

COURSE OFFERINGS

AP RW 701 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 702 Electrical Theory, Practice & Blueprint Reading (4)
3 hours lecture - 3 hours laboratory**Prerequisite:** A minimum grade of 'C' in AP RW 701**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 703 AC/DC Electrical Theory and Applications (4)
3 hours lecture - 3 hours laboratory**Prerequisite:** A minimum grade of 'C' in AP RW 702**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 704 Residential Certification Preparation (4)
3 hours lecture - 3 hours laboratory**Prerequisite:** A minimum grade of 'C' in AP RW 703**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 705 Home Technology Integrator I (4)
3 hours lecture - 3 hours laboratory**Prerequisite:** A minimum grade of 'C' in AP RW 704**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 706 Home Technology Integrator II (4)
3 hours lecture - 3 hours laboratory**Prerequisite:** A minimum grade of 'C' in AP RW 705**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 797 Residential Wireman Topics (.5-4) (4)

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture and/or 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 701	Core I	4
AP SM 702	Core II	4
AP SM 703	Core III	4
AP SM 704	Core IV	4
AP SM 705	Sheet Metal Welding	3
AP SM 706	Plans & Specifications	4
AP SM 709	Foreman and Project Management Training	4
AP SM 710	Architectural Application	4
AP SM 711	HVAC I	4
AP SM 712	HVAC II	4
AP WE 710	Sheet Metal Work Experience	16
TOTAL UNITS		55

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AP SM 701 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 702 Core II (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 701**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 703 Core III (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 702**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 704 Core IV (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 703**Note:** May be taken 2 times

A continuation of intermediate processes with problems of unusual difficulty and complexity.

AP SM 705 Sheet Metal Welding (3)

1½ hours lecture - 4½ hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 704**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 706 Plans and Specifications (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 705**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 709 Foreman and Project Management Training (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 712**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 710 Architectural Application (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 709**Note:** May be taken 2 times

Overview of the knowledge, skills, and abilities of advanced architectural project performance.

AP SM 711 HVAC I (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 706**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 712 HVAC II (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SM 711**Note:** May be taken 2 times

Designed to build on the principles of basic HVAC system design and installation. Students will develop a better understanding of how a modern HVAC system is designed and functions. Field installation, plans and specifications, commissioning, project management and basic LEED principles will also be covered.

AP SM 797 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 and/or laboratory 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 701	Intro to Sound/Communication Trade Industry	4
AP SC 702	Electrical Theory and Practices DC	4
AP SC 703	Electrical Theory and Practices AC	4
AP SC 704	Semiconductor Electronics	4
AP SC 705	Intro to Digital Electronics and Signaling Devices	4
AP SC 706	Management/Alarms/Codes/Circuits	4
AP WE 713	Electrician Work Experience	16
TOTAL UNITS		40

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, San Diego, CA 92123. Telephone: (858) 569-6633, extension 111.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
AP SC 701	Intro to the Sound/Communication Trade Industry	4
AP SC 702	Electrical Theory and Practices DC	4
AP SC 703	Electrical Theory and Practices AC	4
AP SC 704	Semiconductor Electronics	4
AP SC 705	Introduction to Digital Electronics	4
AP SC 706	Management/Alarms/Codes/Circuits	4
AP SC 707	Life Safety and Security System Applications	4
AP SC 708	Specialized Systems and Supervision Techniques	4
AP WE 713	Electrician Work Experience	16
TOTAL UNITS		48

COURSE OFFERINGS**AP SC 701 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.

AP SC 702 Electrical Theory and Practices DC (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 701**Note:** May be taken 2 times

Study of floor and plot plans, basic blueprint reading and circuit drawing, theory of magnetism, DC and AC generators, motors and transformers, on-the-job safety, first aid, electrical code, telephony and data communications.

AP SC 703 Electrical Theory and Practices AC (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 702**Note:** May be taken 2 times

Study of apprenticeship, electrical inductance, capacitance and reactance, including grounded conductors, branch circuits, transformer principles, RCL circuits and filters.

AP SC 704 Semiconductor Electronics (4)

3 hours lecture - 3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 703**Note:** May be taken 2 times

Study of solid-state electronic theory and components, diodes, transistors, SCR, triacs, diacs, IC amplifiers and op-amps.