

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)
 1½ hours lecture-4½ hours laboratory
Prerequisite: A minimum grade of 'C' in 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: A minimum grade of 'C' in 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: A minimum grade of 'C' in 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: A minimum grade of 'C' in 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: A minimum grade of 'C' in 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-

ratory 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
AP WE 113 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, Suite D, San Diego, CA 92123. Telephone: (858) 569-6322, extension 111.

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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
AP WE 113 Electrician Work Experience	16
TOTAL UNITS	48

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.

AP SC 102 Electrical Theory and Practices DC (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 101**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 103 Electrical Theory and Practices AC (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 102**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 104 Semiconductor Electronics (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 103**Note:** May be taken 2 times

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

AP SC 105 Introduction to Digital Electronics and Signaling Devices (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 104**Note:** May be taken 2 times

Introduction to digital electronic technology and electronic equipment. Instruction includes basic digital systems, binary and decimal numbering systems, decision-making logic circuits, Boolean Algebra, flip-flops, counters, shift registers, encoders, decoders, ROMs, DC to AC converters and organization of these component blocks to accomplish manipulation of data.

AP SC 106 Management/Alarms/Codes/Circuits (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 105**Note:** May be taken 2 times

Introduction to management, installation of security and fire alarm systems, the National Electrical Code as it relates to alarm installation and circuits as applied to alarm systems.

AP SC 107 Life Safety and Security System Applications (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 106**Note:** May be taken 2 times

Continuation of digital theory studies. Instruction expands coverage of Life Safety Systems, and introduces the theory and application of Nurse Call Systems and Security Systems with an emphasis on closed circuit television (CCTV) installations.

AP SC 108 Specialized Systems and Supervision Techniques (4)

3 hours lecture-3 hours laboratory

Prerequisite: A minimum grade of 'C' in AP SC 107**Note:** May be taken 2 times

Study of specialized building systems including cable television systems (CATV), master antenna systems (MATV), and building automation systems. Training will cover aspects of job administration including personal computer use, job estimating, customer relations, and building system startup procedures.

AP SC 197 Sound and Communication Systems Installer 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.

Prerequisite: 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 4 times

Topics in Sound and Communication Systems Installer. See Class Schedule for specific topic covered. Course title will designate subject covered.

Work Experience (AP WE)**AP WE 110 Sheet Metal Work Experience (4)**

12 hours laboratory

Prerequisite: Indentured apprentice to a designated Joint Apprenticeship and Training Committee**Note:** Pass/No Pass grading only; may be taken 4 times
Supervised on-the-job training in the Sheet Metal Trade.**AP WE 111 Carpentry Work Experience (4)**

12 hours laboratory

Prerequisite: Indentured apprentice to a designated Joint Apprenticeship and Training Committee**Note:** May be taken 4 times; Pass/No Pass grading only
Supervised on-the-job training in the Carpentry trade.**AP WE 112 Drywall/Acoustical Work Experience (4)**

12 hours laboratory

Prerequisite: Indentured apprentice to a designated Joint Apprenticeship and Training Committee**Note:** May be taken 4 times; Pass/No Pass grading only
Supervised on-the-job training in the Interior Systems Trade.**AP WE 113 Electrician Work Experience (4)**

12 hours laboratory

Prerequisite: Indentured apprentice to a designated Joint Apprenticeship and Training Committee**Note:** May be taken 4 times; Pass/No Pass grading only
Supervised on-the-job training in the Electrician trade.**AP WE 114 Plasterer Work Experience (4)**

12 hours laboratory

Prerequisite: Indentured apprentice to a designated Joint Apprenticeship and Training Committee**Note:** May be taken 4 times; Pass/No Pass grading only
Supervised on-the-job training in the Interior Systems Trade.**Arabic (ARAB)**

Contact the World Languages Department for further information.

(760) 744-1150, ext. 2390

Office: F-5

COURSE OFFERINGS**ARAB 101A Arabic IA (3)**

3 hours lecture

Note: Covers the first half of first semester Arabic.**Transfer acceptability:** CSU; UC

Arabic 101A and 101B are equivalent to the first semester of an elementary level course in Arabic. This elementary level course is a study of the Arabic language and Arabic-speaking cultures, with emphasis on the development of communicative skills and basic structures. This beginning-level course is for students with no previous coursework in Arabic.

ARAB 101B Arabic IB (3)

3 hours lecture

Prerequisite: A minimum grade of 'C' in ARAB 101A or one year of high school Arabic**Note:** Covers the second half of first semester Arabic.**Transfer acceptability:** CSU; UC

Arabic 101A and 101B are equivalent to the first semester of an elementary level course in Arabic. ARAB 101B is a continuation of ARAB 101A. This elementary level course is a study of the Arabic language and Arabic-speaking cultures, with emphasis on the development of communicative skills and basic structures.

ARAB 102A Arabic IIA (3)

3 hours lecture

Prerequisite: A minimum grade of 'C' in ARAB 101B or two years of high school Arabic