

**AP PL 215 Exterior Insulation Finish Systems (1.5)**  
*1 hour lecture-1 1/2 hours laboratory*  
**Note:** Cross listed as AP DL 215; may be taken 2 times  
 Introduction to the basic working knowledge and technical skills needed to successfully install Exterior Insulation and Finish Systems EIFS (foam products) to meet industry specifications and standards. Introduction to the proper usage of products and materials will be discussed and used.

**AP PL 216 Firestopping Procedures (1.5)**  
*1 hour lecture-1 1/2 hours laboratory*  
**Note:** Cross listed as AP DL 216; may be taken 2 times  
 Emphasis on the correct methods, technical skills and firestop materials required to complete a Firestop System. Firestopping is a complete fire containment system designed to prevent the passage of fire, smoke and hot gasses from one side of a rated wall/ceiling assembly to another.

**Residential Wireman (AP RW)**

A three-year apprenticeship program. Applicants for San Diego/Imperial counties should apply to the San Diego Electrical Training Trust, 4675 Viewridge Avenue, Suite D, San Diego, CA 92123. Telephone: (858) 569-6633, ext. 111.

**A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT**

Program Requirements	Units
AP RW 101 Introduction to Residential Wiring Concepts	4
AP RW 102 Electrical Theory, Practice & Blueprint Reading	4
AP RW 103 AC/DC Electrical Theory and Applications	4
AP RW 104 Residential Certification Preparation	4
AP RW 105 Home Technology Integrator I	4
AP RW 106 Home Technology Integrator II	4
APWE 113 Electrician Work Experience	16
<b>TOTAL UNITS</b>	<b>40</b>

**COURSE OFFERINGS**

**AP RW 101 Introduction to Residential Wiring Concepts (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** Indentured apprentice to a designated Joint Apprenticeship and Training Committee  
**Note:** May be taken 2 times  
 Introduction to the electrical industry, with emphasis on jobsite safety, basic residential wiring, National Electric Code (NEC), sexual harassment, introduction to blueprints, tools and their use.

**AP RW 102 Electrical Theory, Practice & Blueprint Reading (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** A minimum grade of 'C' in AP RW 101  
**Note:** May be taken 2 times  
 Survey of drug awareness, Union Constitution and Bylaws, parliamentary procedure, test instruments, National Electric Code (NEC), blueprint analysis, specialty residential wiring systems including telephone, LAN, security, fire alarm and CATV systems.

**AP RW 103 AC/DC Electrical Theory and Applications (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** A minimum grade of 'C' in AP RW 102  
**Note:** May be taken 2 times  
 Introduction to the electrical industry, with emphasis on jobsite safety, AC and DC theory, National Electric Code (NEC), electric motors, transforms, relays, motor controls, tools and their use. Particular attention will be given to residential lighting, wiring devices, appliance cords/connections, and residential branch circuit wiring.

**AP RW 104 Residential Certification Preparation (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** A minimum grade of 'C' in AP RW 103  
**Note:** May be taken 2 times

This course is designed to prepare the student to take the California Electrician Certification Examination (CECE). The class provides a review of concepts and principles, but focuses primarily on understanding and applying the National Electric Code (NEC), the set of standards upon which the CECE is based.

**AP RW 105 Home Technology Integrator I (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** A minimum grade of 'C' in AP RW 104  
**Note:** May be taken 2 times  
 Provides the student with the background necessary to install, troubleshoot, and maintain computer networks, video theater systems, voice networks, CATV networks, and other specialized audio/video systems designed for the home environment.

**AP RW 106 Home Technology Integrator II (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** A minimum grade of 'C' in AP RW 105  
**Note:** May be taken 2 times  
 Provides the essential networking concepts to permit design and engineering of a residential network and its components. Provides information on home network installations that includes lighting control systems; telecommunication devices; security, access control, home automation controllers; heating, ventilation, and air conditioning control systems; and integration of each. Upon completion of this course students will be prepared to take two CompTIA HTI+ certification exams: Residential Systems and Systems Infrastructure and Integration.

**AP RW 197 Residential Wireman Topics (.5-4)**  
 Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.  
**Note:** May be taken 4 times  
 Topics in Residential Wireman. See Class Schedule for the specific topic offered. Course title will designate subject covered.

**Sheet Metal (AP SM)**

A five-year apprenticeship program. Applicants for this program should be directed to the San Diego Sheet Metal Joint Apprenticeship and Training Committee, 4596 Mission Gorge Place, San Diego, CA 92120. Telephone (619) 265-2758.

**A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT**

Program Requirements	Units
AP SM 101 Core I	4
AP SM 102 Core II	4
AP SM 103 Core III	4
AP SM 104 Core IV	4
AP SM 105 Sheet Metal Welding	3
AP SM 106 Plans & Specifications	4
AP SM 107 Construction Plan Problem Solving	4
AP SM 108 Introduction to Basic Refrigeration	4
AP SM 109 Foreman and Project Management Training	4
AP SM 110 Architectural Problem Solving	4
AP WE 110 Sheet Metal Work Experience	16
<b>TOTAL UNITS</b>	<b>55</b>

**COURSE OFFERINGS**

**AP SM 101 Core I (4)**  
*3 hours lecture-3 hours laboratory*  
**Prerequisite:** Indentured apprentice to the San Diego Sheet Metal Joint Apprenticeship and Training Committee  
**Note:** May be taken 2 times  
 An introduction to the basic principles, processes, drawings, materials and practices used in the sheet metal industry.

**AP SM 102 Core II (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** A minimum grade of 'C' in AP SM 101  
**Note:** May be taken 2 times  
 A continuation of basic sheet metal processes as well as an introduction to simple sheet metal forming processes.

**AP SM 103 Core III (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** A minimum grade of 'C' in AP SM 102  
**Note:** May be taken 2 times  
 An introduction to intermediate sheet metal processes demonstrating job layout, architectural details and construction techniques with problems of unusual complexity and difficulty.

**AP SM 104 Core IV (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** A minimum grade of 'C' in AP SM 103  
**Note:** May be taken 2 times  
 A continuation of intermediate processes with problems of unusual difficulty and complexity.

**AP SM 105 Sheet Metal Welding (3)**  
 1 1/2 hours lecture-4 1/2 hours laboratory  
**Prerequisite:** AP SM 104  
**Note:** May be taken 2 times  
 An introduction to the basic principles and methods of gas and arc welding used in the sheet metal industry. Includes codes, standards, welding theory and the practical application using prescribed welding procedures and equipment.

**AP SM 106 Plans and Specifications (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** AP SM 105  
**Note:** May be taken 2 times  
 An introduction to the language and organization of plans and specifications for sheet metal projects. Topics will include architectural, structural, mechanical and electrical drawings as well as how to write and implement a change order to plans and specifications.

**AP SM 107 Construction Plan Problem Solving (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** AP SM 106  
**Note:** May be taken 2 times  
 Learn to apply detailing and research skills to create changes to plans and specifications using intermediate process problems of unusual complexity and difficulty.

**AP SM 108 Introduction to Basic Refrigeration (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** AP SM 107  
**Note:** May be taken 2 times  
 An introduction to the physical components and systems of a basic HVAC system as well as hands-on techniques for startup and basic system troubleshooting.

**AP SM 109 Foreman and Project Management Training (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** AP SM 108  
**Note:** May be taken 2 times  
 Overview of the knowledge, skills and abilities required to effectively perform as a foreman and project manager in the sheet metal industry.

**AP SM 110 Architectural Problem Solving (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** A minimum grade of 'C' in AP SM 109  
**Note:** May be taken 2 times  
 Overview of the knowledge, skills, and abilities of advanced architectural project performance.

**AP SM 197 Sheet Metal Topics (.5-4)**  
 Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/lab-

atory may be scheduled by the department. Refer to Class Schedule.  
**Prerequisite:** Indentured apprentice to the San Diego Sheet Metal Joint Apprenticeship and Training Committee  
**Note:** May be taken 4 times  
 Topics in Sheet Metal. See Class Schedule for specific topic offered. Course title will designate subject covered.

### Sound and Communication Systems Installer (AP SC)

A three-year apprenticeship program. Applicants for this program should be directed to the Riverside and San Bernardino Joint Electrical Apprenticeship Training Committees, 1855 Business Center Drive, San Bernardino, CA 92408. Telephone: (909) 890-1703.

#### A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements	Units
AP SC 101 Intro to Sound/Communication Trade Industry	4
AP SC 102 Electrical Theory and Practices DC	4
AP SC 103 Electrical Theory and Practices AC	4
AP SC 104 Semiconductor Electronics	4
AP SC 105 Intro to Digital Electronics and Signaling Devices	4
AP SC 106 Management/Alarms/Codes/Circuits	4
APWE 113 Electrician Work Experience	16
<b>TOTAL UNITS</b>	<b>40</b>

### Sound Technician (AP SC)

A four-year apprenticeship program. Students will work in the field during the day and attend class in the evenings. Each apprentice is paid for field work with regularly scheduled pay increases based on required work hours and completion of classroom instruction. Upon completion of this program, students will receive a certificate of completion from the California Division of Apprenticeship Standards and Journeyman Sound Technician status in the I.B.E.W. All students must be indentured Sound Technical apprentices to be eligible for the course. Interested applicants from San Diego/Imperial counties should apply to the San Diego Electrical Training Trust, 4675 Viewridge Avenue, Suite D, San Diego, CA 92123. Telephone: (858) 569-6322, extension 111.

#### A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements	Units
AP SC 101 Intro to the Sound/Communication Trade Industry	4
AP SC 102 Electrical Theory and Practices DC	4
AP SC 103 Electrical Theory and Practices AC	4
AP SC 104 Semiconductor Electronics	4
AP SC 105 Introduction to Digital Electronics	4
AP SC 106 Management/Alarms/Codes/Circuits	4
AP SC 107 Life Safety and Security System Applications	4
AP SC 108 Specialized Systems and Supervision Techniques	4
APWE 113 Electrician Work Experience	16
<b>TOTAL UNITS</b>	<b>48</b>

#### COURSE OFFERINGS

**AP SC 101 Introduction to the Sound and Communication Trade Industry (4)**  
 3 hours lecture-3 hours laboratory  
**Prerequisite:** A minimum grade of 'C' in MATH 50. Completion of designated tests with a passing grade determined by the appropriate committee. Indentured Apprentice to the Riverside, San Bernardino, Mono, and Inyo Counties Sound and Communications Joint Apprenticeship Committee or the San Diego Sound & Communications Joint Apprenticeship Committee  
**Note:** May be taken 2 times  
 Introduction to the sound and communication industry, electrical code, fundamentals of wiring methods, fastening devices, electrical conductors, circuits, voltage and data communication.