

# APPRENTICESHIP: SOUND & COMMUNICATION (APSC)

## APSC 111 • JOB INFORMATION, SAFETY, TEST INSTRUMENTS, STRUCTURED CABLING, FIBER OPTICS

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 130.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Introduction to the sound and communication industry. Students are exposed to the basic tools of the trade, test instruments, proper care and safety of tools, use of fastening devices and how to tie basic knots. This course will cover the TIA/EIA standards and students apply codeology to cabling systems, connectors, unshielded twisted pair cables and connecting hardware. This course also includes a fiber optic overview of different optical cables, connectors and connection joints. This course teaches students how to properly install, test and certify fiber optical cables.

## APSC 112 • CODES & PRACTICES, CONNECTORS & RACEWAYS, BLUEPRINT READING, DC THEORY

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 131.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

This course covers the National Electrical Code (NEC). Students apply codeology to cabling systems, boxes, connectors, and raceways. It covers the fundamentals of blueprints, scales, mechanical and electrical symbols, using industry elevations and schedules. It also covers DC theory, how electricity works, how to calculate and measure voltage, current, resistance and power in a series and/or parallel circuit.

## APSC 121 • AC THEORY, MASTER CLOCK, NURSE CALL, COMPUTER LITERACY

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 132.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Study of AC theory. The student will become familiar with sine waves, inductance, inductive reactance, capacitive reactance, frequency and AC impedance. Calculate voltage, current, impedance and power in both a series and a parallel AC circuit. Introduction to nurse call systems, including system components, ancillary systems, system design, installation and troubleshooting techniques. Instruction on personal computing software, such as Microsoft Word and Excel. Students create Word documents and practical spreadsheets.

## APSC 122 • FIRE ALARM, PAGING, EMERGENCY COMMUNICATION, MASS NOTIFICATION SYSTEMS

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 133.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Fundamentals of fire alarm systems, including building a small scale fire alarm system using Norcal's fire alarm trainers, initiating and notification devices, testing and maintenance. In addition, students will study paging system theory, components, installation and troubleshooting. Course concludes with Emergency Communication Systems and Mass Notification systems and code requirements for installation and commissioning.

## **APSC 131 • VDV/FIRE LIFE SAFETY PREP, NETWORKING, CCTV, CATV & DAS**

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 160.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Preparation for the Voice Data Video and Fire Life Safety state certifications. Review of navigating the NEC, Fire Alarm and Signaling Code, overview of the certification application process and lessons on most aspects of the Voice Data Video industry. Concludes with sample exam tests. Also includes basic networking, studies on the OSI reference model, TCP/IP reference module, managing IP addresses and data transport. Networking lessons tie directly into the Closed Circuit Television (CCTV) Intelligent Network Video advanced study of CCTV systems, including video camera types, lenses, optics, lighting characteristics and the study of signal transmission methods. Hands-on lab assignment installing and configuring networked video surveillance camera system. Further lessons include the fundamentals of Closed Antenna Television (CATV) and Distributed Antenna System (DAS). Fundamentals of distributing a radio frequency over the proper medium, connections, signal levels and testing. Hands-on lab includes installing cable, connector terminations, equipment installation and testing.

## **APSC 132 • SECURITY SYSTEMS, AUDIO-VISUAL**

<b>Units:</b>	4
<b>Hours:</b>	40 lecture, 40 laboratory per quarter (80 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
<b>Advisory:</b>	Not open to students with credit in APRT 161.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Begins with the introduction to intrusion and access control systems (security). Lessons include intrusion basics, applicable codes, protection strategies, cabling and wiring, sensors and devices access control systems, access components, access credentials and electric locks. Next, students study audio visual systems. Lessons include performance issues due to hum and buzz created by power supply leakage current, ground loops and electromagnetic interference, properties of sound, distributed audio and video, planning and testing of audio visual systems. Students will perform hands-on laboratory exercises by installing an intrusion/access control system and an audio visual presentation system.