will Slota
P.O. Box 80727
Seattle, WA 98108

d. The employee representatives shall be:

Tim Bacon, Secretary
P.O. Box 80727
Seattle, WA 98108

Justin Hill
P.O. Box 80727
Seattle, WA 98108

John Michaud
P.O. Box 80727
Seattle, WA 98108

Alexander Oliver Clifner
P.O. Box 80727
Seattle, WA 98108

Abram Potts - Alternate
P.O. Box 80727
Seattle, WA 98108

XIII. Training Director/Coordinator:

~~**Demetria "Lynn" Strickland, Executive Director**~~
~~**6770 East Marginal Way South Bldg A-106**~~
~~**Seattle, WA 98108**~~

Demetria Lynn Strickland, Apprenticeship Coordinator
P.O. Box 80727
Seattle, WA 98108