

Area: Apprenticeship  
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A.A. Degree: Carpenter Apprenticeship  
 Drywall/Lathing Apprenticeship  
 Electrical Apprenticeship  
 Ironworker Apprenticeship  
 Sheet Metal Apprenticeship  
 Sheet Metal Service Technician  
 Apprenticeship

Certificates: Carpenters Apprenticeship  
 Drywall/Lathing Apprenticeship  
 Electrical Apprenticeship  
 Ironworker Apprenticeship  
 Residential/Commercial Electrician Trainee  
 Sheet Metal Apprenticeship  
 Sheet Metal Service Technician  
 Apprenticeship

American River College conducts, in cooperation with the local construction unions, a number of apprenticeship programs (most of which can lead to an Associates of Arts degree). An apprenticeship program is a formal system of career training from two to five years that combines paid employment, on-the-job training and job related college level instruction in order to develop highly skilled workers.

Apprenticeship programs are a cooperative effort between the Joint Apprenticeship Training Committee (JATC) and the college. The JATC is composed of representatives from both labor and management from each apprenticeship area and their purpose is to oversee apprenticeship training. All American River College apprenticeship programs are approved by the Division of Apprenticeship Standards of the California Department of Industrial Relations.

Enrollment in an apprenticeship course is limited to registered apprentices, however anyone meeting the apprenticeship requirements can apply for acceptance. Information on admission to apprenticeship programs can be obtained from the local JATC having jurisdiction over the trade in which you are interested. Listed below are the program types and contact persons.

### Carpenter Apprenticeship

The Carpenter Apprenticeship program concentrates on training apprentices to the specific levels required for the construction industry and has been approved by the State of California Department of Apprenticeship Standards. Training emphasis includes safety, blueprint reading, residential and commercial construction processes, building codes, estimation, and various carpentry topics.

#### Student Learning Outcomes

*Upon completion of this program, the student will be able to:*

- Demonstrate safe working practices in a field construction environment.
- Demonstrate proper selection, use, care, preparation, and handling of the carpenter's tools of the trade.
- Analyze, interpret, and apply national building codes relating to carpentry.
- Analyze and interpret residential and commercial construction blueprints.

- Evaluate, layout, and construct various systems such as floor, wall, roof, and concrete form.
- Evaluate and layout a building site using architectural drawings.
- Calculate elevations by using an engineer's rod and various leveling devices.
- Estimate and order material for construction projects.
- Identify and select appropriate materials for each phase of construction.
- Develop interpersonal skills with customers, co-workers, and different trades-workers.
- Plan projects with given information such as blueprints, specifications, and contract documents.

#### Career Opportunities

Upon completion of the Carpenter Apprenticeship degree or certificate, students may find employment in the following sectors: government, residential and commercial construction and maintenance, utilities, and facilities management.

For more information, contact:  
 Program Director  
 8000 Chadbourne Rd, Suite A  
 Fairfield, CA 95485  
 (707) 399-2880

Requirements	Degree or Certificate	36.3 Units
CARPT 102	Worker Safety and Tool Skills .....	1.4
CARPT 104	The Apprentice and the Trade .....	2
CARPT 110	Foundations and Floors .....	1
CARPT 112	Structural Framing .....	1
CARPT 114	Form Detailing, Construction & Erection .....	1
CARPT 120	Exterior Finish .....	1
CARPT 122	Interior Finish .....	1
CARPT 130	Layout/Leveling Construction Site Practice .....	1
CARPT 140	Interior Systems .....	1.3
CARPT 142	Engineered Structural Systems .....	1
CARPT 150	Concrete - Precast and Prestressed .....	1
CARPT 160	Blueprint Reading-Residential .....	1.3
CARPT 162	Blueprint Reading-Commercial .....	1.3
CARPT 170	Roof Framing .....	1
CARPT 180	Stair Building .....	1
CARPT 190	Introduction to Welding and Cutting .....	1
CARPT 200	Construction Mathematics & Introduction to Working Drawing .....	2
<b>And a minimum of 16 units from the following:</b> .....		<b>16</b>
CARPT 298	Work Experience in Carpenters Apprenticeship (1 - 4)	

**Associate Degree Requirements:** The Carpenter Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

**Drywall/Lathing Apprenticeship**

The Drywall/Lathing Apprenticeship program concentrates on training apprentices to the specific levels required for the construction industry and has been approved by the State of California Department of Apprenticeship Standards. Training emphasis includes safety, metal framing, blueprint reading, exterior/interior wall finishes, welding, residential and commercial construction process, building codes, estimation, and various construction topics.

**Student Learning Outcomes**

*Upon completion of this program, the student will be able to:*

- Demonstrate safe working practices in a field construction environment.
- Demonstrate proper selection, use, care, preparation, and handling of the drywall/lathing craftsman's tools of the trade.
- Analyze, interpret, and apply national building codes relating to the drywall/lathing profession.
- Analyze and interpret residential commercial construction blueprints.
- Evaluate, layout, and construct various metal framing systems such as floor, wall, roof, and arches.
- Calculate elevations using various leveling devices.
- Identify and select appropriate material for each phase of construction.
- Estimate and order material for construction projects.
- Plan projects with given information such as blueprints, specifications, verbal and written information.

**Career Opportunities**

Upon completion of the Drywall/Lathing Apprenticeship degree, students may find employment in the following sectors: government, residential and commercial construction and maintenance, utilities, and facilities management. Students may further their career as a licensed contractor.

For more information contact:  
 Program Director  
 4421 Pell Drive #B  
 Sacramento, CA 95838  
 1-888-315-3098

Requirements for Degree or Certificate		41 Units
DRLTH 100	Introduction to the Trade .....	2
DRLTH 102	Basic Applications .....	1.5
DRLTH 105	Mathematics for Drywall/Lathers .....	2
DRLTH 110	Residential Metal Framing .....	1.5
DRLTH 112	Doors, Windows, Exterior Systems/Building Documents .....	1.5
DRLTH 120	Blueprint Reading I .....	1.5
DRLTH 121	Blueprint Reading II .....	1.5
DRLTH 122	Blueprint Reading III .....	1.5
DRLTH 130	Welding I .....	1.5
DRLTH 131	Welding II .....	1.5
DRLTH 140	Exterior/Advanced Fire Control System and Partitions .....	1.5
DRLTH 142	Exterior Systems and Trims .....	1.5
DRLTH 150	Interior Metal Lathing System, Sound Control .....	1.5
DRLTH 160	Ceilings, Shaft Protection and Demountable Partitions ...	1.5
DRLTH 162	Arches, Furring and Advanced Systems .....	1.5
DRLTH 170	Advanced Construction Techniques .....	1.5

**And a minimum of 16 units from the following:** ..... 16  
 DRLTH 298 Work Experience Drywall/Lathing Apprenticeship (1 - 4)

**Associate Degree Requirements:** The Drywall/Lathing Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

**Electrical Apprenticeship**

This program provides instruction in the installation, operation, and maintenance of the electrical distribution systems in commercial and industrial sites. Topics include safety training, AC and DC electrical theory, metering, electronics, use of electrical codes, raceways, conductors, grounding, motors, transformers, fire alarm systems, fiber optics, instrumentation, building automation and heating, ventilating and air conditioning (HVAC) systems.

**Student Learning Outcomes**

*Upon completion of this program, the student will be able to:*

- Apply commercial and industrial safety procedures on job sites.
- Analyze, interpret and apply national, state and local electrical codes.
- Apply mathematics in calculating AC and DC series, parallel, and combination circuits.
- Identify different wiring methods for conductors, cables, and conduits.
- Analyze functions of blueprints, specifications, schedules, addenda and revisions in construction.
- Describe the function, operation and characteristics of a system and individual components of the system such as burglar alarms, fire alarms, information transport, HVAC, etc.
- Describe functions of instrumentation in industrial process control systems.

**Career Opportunities**

Upon completion of the electrical program, students may find employment in the following industry sectors: government, commercial and industrial construction and maintenance, utilities, and facilities management. With the degree, students may further their career as licensed contractors.

For more information contact:  
 Program Director  
 2836 El Centro Rd.  
 Sacramento, CA 95833  
 (916) 646-6688

Requirements for Degree or Certificate		50.7 Units
ELECT 110	Electrical Apprenticeship I .....	5
ELECT 111	Electrical Apprenticeship II .....	3.3
ELECT 120	Electrical Apprenticeship III .....	3.3
ELECT 121	Electrical Apprenticeship IV .....	3.3
ELECT 130	Electrical Apprenticeship V .....	3.3
ELECT 131	Electrical Apprenticeship VI .....	3.3
ELECT 140	Electrical Apprenticeship VII .....	3.3
ELECT 141	Electrical Apprenticeship VIII .....	3.3
ELECT 150	Electrical Apprenticeship IX .....	3.3
ELECT 151	Electrical Apprenticeship X .....	3.3
<b>And a minimum of 16 units from the following:</b> .....		16
ELECT 298	Work Experience in Electricians Apprenticeship	

**Associate Degree Requirements:** The Electrical Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

### Residential/Commercial Electrician Trainee Certificate

The Residential/Commercial Electrician program provides instruction in the installation, operation, and maintenance of the electrical distribution systems in residential and commercial sites. Topics include safety training, AC/DC electrical theory, metering, electronics, use of electrical codes, raceways, conductors, grounding, motors, transformers, fire alarm systems, fiber optics, and HVAC systems. The program complies with state regulations to become an Electrician Trainee.

#### Student Learning Outcomes

*Upon completion of this program, the student will be able to:*

- Apply residential and commercial safety procedures on job-sites.
- Analyze, interpret and apply national, state and local electrical codes.
- Apply electrical mathematics in calculating AC/DC series, parallel, and combination circuits.
- Identify different wiring methods for conductors, cables, and conduits.
- Analyze functions of blueprints, specifications, schedules, addenda and revisions in construction.
- Describe the function, operation and characteristics of a system and individual components of the system such as burglar alarms, fire alarms, information transport, HVAC, etc.

#### Career Opportunities

Upon completion of the Residential/Commercial Electrician Trainee program, students may find employment in the following industry sectors: government, residential and commercial construction and maintenance, utilities, and facilities management.

Requirements for Certificate		28.5 Units
ELECT 210	Electrician Trainee I	4
ELECT 211	Electrician Trainee II	4
ELECT 220	Electrician Trainee III	4
ELECT 221	Electrician Trainee IV	4
ELECT 230	Electrician Trainee V	4
ELECT 231	Electrician Trainee VI	4
ELECT 280	Electrical Workers State Certification Preparation	4.5

### Ironworker Apprenticeship

The Ironworker Apprenticeship Program has training for Field Ironworkers and Reinforcing Ironworkers. Training is provided in major ironworker components to Division of Apprenticeship Standards (DAS) guidelines.

For more information contact:  
 Program Director  
 3524 51st Ave  
 Sacramento, CA 95823  
 (916) 428-7420

### Student Learning Outcomes

*Upon completion of this program, the student will be able to:*

- Demonstrate safely working in a field construction environment.
- Analyze and interpret blueprints.
- Interpret and apply welding codes.
- Demonstrate proper selection, use, care, preparation, and handling of fiber lines, steel cables, wire ropes, chains, slings, cranes, ladders, scaffolds and helicopter rigging.
- Define, identify, interpret, and analyze uniform building codes (UBC), classifications, plans, schedules, charts, and specifications commonly used in the ironworker trade.
- Describe and apply reinforcing techniques and principles to concrete structures using steel, bar supports, bar splicing and welding.
- Perform proper structural steel erection on bridges, overpasses, and large buildings.
- Weld various ferrous metals using common welding processes and safety guidelines.
- Set cable tensions and pre-stress reinforcing steel to industry standards.

Requirements for Degree or Certificate		41-41.5 Units
IW 100	Orientation and History of the Trade	1.5
IW 110	Mixed Base	1.5
IW 120	Rigging	1.5
IW 130	Reinforcing I	1.5
IW 131	Reinforcing II/Post Tensioning	1.5
IW 140	Precast Concrete and Metal Buildings	1.5
IW 150	Welding I	1.5
IW 151	Welding II	1.5
IW 152	Welding III	1.5
IW 160	Lead Hazard	1.5
IW 170	Structural I	1.5
IW 171	Structural II	1.5
IW 180	Architectural/Ornamental I	1.5
IW 181	Architectural/Ornamental II (1.5)	1.5-2
or IW 184	Detailing I (2)	
IW 182	Architectural/Ornamental III (1.5)	1.5
or IW 185	Detailing II (1.5)	
IW 183	The History of Ironworkers	2.5
<b>And a minimum of 16 units from the following:</b>		16
IW 298	Work Experience in Ironworkers Apprenticeship (4)	

**Associate Degree Requirements:** The Ironworkers Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

### Sheet Metal Apprenticeship

The Sheet Metal Apprenticeship certificate concentrates on training apprentices to the specific levels required for the construction industry and has been approved by the State of California Department of Apprenticeship Standards. Training emphasis includes safety, blueprint reading, residential and commercial processes, building codes, estimation, and various sheet metal topics.

**Career Opportunities**

Upon completion of the Sheet Metal Apprenticeship certificate, students may find employment in the following sectors: government, residential and commercial construction and maintenance, utilities, and facilities management. Students may further their career as a licensed contractor.

For more information contact:  
 Program Director  
 1624 Silica Avenue  
 Sacramento, CA 95815  
 (916) 922-9381

**Student Learning Outcomes**

*Upon completion of this program, the student will be able to:*

- Demonstrate safe working practices in a field construction environment.
- Demonstrate proper selection, use, care, preparation, and handling of the sheet metal worker’s tools of the trade.
- Analyze, interpret, and apply national building codes relating to sheet metal construction.
- Analyze and interpret residential and commercial construction blueprints.
- Acquire skills and knowledge to make a successful transition to a journey-level position in the sheet metal worker trade.
- Demonstrate the ability to apply mathematical concepts to the sheet metal trade.
- Demonstrate proficiency in the principles, concepts and applications in metal fabrication methods.

Requirements for Degree or Certificate		54 Units
SHME 100	Sheet Metal Apprenticeship I	3.3
SHME 101	Sheet Metal Apprenticeship II	3.3
SHME 110	Sheet Metal Apprenticeship III	3.3
SHME 111	Sheet Metal Apprenticeship IV	3.3
SHME 120	Sheet Metal Apprenticeship V	3.3
SHME 121	Sheet Metal Apprenticeship VI	3.3
SHME 130	Sheet Metal Apprenticeship VII	3.3
SHME 131	Sheet Metal Apprenticeship VIII	3.3
SHME 140	Sheet Metal Apprenticeship IX	3.3
SHME 141	Sheet Metal Apprenticeship X	3.3
SHME 150	Sheet Metal Welding I	2.5
SHME 151	Sheet Metal Welding II	2.5
<b>A minimum of 16 units from the following:</b>		<b>16</b>
SHME 298	Work Experience in Sheet Metal Apprenticeship (1 - 4)	

**Associate Degree Requirements:** The Sheet Metal Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

**Sheet Metal Service Technician Apprenticeship**

The Sheet Metal Service Technician Apprenticeship Associate of Arts and certificate concentrates on training apprentices to the specific levels required for the construction and the heating, ventilation, and air conditioning (HVAC) industries. This program has been approved by the State of California Department of Apprenticeship Standards. Training emphasis includes safety, blueprint reading, residential and commercial processes, building codes, estimation, and various sheet metal topics. It includes the servicing, start-up, and balancing of HVAC systems.

**Career Opportunities**

Upon completion of the Sheet Metal Service Technician Apprenticeship certificate, students may find employment in the following sectors: government, residential and commercial construction and maintenance, HVAC servicing, utilities, facilities management, and central plant operations. Students may further their career as a licensed contractor.

**Student Learning Outcomes**

*Upon completion of this program, the student will be able to:*

- Demonstrate safe working practices in a field construction environment.
- Demonstrate proper selection, use, care, preparation, and handling of the sheet metal worker’s tools of the trade.
- Analyze, interpret, and apply national building codes relating to sheet metal and mechanical construction.
- Analyze and interpret residential and commercial construction blueprints.
- Demonstrate the proper start-up and balancing of different HVAC systems.
- Demonstrate troubleshooting techniques on various HVAC systems.

Requirements for Degree or Certificate		54.2 Units
SHME 100	Sheet Metal Apprenticeship I	3.3
SHME 101	Sheet Metal Apprenticeship II	3.3
SHME 110	Sheet Metal Apprenticeship III	3.3
SHME 111	Sheet Metal Apprenticeship IV	3.3
SMTEC 100	Sheet Metal Service Technician Apprenticeship I	2.5
SMTEC 101	Sheet Metal Service Technician Apprenticeship II	2.5
SMTEC 110	Sheet Metal Service Technician Apprenticeship III	2.5
SMTEC 111	Sheet Metal Service Technician Apprenticeship IV	2.5
SMTEC 120	Sheet Metal Service Technician Apprenticeship V	2.5
SMTEC 121	Sheet Metal Service Technician Apprenticeship VI	2.5
SMTEC 130	Sheet Metal Service Technician Apprenticeship VII	2.5
SMTEC 131	Sheet Metal Service Technician Apprenticeship VIII	2.5
SMTEC 140	Sheet Metal Service Technician Apprenticeship IX	2.5
SMTEC 141	Sheet Metal Service Technician Apprenticeship X	2.5
<b>A minimum of 16 units from the following:</b>		<b>16</b>
SHME 298	Work Experience in Sheet Metal Apprenticeship (1 - 4)	

**Associate Degree Requirements:** The Sheet Metal Service Technician Apprenticeship Associate in Arts (A.A.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

**100 Introduction to Apprenticeship 3 Units**

*Hours: 54 hours LEC*

This course provides an introduction to apprenticeship in the electrical, carpenter and sheetmetal trades. Topics include labor history, workers’ rights, construction computations, safety, traditional and non-traditional worker originations.

**ELECT 280 Electrical Workers State Certification Preparation 4.5 Units**

*Advisory: Three years or more of electrical trade experience.*

*Hours: 82 hours LEC*

This is a preparatory course for Electricians’ State Licensing Certification for California. This course reviews basic electrical formulas and provides an in-depth review of the National Electrical Code.