Area: Apprenticeship
Coordinator: Rene Green
Phone: (916) 484-8337
Counseling: (916) 484-8572

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
Electrical Residential Apprenticeship
Ironworker Apprenticeship
Residential/Commercial Electrician Trainee
Sheet Metal Apprenticeship
Sheet Metal Residential
Sheet Metal Service Technician Apprenticeship

Certificate of Completion offered by the department:
Green Pre-Apprenticeship
Green Technology Pre-Apprenticeship
Infrastructure Pre-Apprenticeship
Utilities Worker Pre-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.

DEGREES AND CERTIFICATES

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

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(Carpenter Apprenticeship continued)

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
And a minimum of 16 units from the following:		16
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
8000 Chadbourne Rd, Suite A
Fairfield, CA 95485
(707) 399-2880

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.

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(Electrical Apprenticeship continued)

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
And a minimum of 16 units from the following:		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.

Electrical Residential Apprenticeship

This is a three year, six semester certificated Electrical Residential Apprenticeship Program. The program concentrates on training apprentices to the specific levels required for residential and light commercial construction sites and has been approved by the State of California Department of Apprenticeship Standards.

Student Learning Outcomes

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

- apply residential electrical safety procedures to the work-site.
- analyze, interpret, and apply the National Electric Codes to residential and light commercial construction.
- analyze and install transformers and control panels.
- analyze and install low voltage systems such as TV, phone, burglar alarms, and HVAC control wiring.
- analyze and interpret residential construction blueprints.
- apply electrical mathematics in calculating resistance, voltage, and amperes in AC/DC series, parallel, and series parallel circuits.

Career Opportunities

Upon completion of the Electrical Residential Apprenticeship program, students may find employment in the following industry sectors: government, residential, and light commercial construction and maintenance.

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Must be a Registered Electrical Residential Apprentice

Requirements for Certificate		18 Units
ELRES 100	Electrical Residential Apprenticeship I	3
ELRES 101	Electrical Residential Apprenticeship II	3
ELRES 110	Electrical Residential Apprenticeship III	3
ELRES 111	Electrical Residential Apprenticeship IV	3
ELRES 120	Electrical Residential Apprenticeship V	3
ELRES 121	Electrical Residential Apprenticeship VI	3

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 safe working practices 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
And a minimum of 16 units from the following:		16
IW 298	Work Experience in Ironworkers Apprenticeship (4)	

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(Ironworker Apprenticeship continued)

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.

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

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.

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.

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

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
A minimum of 16 units from the following:		16
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 Residential Apprenticeship

This is a two-year, four-semester certificated Sheet Metal Residential Apprenticeship Program. The program concentrates on training apprentices to the specific levels required for residential and light commercial construction sites and has been approved by the State of California Department of Apprenticeship Standards.

Career Opportunities

Upon completion of the Sheet Metal Residential Apprenticeship program, students may find employment in the following industry sectors: government, residential, and light commercial construction and maintenance.

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(Sheet Metal Residential Apprenticeship continued)

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Must be a Registered Sheet Metal Residential Apprentice

Student Learning Outcomes

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

- apply safety procedures on residential job-sites.
- analyze and interpret residential construction blueprints.
- apply construction mathematics in calculating pattern development of sheet metal products.
- identify various metals, gages, fasteners, and sealants used in sheet metal fabrication.
- design and size a residential duct system.
- demonstrate proper soldering on sheet metal fabrication.

Requirements for Certificate		28 Units
SMRA 100	Sheet Metal Residential Apprenticeship I	3
SMRA 101	Sheet Metal Residential Apprenticeship II	3
SMRA 110	Sheet Metal Residential Apprenticeship III	3
SMRA 111	Sheet Metal Residential Apprenticeship IV	3
A minimum of 16 units from the following:		16
SHME 298	Work Experience in Sheet Metal Apprenticeship (1 - 4)	

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
A minimum of 16 units from the following:		16
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.

CERTIFICATES OF COMPLETION (offered by the department)

Green Pre-Apprenticeship Certificate

This program prepares students for entry into an apprenticeship program in the commercial and industrial building and construction industries. Topics include Leadership in Energy and Environmental Design (LEED) processes, green technologies, green building techniques, infrastructure, and transportation projects.

Student Learning Outcomes

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

- describe the life cycle phases of a building and the impacts on the green environment over its life cycle.
- describe the Leadership in Energy and Environmental Design (LEED) rating process.
- identify green alternatives to conventional building practices and describe the pros and cons of those alternatives.
- explain safety regulations and safe working conditions for apprenticeship training.
- describe basic skills required for the construction of roads, bridges, levees, and rail.
- identify green building procedures used within infrastructure projects.

Requirements for Certificate		16 Units
PREAP 111	Infrastructure Pre-Apprenticeship	7
PREAP 141	Green Technology Pre-Apprenticeship	7
A minimum of 2 units from the following:		2
FITNS 358	Workforce Wellness (1)	

Green Technology Pre-Apprenticeship Certificate

This certificate prepares students for entry into an apprenticeship program in the commercial and industrial building and construction industries. Topics include green building practices, construction job site safety requirements, construction mathematics, and apprenticeship entry requirements.

Student Learning Outcomes

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

- explain safety regulations and safe working conditions for apprenticeship training.
- identify construction practices used by different building trades such as sheet metal workers, electricians, plumbers, pipe-fitters, and carpenters.
- describe the life cycle phases of a building and impacts on the green environment over its life cycle.

Requirements for Certificate		8 Units
FITNS 358	Workforce Wellness	1
PREAP 141	Green Technology Pre-Apprenticeship	7

Infrastructure Pre-Apprenticeship Certificate

This certificate prepares students for entry into an apprenticeship program in the infrastructure industries such as bridge, levee, and road construction. Topics include bridge construction practices, construction job site safety requirements, construction mathematics, and apprenticeship entry requirements.

Student Learning Outcomes

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

- explain safety regulations and safe working conditions for apprenticeship training.
- identify construction practices used by different building trades such as carpenters, bricklayers, pile-drivers, cement masons, laborers, operating engineers, and surveyors.
- describe the construction processes involved in a typical bridge building.

Requirements for Certificate		8 Units
FITNS 358	Workforce Wellness	1
PREAP 111	Infrastructure Pre-Apprenticeship	7

Utilities Worker Pre-Apprenticeship Certificate

This certificate prepares students for entry into an apprenticeship program in the utility industry. Topics include job-site safety requirements, electrical and gas principles, blueprint reading, electrical power distribution, and apprenticeship preparation.

Student Learning Outcomes

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

- explain electrical fundamentals and apply formulas such as Ohm's and Watt's Law.
- define industry terms and vocabulary used in the utility industry.
- explain electrical and gas distribution for the utility industry.
- identify safety laws, regulations, and safe working conditions for apprenticeship training.
- describe effective conflict resolution methods.
- describe the functions of transformers, electrical generators, and electrical equipment.

Requirements for Certificate		11 Units
FITNS 358	Workforce Wellness	1
PREAP 122	Pre-Apprenticeship for Utility Workers	10

Pre-Apprenticeship

PREAP 111 Infrastructure Pre-Apprenticeship 7 Units

Corequisite: FITNS 358
Advisory: ENGWR 102 or 103 and ENGRD 116 with a grade of "C" or better; OR ESLR 320 and ESLW 320 with a grade of "C" or better
Enrollment Limitation: Students must have a high school diploma or GED.
Hours: 77 hours LEC; 147 hours LAB

This course provides an introduction to transportation infrastructure apprenticeship. It covers tools, equipment, materials, and techniques used for building roads, bridges, levees, and rail. Topics also include job safety, physical requirements for different job sites, employability skills for apprenticeship, and California apprenticeship laws. Field trips may be required.

PREAP 122 Pre-Apprenticeship for Utility Workers 10 Units

Hours: 130 hours LEC; 153 hours LAB

This course provides entry-level employment skills for the utility industry. Topics include applications of electronic, electrical, and gas principles and their applications in the utility industry. It also covers safety as applied to utility workers, computerized work orders, and two-way radio communication. Additionally, reading, interpreting, and applying technical information to solve work-related problems are presented. Field trips are required.

PREAP 141 Green Technology Pre-Apprenticeship 7 Units

Corequisite: FITNS 358
Advisory: ENGWR 102 or 103, and ENGRD 116 with a grade of "C" or better; OR ESLR 320 and ESLW 320 with a grade of "C" or better.
Enrollment Limitation: Students must have a high school diploma or GED.
Hours: 77 hours LEC; 147 hours LAB

This course provides an introduction to Green Technology Pre-apprenticeship. It covers tools, equipment, materials, and techniques used in the green fields such as electrical, plumbing, heating ventilation and air conditioning (HVAC), and carpentry. Topics include commercial and industrial building energy efficiency, building codes, sustainability, renewable energy, green building, distributed generation systems, utilities, and smart grids. Additional topics include construction drawings, safety training, construction math, and basic communication and employability skills. Field trips may be required.