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

REQUEST FOR APPROVAL OF PROPOSED STANDARDS

EA
11/21/2019
L&I apprenticeship coordinator

TO: Washington State Apprenticeship & Training Council

Teri Gardner 11-26-1

FROM Axiall Corporation, a Westlake Company Apprenticeship
NAME OF PROGRAM STANDARDS

Check appropriate box:
☐ Committee ☒ Plant ☐ OJT

OCCUPATION(S):	HOURS:	SOC #:
Industrial Maintenance Electrician	8000	47-2111.00
Industrial Maintenance Mechanic	8000	49-9041.00

Authorized Signatures:

Chair:	Approved by: Washington State Apprenticeship & Training Council
Secretary: Mackenzi Ellis	Secretary of Council
Date: 11/21/2019	Date:

Teri Gardner 11-26-19
Teri Gardner 12-6-19

Received 11/26/19
Tacoma - EA
Received 12/06/19
Tacoma - EA

APPRENTICESHIP PROGRAM STANDARDS
adopted by

Axiall Corporation, a Westlake Company
(sponsor name)

Occupational Objective(s):	SOC#	Term [WAC 296-05-015]
Industrial Maintenance Electrician	**47-2111.00**	**8000**
Industrial Maintenance Mechanic	**49-9041.00**	**8000**

APPROVED BY
Washington State Apprenticeship and Training Council
REGISTERED WITH
Apprenticeship Section of Fraud Prevention and Labor Standards
Washington State Department Labor and Industries
Post Office Box 44530
Olympia, Washington 98504-4530

APPROVAL:

Provisional Registration

Standards Last Amended

Permanent Registration

By: Chair of Council

By: Secretary of Council

INTRODUCTION

This document is an apprenticeship program standard. Apprenticeship program standards govern how an apprenticeship works and have specific requirements. This document will explain the requirements.

The director of the Department of Labor and Industries (L&I) appoints the Washington State Apprenticeship and Training Council (WSATC) to regulate apprenticeship program standards. The director appoints and deputizes an assistant director to be known as the supervisor of apprenticeship who oversees administrative functions through the apprenticeship section at the department.

The WSATC is the sole regulatory body for apprenticeship standards in Washington. It approves, administers, and enforces apprenticeship standards, and recognizes apprentices when either registered with L&I's apprenticeship section, or under the terms and conditions of a reciprocal agreement. WSATC also must approve any changes to apprenticeship program standards.

Apprenticeship programs have sponsors. A sponsor operates an apprenticeship program and declares their purpose and policy herein to establish an organized system of registered apprenticeship education and training. The sponsor recognizes WSATC authority to regulate and will submit a revision request to the WSATC when making changes to an apprenticeship program standard.

Apprenticeships are governed by federal law (29 U.S.C 50), federal regulations (29 CFR Part 29 & 30), state law (49.04 RCW) and administrative rules (WAC 296-05). These standards conform to all of the above and are read together with federal and state laws and rules

Standards are changed with WSATC approval. Changes are binding on apprentices, sponsors, training agents, and anyone else working under an agreement governed by the standards. Sponsors may have to maintain additional information as supplemental to these standards. When a standard is changed, sponsors are required to notify apprentices and training agents. If changes in federal or state law make any part of these standards illegal, the remaining parts are still valid and remain in force. Only the part made illegal by changes in law is invalid. L&I and the WSATC may cooperate to make corrections to the standards if necessary to administer the standards.

Sections of these standards identified as bold "**insert text**" fields are specific to the individual program standards and may be modified by a sponsor submitting a revised standard for approval by the WSATC. All other sections of these standards are boilerplate and may only be modified by the WSATC. See WAC 296-05-003 for the definitions necessary for use with these standards.

Sponsor Introductory Statement (Required):

Recognizing the continuous advancements in industrial maintenance technologies and the challenge to increase customer satisfaction, this program establishes the necessary

training that leads the successful apprentice to the status of State Certified Journey Level worker in the specified occupation.

To this end, the graduated apprentice will be able to demonstrate all competencies of this trade that exemplify the highest standards of the chemical process industry.

The objectives of this program will be accomplished through the joint efforts of Axiall Corporate, a Westlake Company and the Department of Labor and Industries.

I. GEOGRAPHIC AREA COVERED:

The sponsor must train inside the area covered by these standards. If the sponsor wants to train outside the area covered by these standards, the sponsor must enter a portability agreement with a sponsor outside the area, and provide evidence of such an agreement for compliance purposes. Portability agreements permit training agents to use apprentices outside the area covered by the standards. Portability agreements are governed by WAC 296-05-009.

The locations owned by Axiall Corporation, a Westlake Company in Longview, Washington.

II. MINIMUM QUALIFICATIONS:

Minimum qualifications must be clearly stated and applied in a nondiscriminatory manner [WAC 296-05-015(17)].

Age:	**Must be at least 18 years of age.**
Education:	**Must be a High School Graduate with a 2.0 GPA or have a GED of at least 255 points. Must provide official transcript from high school and/or college.**
Physical:	**Physically able to do the work of the trade with or without reasonable accommodation.**
Testing:	**NONE**
Other:	**Current Axiall Corporation, a Westlake Company employees who have completed their 90 day probationary period in the Maintenance Utility role.**

III. CONDUCT OF PROGRAM UNDER WASHINGTON EQUAL EMPLOYMENT OPPORTUNITY PLAN:

Sponsors with five (5) or more apprentices must adopt an Equal Employment Opportunity (EEO) Plan and Selection Procedure (chapter 296-05 WAC and 29 CFR Part 30).

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, sex (including pregnancy and gender identity), sexual orientation, color, religion, national origin, age, genetic information, disability or as otherwise specified by law. The sponsor shall take positive action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington State Apprenticeship and Training Council and Title 29, Part 30 of the Code of Federal Regulations.

A. Selection Procedures:

Exempt per WAC 296-05-405(1)(a), fewer than five (5) apprentices.

B. Equal Employment Opportunity Plan:

Exempt per WAC 296-05-405(1)(a), fewer than five (5) apprentices.

C. Discrimination Complaints:

Any apprentice or applicant for apprenticeship who believes they have been discriminated against may file a complaint with the supervisor of apprenticeship (WAC 296-05-443).

IV. TERM OF APPRENTICESHIP:

The term of apprenticeship for an individual apprentice may be measured through the completion of the industry standard for on-the-job learning (at least two thousand hours) (time-based approach), the attainment of competency (competency-based approach), or a blend of the time-based and competency-based approaches (hybrid approach) [WAC 296-05-015].

The term of apprenticeship shall be eight thousand (8,000) hours.

V. INITIAL PROBATIONARY PERIOD:

An initial probationary period applies to all apprentices, unless the apprentice has transferred from another program. During an initial probationary period, an apprentice can be discharged without appeal rights. An initial probationary period is stated in hours or competency steps of employment. The initial probationary period is not reduced by advanced credit or standing. During an initial probationary period, apprentices receive full credit for hours and competency steps toward completion of their apprenticeship. Transferred apprentices are not subject to additional initial probationary periods [WAC 296-05-003].

The initial probationary period is [WAC 296-05-015(22)]:

A. the period following the apprentice's registration into the program. An initial probationary period must not be longer than twenty percent of the term of the entire apprenticeship, or longer than a year from the date the apprenticeship is registered. The WSATC can grant exemptions for longer initial probationary periods if required by law.

B. the period in which the WSATC or the supervisor of apprenticeship may terminate an apprenticeship agreement at the written request by any affected party. The sponsor or the apprentice may terminate the agreement without a hearing or stated cause. An appeal process is not available to apprentices in their initial probationary period.

The probationary period shall be the first 1,600 hours of employment as a registered apprentice with this program.

VI. RATIO OF APPRENTICES TO JOURNEY LEVEL WORKERS

Supervision is the necessary education, assistance, and control provided by a journey-level employee on the same job site at least seventy-five percent of each working day, unless otherwise approved by the WSATC. Sponsors ensure apprentices are supervised by competent, qualified journey-level employees. Journey level-employees are responsible for the work apprentices perform, in order to promote the safety, health, and education of the apprentice.

A. The journey-level employee must be of the same apprenticeable occupation as the apprentice they are supervising unless otherwise allowed by the Revised Code of Washington (RCW) or the Washington Administrative Code (WAC) and approved by the WSATC.

B. The numeric ratio of apprentices to journey-level employees may not exceed one apprentice per journey-level worker [WAC 296-05-015(5)].

C. Apprentices will work the same hours as journey-level workers, except when such hours may interfere with related/supplemental instruction.

D. Any variance to the rules and/or policies stated in this section must be approved by the WSATC.

E. The ratio must be described in a specific and clear manner, as to the application in terms of job site, work group, department or plant:

The ratio of apprentices to journey-level workers shall be one (1) apprentice to one (1) journey-level worker on the job site.

VII. APPRENTICE WAGES AND WAGE PROGRESSION:

A. Apprentices must be paid at least Washington's minimum wage, unless a local ordinance or a collective bargaining agreement require a higher wage. Apprentices must be paid according to a progressively increasing wage scale. The wage scale for apprentices is based on the specified journey-level wage for their occupation. Wage increases are based on hours worked or competencies attained. The sponsor determines wage increases. Sponsors must submit the journey-level wage at least annually or whenever changed to the department as an addendum to these standards. Journey-level wage reports may be submitted on a form provided by the department. Apprentices and others should contact the sponsor or the Department for the most recent Journey-level wage rate.

B. Sponsors can grant advanced standing, and grant a wage increase, when apprentices demonstrate abilities and mastery of their occupation. When advanced standing is granted, the sponsor notifies the employer/training agent of the wage increase the apprenticeship program standard requires.

C. Wage Progression Schedules for **ALL Occupations**

***The wages for all occupations will start at the Maintenance Utility wage rate outlined in the Longview WA Collective Bargaining Agreement. Once the percentage of the journey-level wage rate in the table below exceeds that wage, the apprentice will begin to earn the wages in the table following the steps.**

Step	Hour Range or competency step	Percentage of journey-level wage rate*
1	**0000 - 1000 hours**	**80%**
2	**1001 - 2000 hours**	**83%**
3	**2001 - 3000 hours**	**85%**
4	**3001 - 4000 hours**	**88%**
5	**4001 - 5000 hours**	**90%**
6	**5001 - 6000 hours**	**93%**
7	**6001 - 7000 hours**	**95%**
8	**7001 - 8000 hours**	**98%**

VIII. WORK PROCESSES:

The apprentice shall receive on the job instruction and work experience as is necessary to become a qualified journey-level worker versed in the theory and practice of the occupation covered by these standards. The following is a condensed schedule of work experience.

which every apprentice shall follow as closely as conditions will permit. The following work process descriptions pertain to the occupation being defined.

A. **Industrial Maintenance Electrician** — **Approximate Hours**

1. **Familiarization** 500
   - a. Tools of the Trade
   - b. Safety Practices
   - c. Storeroom
   - d. Electrical Codes
   - e. Miscellaneous

2. **Shop Work** 700
   - a. Service and repair of equipment
   - b. Layout and wiring of panel boards
   - c. Tool room
   - d. Scrapping and cleanup
   - e. Miscellaneous

3. **General Plant** 3000
   - a. Placement of conduit and wire
   - b. Installation of conduit, tray, and wire
   - c. Installation and repair of lighting
   - d. Installation and repair of motor and control equipment
   - e. Testing and troubleshooting of electrical equipment
   - f. Rigging
   - g. Movement and placement of equipment
   - h. Familiarization with electrical equipment and materials

4. **Preventative Maintenance** 500
   - a. Cleaning and greasing of electrical equipment
   - b. Testing of electrical equipment
   - c. Maintenance records
   - d. Miscellaneous

5. **Rectifier and Substation** 1000
   - a. Rectifier maintenance
   - b. Transformer and high voltage maintenance

6. **Instrumentation and Metering** 2000
   - a. Use and care of meters and instruments
   - b. Calibration and repair of meters and instruments
   - c. Installation and repair of equipment
   - d. Preventative maintenance of meters and instruments and valves

7. Mill Processes and Controls 300
   a. General plant operations knowledge
   b. Knowledge of process control strategy
   c. Understanding of various mill processes and troubleshooting PLCs and SCADA systems

Total Hours/# of Competency Levels: 8000

B. Industrial Maintenance Mechanic — Approximate Hours

1. Familiarization 500
   a. Tools of the Trade
   b. Safety Practices
   c. Storeroom
   d. Care and proper safe use, nomenclature and selection of tools and materials in the craft.
   e. Miscellaneous

2. Shop Work 1000
   a. Safe and proper procedures for use of shop equipment including pipe threader, drill press, sanders, grinders, hand tools, etc.

3. General Maintenance 4000
   a. Proper procedures to trouble shoot, repair, replace and install plant mechanical equipment including, centrifugal pumps, gearboxes, fans, valves, actuators, hydraulic and pneumatic equipment, compressors, pressure filters and cranes and carpentry.
   b. Dozer Operation
   c. Miscellaneous

4. Rigging 200
   a. Proper use of hand signals
   b. Operation of equipment and selection of lifting equipment

5. Welding and Burning 400
   a. Safety
   b. Theory and techniques of arc welding, gas welding, tig welding, and gas cutting

6. Lubrication and Preventative Maintenance Inspections 500
   a. Familiarization with lubrication products
   b. Specific applications
   c. Replacement and disposal

7. Layout and Alignment 400

a. Perform layouts, alignments and fabrications using blueprints, and the related tools required

8. Cell Room/Electrolyzer Repair.....1000
a. Rebuild, repair, test and install chlorine electrolyzers
b. Repair and replace valves, piping and gaskets on cell room production equipment.

Total Hours/# of Competency Levels: 8000

XI. RELATED/SUPPLEMENTAL INSTRUCTION:

The apprentice must attend related/supplemental instruction (RSI). Time spent in RSI shall not be considered as hours of work and the apprentice is not required to be paid.

RSI must be provided in safe and healthy conditions as required by the Washington Industrial Safety and Health Act and applicable federal and state regulations.

Hours spent in RSI are reported to L&I each quarter. Reports must show which hours are unpaid and supervised by a competent instructor versus all other hours (paid and/or unsupervised) for industrial insurance purposes.

For purposes of coverage under the Industrial Insurance Act, the WSATC is an employer and the apprentice is an employee when an unpaid, supervised apprentice is injured while under the direction of a competent instructor and participating in RSI activities.

If apprentices do not attend required RSI, they may be subject to disciplinary action by the sponsor.

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

(X) Supervised field trips

( ) Sponsor approved training seminars (specify)

( ) Sponsor approved online or distance learning courses (specify)

(X) State Community/Technical college

( ) Private Technical/Vocational college

( ) Sponsor Provided (lab/classroom)

(X) Other (specify)**: Vendor Seminars on applicable plant equipment.**

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

Industrial Maintenance Electrician	**148.5 RSI Hours**
Industrial Maintenance Mechanic	**165 RSI Hours with Machining for Related Occupations (at the discretion of the apprentice candidate based on course availability as referenced from LCC Class List)** **OR** **181.5 RSI Hours with Machine Shop I (at the discretion of the apprentice candidate based on course availability as referenced from LCC Class List)**

(**X**) Twelve-month period from date of registration.*
( ) Defined twelve-month school year: **(insert month)** through **(insert month)**.
( ) Two-thousand hours of on the job training.

**If no selection is indicated above, the WSATC will define RSI hours per twelve-month period from date of registration.*

C. Additional Information:

NONE

IX. ADMINISTRATIVE/DISCIPLINARY PROCEDURES:

A. Administrative Procedures:

The sponsor may include in this section a summary and explanation of administrative actions performed at the request or on the behalf of the apprentice. Such actions may include but are not limited to:

1. Voluntary Suspension: A temporary interruption in progress of an individual's apprenticeship agreement at the request of the apprentice and granted by the sponsor.

The program sponsor shall review apprentices in suspended status at least once each year to determine if the suspension is still appropriate.

2. Advanced Standing or Credit: The sponsor may provide for advanced standing or credit for demonstrated competency, acquired experience, training or education in or related to the occupation. All sponsors need to ensure a fair and equitable process is applied to all apprentices seeking advanced standing or credit per WAC 296-05-015(11).

3. Sponsor Procedures:

   a. **Apprentices:**
   (1) Will apply oneself both on the job and in related training programs and continually strive to become a skilled worker.

   (2) Must not miss work or related training classes except for excused absences. Proper notification will be provided by the Apprentice to all appropriate parties.

   (3) Shall perform all the duties and tasks on the job as associated with the craft apprenticeship.

   b. **Overtime hours worked shall be recorded as actual hours worked.**

   c. **Related Supplemental Instruction**
   (1) Apprentices must be in the classroom with proper educational materials and ready for class by the scheduled time of class.

   (2) The responsibility rests solely with the Apprentice to complete all lessons and topics missed due to absenteeism to the satisfaction of the instructor(s).

   (3) Apprentices who are absent shall state the reason in writing and present it to the training provider and the Axiall Corporation supervisor. Excuses accepted as valid will exempt the apprentices from penalties, but not from the required minimum hours of classroom training per year for each occupation.

   (4) Any Apprentice who fails to return to class following a break or who decides to leave early on their own volition shall be given no credit for that class and marked absent for the entire class.

   (5) Apprentices not maintaining a 'C' or 70% average shall be subject to disciplinary action.

   (6) Any test missed due to absence of the Apprentice may be made up at the convenience of the class instructor(s) and within a one-week period from the date the test was originally administered.

(7) Retest scores will have an automatic deduction of fifteen (15) points of the final score unless the Apprentice shows a written legitimate excuse.

(8) No alcohol, non-prescription drugs, or controlled substances will be allowed on the classroom training grounds. Violation of the classroom training provider's policies may result in disciplinary action.

Local Apprenticeship Committee Policies

1. A daily record of hours worked in each category of on the job training will be maintained by the apprentice and the apprentice's supervisor will "sign-off" the apprentice's record of hours worked in each category every week.

2. The progress of each apprentice will be reviewed at least monthly by the apprentice's supervisor.

3. Each apprentice will meet with their supervisor and Management on a quarterly basis to review their progress. These quarterly meetings will be scheduled as follows:

1st quarter:	**January through March, by April 5**
2nd quarter:	**April through June, by July 5**
3rd quarter:	**July through September, by October 5**
4th quarter:	**October through December, by January 5**

4. If for any reason an apprentice is no longer employed by Axiall Corporation, a Westlake Company their apprenticeship shall be terminated.

B. Disciplinary Procedures

1. The obligations of the sponsor when taking disciplinary action are as follows:

   a. The sponsor shall be responsible for enacting reasonable policies and procedures and applying them consistently. The sponsor will inform all apprentices of their rights and responsibilities per these standards.

   b. The sponsor shall notify the apprentice of intent to take disciplinary action and reasons therefore 20 calendar days prior to taking such action. The reason(s) supporting the sponsor's proposed action(s) must be sent in writing to the apprentice.

   c. The sponsor must clearly identify the potential outcomes of disciplinary action, which may include but are not limited to discipline, suspension or cancellation of the apprenticeship agreement.

   d. The decision/action of the sponsor will become effective immediately.

2. The sponsor may include in this section requirements and expectations of the apprentices and an explanation of disciplinary actions imposed for noncompliance. The sponsor has the following disciplinary procedures to adopt:

   a. Disciplinary Probation: A time assessed when the apprentice's progress is not satisfactory. During this time the sponsor may withhold periodic wage advancements, suspend or cancel the apprenticeship agreement, or take further disciplinary action. A disciplinary probation may only be assessed after the initial probation is complete.

   b. Disciplinary Suspension: A temporary interruption in the progress of an individual's apprenticeship agreement. Conditions will include not being allowed to participate in On-the-Job Training (OJT), go to Related Supplemental Instruction (RSI) classes or take part in any activity related to the Apprenticeship Program until such time as the sponsor takes further action. The program sponsor shall review apprentices in such status at least once each year.

   c. Cancellation: Refers to the termination of an apprenticeship agreement at the request of the apprentice, supervisor, or sponsor. [WAC 296-05-003].

3. Sponsor Disciplinary Procedures:
   Axiall Corporate, a Westlake Company will follow the Longview, WA CBA disciplinary procedures.

C. Apprentice Complaint Procedures:

1. The apprentice must complete his/her initial probationary period in order to be eligible to file a complaint (WAC 296-05-105).

2. Complaints involving matters covered by a collective bargaining agreement are not subject to the complaint procedures in this section.

3. Complaints regarding non-disciplinary matters must be filed with the program sponsor within 30 calendar days from the date of the last occurrence. Complaints must be in writing.

4. If the apprentice disagrees with the resolution of the complaint or wishes to contest the outcome of a disciplinary action by the program sponsor, the apprentice must file a written request for reconsideration with the program sponsor within 30 calendar days from the date the apprentice received written notice of action by the program sponsor.

5. The program sponsor must reply, in writing, to the request for reconsideration within 30 calendar days from the date the program sponsor receives the request. The program sponsor must send a copy of the written reply to the apprentice within the 30 calendar days.

6. If the apprentice disagrees with the program sponsor's decision, the apprentice may file an appeal with the Apprenticeship Program, (WAC 296-05-105). If the apprentice does not timely file an appeal, the decision of the program sponsor is final after 30 calendar days from the date the program sponsor mails the decision to the apprentice. See section "D" below.

D. Apprentice Complaint Review/Appeals Procedures:

1. If the apprentice disagrees with the program sponsor's decision, the apprentice must submit a written appeal to L&I's apprenticeship section within 30 calendar days from the date the decision is mailed by the program sponsor. Appeals must describe the subject matter in detail and include a copy of the program sponsor's decision.

2. The L&I apprenticeship section will complete its investigation within 30 business days from the date the appeal is received and attempt to resolve the matter.

3. If the Apprenticeship section is unable to resolve the matter within 30 business days, the Apprenticeship section issues a written decision resolving the appeal.

4. If the apprentice or sponsor is dissatisfied with L&I's decision, either party may request the WSATC review the decision. Requests for review to the WSATC must be in writing. Requests for review must be filed within 30 calendar days from the date the decision is mailed to the parties.

5. The WSATC will conduct an informal hearing to consider the request for review.

6. The WSATC will issue a written decision resolving the request for review. All parties will receive a copy of the WSATC's written decision.

XI. SPONSOR – RESPONSIBILITIES AND GOVERNING STRUCTURE

The following is an overview of the requirements associated with administering an apprenticeship program. These provisions are to be used with the corresponding RCW and/or WAC. The sponsor is the policymaking and administrative body responsible for the operation and success of this apprenticeship program. The sponsor may assign an administrator or a committee to be responsible for day-to-day operations of the apprenticeship program. Administrators and/or committee members must be knowledgeable in the process of apprenticeship and/or the application of chapter 49.04 RCW and chapter 296-05 WAC and these standards. If applicable, sponsors must develop procedures for:

A. Committee Operations (WAC 296-05-009): (Not applicable for Plant Programs)

Apprenticeship committees must be composed of an equal number of management and non-management representatives from a minimum of four to a maximum of twelve members. Committees must convene meetings at least three times per year attended by a quorum of committee members as defined in these approved standards.

B. Program Operations

The sponsor will record and maintain records pertaining to the administration of the apprenticeship program and make them available to the WSATC or Department upon request. Records required by WAC 296-05-100 will be maintained for five (5) years; all other records will be maintained for three (3) years. Apprenticeship sponsors will submit required forms/reports to the Department of Labor and Industries through one of the two prescribed methods below:

Sponsors shall submit required forms/reports through assigned state apprenticeship consultant.

Or:

Sponsors shall submit required forms/reports through the Apprentice Registration and Tracking System (ARTS), accessed through Secure Access Washington (SAW).

Paper forms as well as ARTS external access forms are available from the sponsor's assigned apprenticeship consultant or online at:

http://www.lni.wa.gov/TradesLicensing/Apprenticeship/FormPub/default.asp.

1. The following is a listing of forms/reports for the administration of apprenticeship programs and the time-frames in which they must be submitted:

   a. Apprenticeship Agreements – within first 30 days of employment
   b. Authorization of Signature forms - as necessary
   c. Approved Training Agent Agreements– within 30 days of sponsor action
   d. Minutes of Apprenticeship Committee Meetings – within 30 days of sponsor approval (not required for Plant program)
   d. Request for Change of Status - Apprenticeship/Training Agreement and Training Agents forms – within 30 days of action by sponsor.
   e. Journey Level Wage Rate – annually, or whenever changed as an addendum to section VII. Apprentice Wages and Wage Progression.
   f. Related Supplemental Instruction (RSI) Hours Reports (Quarterly):
      1st quarter: January through March, due by April 10
      2nd quarter: April through June, due by July 10
      3rd quarter: July through September, due by October 10
      4th quarter: October through December, due by January 10
   g. On-the-Job Work Hours Reports (bi-annual)
      1st half: January through June, by July 30
      2nd half: July through December, by January 31

2. The program sponsor will adopt, as necessary, local program rules or policies to administer the apprenticeship program in compliance with these standards. Requests for revision to these standards of apprenticeship must be submitted 45 calendar days prior to a quarterly WSATC meeting. The Department of Labor and Industries, Apprenticeship Section's manager may administratively approve requests for revisions in the following areas of the standards:

   a. Program name
   b. Sponsor's introductory statement
   c. Section III: Conduct of Program Under Washington Equal Employment Opportunity Plan
   d. Section VII: Apprentice Wages and Wage Progression
   e. Section IX: Related/Supplemental Instruction
   f. Section XI: Sponsor – Responsibilities and Governing Structure
   g. Section XII: Subcommittees
   h. Section XIII: Training Director/Coordinator

3. The sponsor will utilize competent instructors as defined in WAC 296-05-003 for RSI. Furthermore, the sponsor will ensure each instructor has training in teaching techniques and adult learning styles, which may occur before or within one year after the apprenticeship instructor has started to provide instruction.

C. Management of Apprentices:

1. Each apprentice (and, if under 18 years of age, the parent or guardian) will sign an apprenticeship agreement with the sponsor, who will then register the agreement with the Department before the apprentice attends RSI classes, or within the first 30 days of employment as an apprentice. For the purposes of industrial insurance coverage and prevailing wage exemption under RCW 39.12.021, the effective date of registration will be the date the agreement is received by the Department.

2. The sponsor must notify the Department within 30 days of all requests for disposition or modification to apprentice agreements, which may include:

   a) Certificate of completion
   b) Additional credit
   c) Suspension (i.e. military service or other)
   d) Reinstatement
   e) Cancellation
   f) Corrections
   g) Step Upgrades
   h) Probation Completion date
   i) Other (i.e., name changes, address)
   j) Training Agent Cancellation

3. The sponsor commits to rotate apprentices in the various processes of the skilled occupation to ensure the apprentice is trained to be a competent journey-level worker.

4. The sponsor shall periodically review and evaluate apprentices before advancement to the apprentice's next wage progression period. The evidence of such advancement will be the record of the apprentice's progress on the job and during related/supplemental instruction.

5. The sponsor has the obligation and responsibility to provide, insofar as possible, reasonably continuous employment for all apprentices in the program. The sponsor may arrange to transfer an apprentice from one training agent to another or to another program when the sponsor is unable to provide reasonably continuous employment, or they are unable to provide apprentices the diversity of experience necessary for training and experience in the various work processes as stated in these standards. The new training agent will assume all the terms and conditions of these standards. If, for any reason, a layoff of an apprentice occurs, the apprenticeship agreement will remain in effect unless canceled by the sponsor.

6. An apprentice who is unable to perform the on-the-job portion of apprenticeship training may, if the apprentice so requests and the sponsor approves, participate in related/supplemental instruction, subject to the apprentice obtaining and providing to the sponsor written requested document/s for such participation. However, time spent will not be applied toward the on-the-job portion of apprenticeship training.

7. The sponsor shall hear and decide all complaints of violations of apprenticeship agreements.

8. Upon successful completion of apprenticeship, as provided in these standards, and passing the examination that the sponsor may require, the sponsor will recommend the WSATC award a Certificate of Completion of Apprenticeship. The sponsor will make an official presentation to the apprentice who has successfully completed his/her term of apprenticeship.

D. Training Agent Management:

1. The sponsor shall offer training opportunities for apprentices by ensuring reasonable and equal working and training conditions are applied uniformly to all apprentices. The sponsor shall provide training at an equivalent cost to that paid by other employers and apprentices participating in the program. The sponsor shall not require an employer to sign a collective bargaining agreement as a condition of participation.

2. The sponsor must determine whether an employer can adequately furnish proper on the job training to an apprentice in accordance with these standards. The sponsor must also require any employer requesting approved training status to complete an approved training agent agreement and to comply with all federal and state apprenticeship laws, and these standards.

3. The sponsor will submit training agent agreements to the Department with a copy of the agreement and/or the list of approved training agents within thirty calendar days from the effective date. Additionally, the sponsor must submit rescinded training agent agreements to the Department within thirty calendar days of said action.

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

1. Apprenticeship committees shall elect a chairperson and a secretary who shall be from opposite interest groups, i.e., chairperson-employers; secretary-employees, or vice versa. If the committee does not indicate its definition of quorum, the interpretation will be "50% plus 1" of the approved committee members. The sponsor must also provide the following information:

   a. Quorum: **N/A**

   b. Program type administered by the committee: **PLANT**

   c. The employer representatives shall be: **N/A**

   d. The employee representatives shall be: **N/A**

F. Plant programs

For plant programs the WSATC or the Department designee will act as the apprentice representative. Plant programs shall designate an administrator(s) knowledgeable in the process of apprenticeship and/or the application of chapter 49.04 RCW and chapter 296-05 WAC and these standards.

The designated administrator(s) for this program is/are as follows:

Mackenzi Ellis
3541 Industrial Way
P.O. Box 865
Longview, WA 98632

Scott Presseisen
3541 Industrial Way
P.O. Box 865
Longview, WA 98632

XII. SUBCOMMITTEE:

Subcommittee(s) approved by the Department, represented equally from management and non-management, may also be established under these standards, and are subject to the main committee. All actions of the subcommittee(s) must be reviewed by the main committee. Subcommittees authorized to upgrade apprentices and/or conduct

disciplinary actions must be structured according to the same requirements for main committees.

NONE

XIII. TRAINING DIRECTOR/COORDINATOR:

The sponsor may employ a person(s) as a full or part-time training coordinator(s)/ training director(s). This person(s) will assume responsibilities and authority for the operation of the program as are delegated by the sponsor.

NONE

Teri Gardner 11-26-19

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

Journey Level Wage Rate

From which apprentices' wages rates are computed

TO: Washington State Apprenticeship & Training Council

From Axiall Corporation, a Westlake Company Apprenticeship
(NAME OF STANDARDS)

Occupations	County(s)	Journey Level Wage Rate	Effective Date:
Industrial Maintenance Mechanic	Cowlitz County	$38.80	09/04/2019
Industrial Maintenance Electrician	Cowlitz County	$41.65	09/04/2019

Received 12/02/19
Tacoma EA

INTERNATIONAL CHEMICAL

WORKERS UNION COUNCIL/UFCW

1665 West Market Street Akron, OH. 44313 /330-926-1444
FRANK CYPHERS PRESIDENT NEAL DILLARD SECRETARY TREASURER.

December 2, 2019

Luke Hart Plant Manager
Westlake Chemicals
3541 Industrial Way
Longview, WA 98632

Re: Apprenticeship

Dear Sir:

After careful review of the Company's/State of Washington's Apprenticeship proposal the Union finds no objections. The union further concurs with the implementation of this program at the Longview facility as soon as possible and stands ready to meet and confer with the Company if needed.

Regards,

Vincent Diaz

Vincent Diaz Vice President
Region 1 Director ICWUC/UFCW

Tacoma EA

Teri Gardner 11-26-19

Apprenticeship Related/Supplemental Instruction (RSI) Plan Review

Program Sponsor Axiall Corporation, a Westlake Company	
Skilled Occupational Objective Industrial Maintenance Electrician	
Term/OJT Hours 8000	Total RSI Hours 594
Training Provider Lower Columbia College	

By the signature placed below, the **program sponsor** agrees to provide the prescribed RSI for each registered apprenticeship and assures that:

1. The RSI content and delivery method is and remains reasonably consistent with the latest occupational practices, improvements, and technical advances.
2. The RSI is coordinated with the on-the-job work experience.
3. The RSI is provided in safe and healthful work practices in compliance with WISHA and applicable federal and state regulations.

Mackenzi Ellis
Printed Name of Program Sponsor

Signature of Program Sponsor

By the signature placed below, the **training provider** assures that:

1. The RSI will be conducted by instructors who meet the qualifications of "competent instructor" as described in WAC 296-05-003.
   a. Has demonstrated a satisfactory employment performance in his/her occupation for a minimum of three years beyond the customary learning period for that occupation; and
   b. Meets the State Board for Community and Technical Colleges requirements for a professional technical instructor (see WAC 131-16-080 through -094), or be a subject matter expert, which is an individual, such as a journey worker, who is recognized within the industry as having expertise in a specific occupation; and
   c. Has training in teaching techniques and adult learning styles, which may occur before or within one year after the apprenticeship instructor has started to provide the related technical instruction.
2. If using alternative forms of instruction, such as correspondence, electronic media, or other self-study, such instruction is clearly defined.

Tamra Bell
Print Name Training Provider

Signature of Training Provider

Dean of Instruction
Title of Training Provider

Lower Columbia College
Organization of Training Provider

If there are additional training providers, please provide information and signatures on the next page.

Additional Resources: *Apprenticeship Related Supplemental Instruction (RSI) Plan Review Glossary of Term (F100-519-000)* and *Apprenticeship Related Supplemental Instruction (RSI) Plan Review Criteria (F100-521-000).*

SBCTC Program Administrator has reviewed RSI plan and recommendations of the Trade Committee.

Click or tap here to enter text.
Print Name of SBCTC Program Administrator

Signature of SBCTC Program Administrator

Date

☐ SBCTC recommends approval

☐ SBCTC recommends return to sponsor

Additional Training Providers (if necessary)

Click or tap here to enter text.
Print Name Training Provider

Signature of Training Provider

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Organization of Training Provider

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Organization of Training Provider

Program Sponsor:	Skilled Occupational Objective:
Axiall Corporation, a Westlake Company	Industrial Maintenance Electrician

Note: The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

Describe minimum hours of study per year in terms of (check one):

☒ 12-month period from date of registration.
☐ Defined 12-month school year.
☐ 2,000 hours of on-the-job training.

Element/Course: MFG100 Foundational Skills for the Trades	Planned Hours: 33
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Emphasizes development of foundational skills for successful completion of vocational courses. Develops techniques and strategies in time management, study habits, technical reading, communication, computer literacy, and test preparation. Explores career options while learning industry related terminology, tools and LCC shop practices.	

Element/Course: MFG105 Industrial Safety	Planned Hours: 33
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Provides instruction on safety topics and practices specifically related to industrial work environments. Topics include an overview of OSHA/WISHA requirements, personal protective equipment, energy lock-out/tag-out procedures, material handling, electrical safety, machine guarding, hazardous materials, fire prevention, hazard identification and control, and safety inspection.	

Element/Course: MATH106 Industrial Mathematics	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry.	

Element/Course: PMFG150 Electrical and Electronic Fundamentals	Planned Hours: 88
Mode of Instruction (check all that apply) ☒ Classroom ☒ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Introduces the nature and principles of electricity and electrical/electronic devices. Focuses on general principles, safety, industrial applications, and includes topics related to both DC and AC circuits. Topics explored include basic theory and direct current circuits, measuring instruments, interpretation of electrical and schematic diagrams, ohms law, basic electrical circuit analysis, applied mathematical concepts used in solving for values in series and parallel circuits, electrical	

safety and basic magnetic concepts. Additional topics are alternating current circuits, the use of AC measuring instruments, single phase and three phase AC distribution systems, transformers, and an overview of basic electronic devices, their function, and common applications. The course is designed for individuals entering the electrical trades, maintenance personnel or production/process operators.

Element/Course: IMT134 Electrical Test Instruments	Planned Hours: 22
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Covers the proper use of clamp-on ammeters, wheatstone bridges, and oscilloscopes. Analog and digital meters are covered, as well as how to interpret oscilloscope waveforms.	

Element/Course: IMT135 Electrical Print Reading	Planned Hours: 11
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Teaches participants to read and interpret wiring diagrams, single line diagrams, building electrical diagrams, and ladder diagrams. Relevant schematic symbols and the application of various diagrams are also covered.	

Element/Course: IM140 Fundamentals of Industrial Measurement	Planned Hours: 22
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Introduces process control principles of measuring temperature, pressure, level, and flow. A wide variety of measuring instruments, including manometers, mechanical pressure sensors, transducers, thermometers, pyrometers, and thermistors, are described and demonstrated.	

Element/Course: PMFG151 Process Control Equipment	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Provides an overview of process control equipment for operating personnel in industries utilizing process manufacturing techniques. Introduces the fundamentals of process of control, control equipment and equipment fault identification and troubleshooting.	

Element/Course: PMFG201 Electrical Control Equipment	Planned Hours: 33
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Introduces the operation, troubleshooting, and adjustment of various types of electrical control equipment. Fuses, molded case circuit breakers, and control switches are covered. Includes basic principles of motor starters and troubleshooting of control circuits.	

Element/Course: PMFG202 Electric Motors	Planned Hours: 22
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	

Covers the concepts, maintenance, and testing of AC and DC motors. Includes a study of components and operation of a variety of AC motors and DC motors. Single-phase and three-phase motors are covered.

Element/Course: IMT234 Digital Electronic Theory	Planned Hours: 22
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Covers the operation and troubleshooting of various types of digital circuits. Binary logic and the use of logic gates, codes, encoders, decoders, counters, registers and data transmission are explored.	

Element/Course: PMFG154 Instrumentation Fundamentals and PLC's	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Introduces principles of instrumentation controls and devices. Discusses the process of converting information into electrical or pneumatic signals for measurement and control, and its industrial applications. Introduces compressed air systems, programmable logic control, current-to-pressure, and piping instrument diagrams. Builds on knowledge of electrical fundamentals.	

Element/Course: IMT244 Instrument Calibration	Planned Hours: 33
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Covers the calibration of pressure, differential pressure, temperature, flow, and level measurement instruments. Calibration basics, proper instrument performance, and common instrument errors are explained. Specific instruments covered include pressure transmitters, thermocouples, various types of flow meters, and electronic displacement transmitters.	

Element/Course: IMT245 Digital Instrumentation	Planned Hours: 11
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Introduces the principles of digital instrumentation and signal transmission. Principles of operation, the functions of electronic components, signal characteristics, and operation of single-loop digital controllers are included.	

Element/Course: IMT265 Applied Electrical Maintenance Technics	Planned Hours: 33
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Offers instruction in application of a wide variety of electrical skills with emphasis on problem solving. Capstone-like course intended to provide the student with an opportunity to integrate several skills. Should be taken towards the end of the program.	

Element/Course: IT100 IT Fundamentals	Planned Hours: 66
Mode of Instruction (check all that apply) ☒ Classroom ☒ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	

Description of element/course:

Develops the knowledge to identify and explain basic computer components, set up a basic workstation, conduct basic software installation, establish basic network connectivity, identify compatability issues and identify/prevent basic security risks. This course will also focus on the areas of safety and preventative maintenance of computers and is intended for students who are considering a career in IT and later considering the pursuit of a Comptia A+ or similar certification.

Tacoma EA
Teri Gardner 11-26-19

Apprenticeship Related/Supplemental Instruction (RSI) Plan Review

Program Sponsor Axiall Corporation, a Westlake Company	
Skilled Occupational Objective Industrial Maintenance Mechanic	
Term/OJT Hours 8000	Total RSI Hours 660 with Machining for Related Occupations Class (as referenced from LCC Class List) OR 726 with Machine Shop I (as referenced from LCC Class List)
Training Provider Lower Columbia College	

By the signature placed below, the **program sponsor** agrees to provide the prescribed RSI for each registered apprenticeship and assures that:

1. The RSI content and delivery method is and remains reasonably consistent with the latest occupational practices, improvements, and technical advances.
2. The RSI is coordinated with the on-the-job work experience.
3. The RSI is provided in safe and healthful work practices in compliance with WISHA and applicable federal and state regulations.

Mackenzie Ellis
Printed Name of Program Sponsor

Signature of Program Sponsor

By the signature placed below, the **training provider** assures that:

1. The RSI will be conducted by instructors who meet the qualifications of "competent instructor" as described in WAC 296-05-003.
   a. Has demonstrated a satisfactory employment performance in his/her occupation for a minimum of three years beyond the customary learning period for that occupation; and
   b. Meets the State Board for Community and Technical Colleges requirements for a professional technical instructor (see WAC 131-16-080 through -094), or be a subject matter expert, which is an individual, such as a journey worker, who is recognized within the industry as having expertise in a specific occupation; and
   c. Has training in teaching techniques and adult learning styles, which may occur before or within one year after the apprenticeship instructor has started to provide the related technical instruction.
2. If using alternative forms of instruction, such as correspondence, electronic media, or other self-study, such instruction is clearly defined.

Tamra Bell
Print Name Training Provider

Signature of Training Provider

Dean of Instruction
Title of Training Provider

Lower Columbia College
Organization of Training Provider

If there are additional training providers, please provide information and signatures on the next page.

Additional Resources: *Apprenticeship Related Supplemental Instruction (RSI) Plan Review Glossary of Term (F100-519-000) and Apprenticeship Related Supplemental Instruction (RSI) Plan Review Criteria (F100-521-000).*

SBCTC Program Administrator has reviewed RSI plan and recommendations of the Trade Committee.

Click or tap here to enter text.

Click or tap here to enter text.
Print Name of SBCTC Program Administrator

Signature of SBCTC Program Administrator

Date

☐ SBCTC recommends approval ☐ SBCTC recommends return to sponsor

Additional Training Providers (if necessary)

Click or tap here to enter text.
Print Name Training Provider

Signature of Training Provider

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Click or tap here to enter text.
Print Name Training Provider

Signature of Training Provider

Program Sponsor:	Skilled Occupational Objective:
Axiall Corporation, a Westlake Company	Industrial Maintenance Mechanic

Note: The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

Describe minimum hours of study per year in terms of (check one):

☒ 12-month period from date of registration.
☐ Defined 12-month school year.
☐ 2,000 hours of on-the-job training.

Element/Course: BLPT150 Machinists Blueprint Reading	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Provides basic general information in reading and understanding plans and drawings that will be useful to vocational students. Focusing on line and symbol conventions used in industrial blueprints and visualization of solid objects from orthographic and isometric projections, the course leads to development of required skills for industrial design and problem solving. It also provides comprehensive information needed by persons in the machine trades for reading industrial blueprints and emphasizes specifications of materials, geometrical tolerancing, surface finishes, AWS welding symbols, and related foundry processes	

Element/Course: IMT106 Industrial Lubrication	Planned Hours: 11
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Introduces various types of lubrication systems and their maintenance requirements, including ring, bath, splash, and constant level forced feed lubrication systems. Participants learn the importance of following lubrication schedules, how to change common types of oil filters, and how to properly handle and store lubricants to prevent lubricant contamination.	

Element/Course: IMT107 Mechanical Seals	Planned Hours: 11
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Covers the function, operation and repair of common mechanical seals. Failure analysis and identification seal removal and disassembly/re-assembly are included.	

Element/Course: IMT108 Bearings – Reducing Failure Rate	Planned Hours: 11
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Covers removal, inspection, selection, handling, installation, and troubleshooting of bearings according to manufacturer's instructions and best practices. Participants learn to identify replacement bearings and install and maintain the bearings properly using the right tools.	

Element/Course: IMT110 Rotating Equipment	Planned Hours: 44
Mode of Instruction (check all that apply) ☐ Classroom ☐ Lab ☒ Online ☐ Self-Study	

Provided by: Lower Columbia College

Description of element/course:

Explores the use of predictive maintenance techniques as a tool for prolonging equipment life and preventing major problems. Studies vibration analysis, lubricant and trend analysis, and techniques for extending bearing life. Principles of and procedures for reverse double dial alignment are also included

Element/Course: IMT200 Centrifugal Pump Repair	Planned Hours: 11

Mode of Instruction (check all that apply)

☐ Classroom ☐ Lab ☒ Online ☐ Self-Study

Provided by: Lower Columbia College

Description of element/course:

Explains the basic operation of a "typical" centrifugal pump. This course covers troubleshooting as well as disassembly, inspection, and reassembly, and include general guidelines for mechanical seal installation.

Element/Course: IMT204 Air Compressor Repair	Planned Hours: 11

Mode of Instruction (check all that apply)

☐ Classroom ☐ Lab ☒ Online ☐ Self-Study

Provided by: Lower Columbia College

Description of element/course:

Explains the basic operation, disassembly, inspection, repair, reassembly and troubleshooting of reciprocating air compressors. Problems such as knocking, failure to unload, and excessive discharge temperature are included. Prevention of injury/damage is also covered.

Element/Course: IMT205 Valve Repair	Planned Hours: 11

Mode of Instruction (check all that apply)

☐ Classroom ☐ Lab ☒ Online ☐ Self-Study

Provided by: Lower Columbia College

Description of element/course:

Covers the disassembly, inspection, and repair of gate, globe, and control valves. Emphasis is placed on the proper functioning and maximization of performance through proper inspection and maintenance.

Element/Course: IMT209 Pipefitting	Planned Hours: 22

Mode of Instruction (check all that apply)

☐ Classroom ☐ Lab ☒ Online ☐ Self-Study

Provided by: Lower Columbia College

Description of element/course:

Introduces the characteristics of piping systems and explains how to read associated blueprints, methods of selecting, measuring, cutting, threading, installing and insulating pipe are covered.

Element/Course: MFG140 Applied Hydraulics	Planned Hours: 44

Mode of Instruction (check all that apply)

☒ Classroom ☐ Lab ☐ Online ☐ Self-Study

Provided by: Lower Columbia College

Covers basic problems of hydraulics, fluids, power, hydraulics actuators, controls, pressures and circuits, and principles of industrial applications. (Formerly known as IMT 150)

Element/Course: WELD105 Weld (Any Welding Course)	Planned Hours: 99

Mode of Instruction (check all that apply)

☒ Classroom ☒ Lab ☐ Online ☐ Self-Study

Provided by: Lower Columbia College

Description of element/course:

Studies shop safety practices and common welding techniques for related curriculums. The common welding techniques will include oxy-acetylene welding, cutting and brazing, SMAW stick welding, and FCAW-G wire feed welding

Element/Course: MFG100 Foundational Skills for the Trades	Planned Hours: 33
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Emphasizes development of foundational skills for successful completion of vocational courses. Develops techniques and strategies in time management, study habits, technical reading, communication, computer literacy, and test preparation. Explores career options while learning industry related terminology, tools and LCC shop practices.	

Element/Course: MATH106 Industrial Mathematics	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry.	

Element/Course: PMFG110 Industrial and Predictive Maintenance Fundamentals	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Introduces essential elements of industrial maintenance. Provides an overview of the jobs and tasks generally performed in manufacturing operations. Covers an overview of general types of industrial equipment, the proper use of a variety of hand tools and measuring instruments, and an exploration of fasteners, bearings, bushings, seals, and lubrication systems. Presents safety procedures including lockout/tag out of electrical/mechanical energy systems, sketching using ANSI standards, layout and machinery installation, and basic troubleshooting techniques.	

Element/Course: PMFG210 Advanced Industrial Maintenance	Planned Hours: 55
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Description of element/course: Explores more advanced industrial maintenance topics, including preventative maintenance, centrifugal pump repair, valve repair, rigging and lifting, vibration analysis, and shaft alignment. Safe work practices are stressed, and relevant safety topics are covered during the course. *PMFG110 prerequisite*	

Element/Course: IMT264 Applied Mechanical Maintenance Techs	Planned Hours: 33
Mode of Instruction (check all that apply) ☒ Classroom ☐ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Offers instruction in application of a wide variety of maintenance skills to a variety of mechanical maintenance situations. Practical application and problem solving are emphasized. Capstone-like	

course intended to provide the student with an opportunity to integrate several skills. Also supports supplemental industrial training.

Element/Course: MASP107 Machining For Related Occupations	Planned Hours: 99
Mode of Instruction (check all that apply) ☒ Classroom ☒ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
This course will expose students to three basic types of machine tools as well as general shop safety, layout, cutting tool geometry, and precision measuring. The three areas of focus will be hole operations such as drilling, reaming, and tapping, engine lathe operations turning, facing, and boring, the basic operation of the vertical milling machine.	

Element/Course: MASP111 Machine Shop I	Planned Hours: 165
Mode of Instruction (check all that apply) ☒ Classroom ☒ Lab ☐ Online ☐ Self-Study Provided by: Lower Columbia College	
Designed to introduce the beginning student to the safe operation of basic hand tools, saws, bench grinders, drill press and the engine lathe. The student will use these tools to complete basic projects designed to use the equipment in a wide variety of operations to develop basic skills.	