

APSC 132: SECURITY SYSTEMS, AUDIO-VISUAL

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	4
Hours:	40 lecture, 40 laboratory per quarter (80 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Northern CA Sound & Communication JATC Apprenticeship Program.
Advisory:	Not open to students with credit in APRT 161.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- A successful student will be able to construct a CCTV system in a hands-on lab.
- A successful student will be able to navigate the NEC and NFPA 72 reference books.

Description

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.

Course Objectives

The student will be able to:

- Identify components of intrusion and access control systems.
- Install a basic intrusion system with access control.
- Define a balanced audio signal.
- Define video aspect ratios.
- Install projector, projection screen, cabling and interface devices of an audio-visual system.

Course Content

- Security
 - Intrusion components
 - Access control components

- Security system installation (lab)
- Power quality
 - Hum and buzz
 - Electromagnetic interference
- Audio-visual
 - Audio signals (mic, line, speaker)
 - Balanced/unbalanced
 - Wireless RF frequencies
 - Video aspect ratios
 - Audio-visual installation (lab)

Lab Content

Work individually and in teams with intrusion equipment, including contact switches, motion detectors, card readers, and biometric readers. Students will also work with audio-visual equipment, including high resolution RGB cable, HDMI cable, XLR and RCA connectors, video projectors, and projection screens. Students will construct a small scale intrusion, access control system and a typical audio-visual system, including a projection screen, projector, computer interfaces and the wiring needed for a complete functioning system. Equipment safety and safe handling practices are reviewed and applied.

Special Facilities and/or Equipment

- Audio-visual equipment (laptop, video projector with screen)
- Laboratory with test instruments and hands-on projects
- Computers with internet access
- When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- Results of quizzes and tests
- Classroom and laboratory project participation
- Online discussion participation

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- Lecture
- Lab assignment
- Group discussion
- Demonstration

Representative Text(s) and Other Materials

AVIXA. CTS Certified Technology Specialist Exam Guide, 3rd ed.. 2020.

This is the standard Sound & Communications textbook/workbook used for this course. Although it may not be within 5 years of the required published date, it is the most current book used when teaching this course. We will adopt the next edition of the text, as it is published.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignments, for example:

1. CTS Exam Guide, Chapter 3, Analog vs. Digital Signals
2. CTS Exam Guide, Chapter 4 (pages 49-51), Sound Capture

B. Writing assignments, for example:

1. Describe the difference in function between wiring a door contact in series as compared to parallel; provide an example of when you would use each wiring method
2. Describe the principles of how a balanced microphone signal operates

C. Other:

1. Online videos: videos (created by the JATC) accessed on Canvas CMS, including lessons on RF, intrusion, access control, and audio-visual systems

Discipline(s)

Telecommunication Technology