

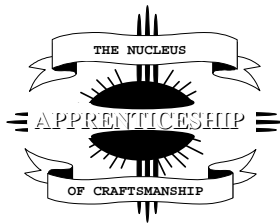


MINIMUM GUIDELINE STANDARDS OF APPRENTICESHIP  
Adopted by

**OREGON STATE LIMITED ENERGY TECHNICIAN JATC**

<u>Skilled Occupational Objective(s):</u>	(sponsor) <u>SOC#</u>	<u>SYMBOL</u>	<u>SUFFIX</u>	<u>TERM</u>
Limited Energy Technician - B	47-2111	0459	100	4000 hours

MA#	8007	SOC Title	Electricians	License	Limited Energy Technician - Class B
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APPROVED BY THE  
Oregon State Apprenticeship and Training Council  
REGISTERED WITH THE  
Apprenticeship and Training Division  
Oregon State Bureau Labor and Industries  
800 NE Oregon Street  
Portland, Oregon 97232

APPROVAL:

September 17, 1998  
Initial Approval Date

By:

**JACK ROBERTS**  
Chairman of Council

December 19, 2002  
Last Date Revised

By:

**STEPHEN SIMMS**  
Secretary of Council

## APPRENTICESHIP STANDARDS

The Oregon State Apprenticeship and Training Council (OSATC) has the authority to develop, administer, and enforce apprenticeship program standards (Standards) for the operation and success of an apprenticeship or on-the-job-training program in the State of Oregon. Apprenticeship programs and committees function to administer, exercise or relinquish authority only with the consent of the OSATC and only apprentices registered with or recognized by the Oregon State Bureau of Labor and Industries (BOLI), Apprenticeship and Training Division (ATD) will be recognized by the OSATC. Parties signatory to these apprenticeship standards declare that their purpose and policy is to establish and sponsor an organized system of registered apprenticeship and training education.

These Standards are in conformity with and are to be used in conjunction with the Apprenticeship Rules, Chapter 839-011 OAR (Oregon Administrative Rules); Apprenticeship and Training Statutes, Chapter 660 ORS (Oregon Revised Statute); The National Apprenticeship Act, 29 U.S.C. (United States Code) 50; Apprenticeship Programs, Title 29 Part 29 CFR (Code of Federal Regulations); and Equal Employment Opportunity in Apprenticeship and Training, Title 29 Part 30 CFR which collectively govern the employment and training in apprenticeable occupations. They are part of the apprenticeship agreement and bind all signers to compliance with all provisions of registered apprenticeship.

If approved by the council, such amendment(s) and such changes as adopted by the council shall be binding to all parties on the first day of the month following such approval. Sponsors shall notify apprentices and training agents of changes as they are adopted by the council. If and when any part of these Standards becomes illegal, as it pertains to federal and/or state law, that part and that part alone will become inoperative and null and void, and the Bureau of Labor and Industries (BOLI) may recommend language that will conform to applicable law for adoption by the OSATC. The remainder of the Standards will remain in full force and effect.

See ORS Chapter 660 & OAR 839-011 for the definitions necessary for use with these Standards.

*Sections of the standard inside a border are specific to the individual standard and may be modified by the sponsor by submitting a revised standard for approval by the Oregon State Apprenticeship and Training Council. All other sections of the standard are boilerplate and may only be modified by the Council.*

## STATE COMMITTEES AND MINIMUM GUIDELINE STANDARDS

State joint apprenticeship committees are formed for the purpose of promoting and coordinating the apprenticeship goals of the occupation and for developing statewide standards and related instructional materials. At its discretion, or upon petition by two or more local committees directly affected by minimum guideline standards, OSATC will direct ATD staff to convene a state joint committee composed of members of local committees training in the occupation. The state committee will develop for Council approval proposed or revised Minimum Guideline Standards as may be dictated by the needs of the industry and occupation.

Minimum guidelines are established only in the following standards areas (OAR 839-011-0360):

Minimum qualifications (Section II below)

Hours of employment (Section IV)

Maximum probationary period (Section V)

Maximum ratio of apprentices to journey persons (Section VI)

Work processes and approximate hours (Section VIII)

Minimum related training hours and subjects (Section IX)

## II. MINIMUM QUALIFICATIONS:

Minimum qualifications must be clearly stated and applied in a nondiscriminatory manner (See ORS 660.126 (1b)). Documentation must be provided for all minimum qualifications:

Age:	Must be at least 17 years of age to apply and may not be registered until they are at least 18 years of age
Education:	Must be a high school graduate or have obtained the equivalent GED certificate; Must have completed one year of high school algebra, integrated math 2, or equivalent post-high school algebra course(s) with a grade of C or better, or submit equivalent math placement test scores
Physical:	None
Testing:	None
Other:	None

## IV. TERM of APPRENTICESHIP:

The term of apprenticeship shall be 4,000 hours of employment.

NOTE: Total hours in local committee standards may not fluctuate below requirements dictated by minimum guideline standards (OAR 839-011-0370).

In licensed occupations the apprentice must complete the minimum hours of documented legal experience.

## V. INITIAL PROBATIONARY PERIOD:

The maximum probationary period shall be the first 1,000 OJT hours of employment after the current registration to the local committee standard. (See ORS 660.126 (g))

## VI. RATIO OF APPRENTICES TO JOURNEY LEVEL WORKERS:

1. There shall be a maximum numeric ratio of apprentices to journey-level workers consistent with proper supervision, training, safety and continuity of employment. (See ORS 126 (1f))
2. The ratio shall be specifically and clearly stated as to its application to the job site, workforce, department, shift, plant or combination therein. (See ORS 660.126 (1f))

The maximum ratio of apprentices to journey-level worker shall not be more than one (1) apprentice to the first one (1) journey-level worker on the job. (See ORS 660.126 (f))

**VII. APPRENTICE WAGES and WAGE PROGRESSION:**

1. The average wage for those journeymen employed by the participating employer is to be determined by the local apprenticeship committee.
2. The progressive wage rate to be paid the apprentice is to be determined by the local committee:

The average wage in this occupation will be updated by the local committee at least annually and will be recorded in the minutes of the committee.

**VIII. WORK PROCESSES:**

Work processes	Approximate hours
a. Limited energy installations, including: cables and supports, wire pulling, splices, conduit, flex tray and duct, control panels and controls, wiring devices, removal and finish work, stock room and materials, overhead and underground	1,750
b. Troubleshooting and maintenance	250
c. Occupation-specific applications, including:	2,000
1) Communication systems, including data telecommunication, intercom, paging	
2) Specialized control systems, including HVAC, medical, boiler, clock, instrumentation	
<b>TOTAL</b>	<b>4000</b>

NOTE: The committee realizes that the completion of 4000 hours of on-the-job training is the ideal, but recognizes that most apprentices will not be able to fulfill the total amount of hours specified in every work process as set forth in this standard. When an apprentice is unable to fulfill the total work hours in each work process the committee will evaluate the apprentice’s knowledge, skills and abilities and provide appropriate additional related instruction to assure that competency is acquired in each work process. The evaluation and summary of the additional instruction will be noted in the apprentice’s file.

Local committees proposing new or revised standards affected by minimum guideline standards will be allowed to redistribute no more than 5% of on-the-job training hours within existing individual work processes. (OAR 839-011-0370)

In licensed occupations, apprentices must complete the minimum required total hours prior to being referred to the license examination.

**IX. RELATED/SUPPLEMENTAL INSTRUCTION:**

A minimum of 144 hours of related training shall be required during each year the apprentice is registered in the program. (See ORS 660.126 (e))

The following is a summary of related instruction including required class hours in each element of instruction. A committee may establish and submit clear objectives and outcomes in lieu of hours for each class subject. (See ORS 660.157)

Apprentices must receive a 'C' or better in graded classes and a 'Pass' in non-graded classes (see OAR 918-282-0170 to -0365).

Course	Hours
<p>A minimum of 144 hours to include all of the following components:</p> <ul style="list-style-type: none"> <li>a. Electrical mathematics</li> <li>b. Safety &amp; accident prevention</li> <li>c. Care &amp; use of hand &amp; power tools</li> <li>d. Blueprint reading &amp; electrical symbols</li> <li>e. Introduction to the National Electrical Code</li> <li>f. Electrical fundamentals &amp; basic theory, including AC &amp; DC</li> <li>g. Electrical measuring devices</li> <li>h. Wiring methods</li> <li>i. Related electrical statutes &amp; rules</li> <li>j. Fundamentals of electronics</li> <li>k. Transformers</li> <li>l. Lighting circuits</li> <li>m. Basic mechanics; applied physics and theory</li> </ul>	
<p>A minimum of 144 hours to be distributed among the following components:</p> <ul style="list-style-type: none"> <li>a. Communication systems, including data telecommunication, intercom, paging</li> <li>b. Specialized control systems, including HVAC, medical, boiler, clock, instrumentation</li> </ul>	
<p><u>Program Objectives:</u> Each local committee will establish measurement tools to verify that each apprentice has met the minimum competencies in each component listed below prior to referral to the electrical licensing examination:</p> <ul style="list-style-type: none"> <li>a. Demonstrate math and algebra skills as they relate to the electrical trade</li> <li>b. Demonstrate basic rules of safety and how they affect all people on the job</li> <li>c. Demonstrate proper care and use of hand and power tools used in the electrical trade</li> <li>d. Demonstrate working knowledge of architectural and electrical blueprints, including electrical symbols</li> <li>e. Identify NEC articles that apply to assigned tasks</li> <li>f. Demonstrate problem-solving with series and parallel AC and DC circuits</li> <li>g. Perform system measurements testing and calibration</li> <li>h. Demonstrate knowledge of low voltage structure wiring system design and installation</li> <li>i. Demonstrate knowledge of Oregon electrical statutes and rules</li> <li>j. Identify basic electronic components used in limited energy installations</li> <li>k. Demonstrate knowledge of transformer theory and identify types of transformers</li> <li>l. Demonstrate basic physical laws and how they relate to the electrical trade</li> <li>m. Demonstrate basic knowledge of communication systems, including data telecommunication, intercom, and paging systems</li> <li>n. Demonstrate basic knowledge of specialized control systems, including HVAC, medical, boiler, clock, and instrumentation control systems</li> </ul>	

#### XI. COMMITTEE – RESPONSIBILITIES AND COMPOSITION:

The following is an overview of the requirements associated with administering an apprenticeship committee and/or program. These provisions are to be used in conjunction with the corresponding ORS and/or OAR.

1. State joint apprenticeship committees are formed for the purpose of promoting and coordinating the apprenticeship goals of the occupation and for developing statewide standards and related instructional materials. At its discretion, or upon petition by two or more local committees directly affected by minimum guideline standards, OSATC will direct ATD staff to convene a state joint committee.
2. Each local committee training in the occupation shall designate no more than one employer and one employee representative (with alternates) to the state joint committee; notification of this action must be submitted to ATD in writing.
3. To determine a quorum, the total number of authorized representatives appointed by local committees will be counted; appointed representatives of local trade committees will be counted only if they are present at the state joint committee meeting. A quorum consists of 50% plus one of the total authorized local committee representatives.
4. The state joint committee will develop for OSATC approval proposed or revised Minimum Guideline Standards as dictated by the needs of the industry and occupation.
  - a. New or revised Minimum Guideline Standards presented to the OSATC for approval shall be first distributed to local committees training in the occupation for review and comment.
  - b. Each local committee shall have no more than 30 days to present any written objections they may have. After reviewing this information the state joint committee will prepare its final recommendations to OSATC.
  - c. If consensus is not reached by the state joint committee, a majority and minority report will be submitted to OSATC for consideration. The geographic area covered by each participating local committee as well as the number of apprentices served and the number of training agents affected will be taken into consideration in the OSATC's decision.
5. Each state joint committee may adopt rules consistent with ORS Chapter 660 as it deems necessary for the orderly conduct of its meetings. Unless the state committee determines otherwise, ATD staff will prepare and distribute state joint committee agendas and minutes as needed.