



COURSE OUTLINE

Course Number SST200	Course Title Physical Security Product Technologies	Credits 3
Hours 2 Lecture / 2 Lab	Pre-requisite NET103. NET104	

Catalog description

Students learn about the operation and integration of physical security products and technologies, including IP-based video surveillance equipment, analytics software, and physical security information management (PSIM), how to satisfy the needs of end user customers by reducing operating costs, and how these technologies keep assets safe around the world.

Required texts/other materials

Reference Division Booklist

Intelligent Network Video: Understanding Modern Video Surveillance Systems

Fredrik Nilsson (Author), Axis Communications (Author)
ISBN-10: 1466555211

CCTV, Second Edition: Networking and Digital Technology

Vlado Damjanovski (Author)
ISBN-10:0750678003

Electronic Access Control

Thomas L. Norman (Author)
ISBN-10:0123820286

Course coordinator

Jeff Weichert

Latest Review

SPRING 2019

Information resources

Identity Management: A Primer

Graham Williamson (Author), David Yip (Author), Ilan Sharoni (Author), Kent Spaulding (Author)
Publication Date: September 15, 2009
ISBN-10: 158347093X

Security for Mobile Networks and Platforms

Author: Aissi, Selim. Dabbous, Nora. Prasad, Anand. ebrary, Inc.
Pub Date: 2006

Security and Embedded Systems

Author: NATO Advanced Research Workshop on Security and Embedded Systems (2005 August 22-26: Patrai, Greece) Giladi, Ran. Serpanos, Dimitrios Nikolaou. ebrary, Inc.
Pub Date: 2006

Build Your Own Home Security System

Author: Horn, Delton T.
ISBN: 9780830638710
Pub Date: 1993

Effective Physical Security

Lawrence Fennelly (Author)
Publication Date: December 22, 2003, 3rd Edition
ISBN-10:0750677678

Physical Security Systems Handbook

Michael Khairallah, PSP
Elsevier/Butterworth-Heinemann
Publication Date: November 21, 2005
ISBN-10: 075067850X

Home Automation with Arduino: Automate your Home using Open-Source Hardware

Marco Schwartz (Author)
Paperback: 160 pages
Publisher: CreateSpace Independent Publishing Platform (July 30, 2013)
ISBN-10: 1491016825

Other learning resources

(The following resources are corporate online universities, which may feature product-specific training on video equipment, card readers, doors and door hardware.)

- AXIS Communications Academy
- Genuine HID Academy
- Pelco Global Training Institute
- ASSA ABLOY Americas University

Course Competencies/Goals

The student will be able to:

1. Identify the fundamental products and technologies used by the physical security industry for end-user customers.
2. Describe the context in which security project technologies intersect with existing installations in homes and buildings.
3. Recognize the value of how security products and technologies impact organizational costs and provide data to make intelligent business decisions.
4. Consider how technologies used in the physical security industry can be utilized to empower staff to identify and proactively resolve situations.

Course-specific General Education Knowledge Goals and Core Skills

General Education Goals

Goal 1. Communication. Students will communicate effectively in both speech and writing.

Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Goal 3. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Goal 6. Ethical Reasoning and Action. Students will understand ethical issues and situations.

MCCC Core Skills

Goal A. Written and Oral Communication in English. Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal C. Ethical Decision-Making. Students will recognize, analyze and assess ethical issues and situations.

Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations.

Unit 1: Access Control & Identity Management Systems

This unit covers the management of individual identities, their authentication, authorization, roles, and privileges within or across system and enterprise boundaries with the goal of

increasing security and productivity while decreasing cost, downtime, and repetitive tasks. **(Course Competency 1, 2, 3 & 4; Gen Ed Goal 2 & 3; Core Skills B, D & E)**

Unit Components

1. Infrastructure required to support and install the components
 - a. Systems, panels and power supply
 - b. Applications of the technology
2. Access Control & Identity Management Technologies
 - a. Biometrics
 - b. Iris/Vein scans
 - c. Cards/Card Access/Card Readers
 - d. Effective integration of security systems
 - e. Virtual Guard Tours
3. Near Field Communication (NFC)

Unit 2: Video Surveillance/Closed-circuit Television (CCTV)

This unit discusses how CCTV equipment may be used to observe parts of a process from a central control room. CCTV systems may operate continuously or only as required to monitor a particular event. A more advanced form of CCTV, utilizing digital video recorders (DVRs), provides recording with a variety of quality and performance options and extra features (such as motion-detection and email alerts). **(Course Competency 1, 2, 3, & 4; Gen Ed Goal 2 & 3; Core Skills B, D & E)**

Unit Components

1. General Characteristics of CCTV System Design
2. Cameras
 - a. Analog v. Digital Cameras
 - b. Wireless v. Wired Cameras
 - c. HD Cameras and Optics
 - d. IP/Network Cameras
 - e. Indoor/Outdoor Cameras
 - f. Pan/Tilt/Zoom Cameras
 - g. Edge Analytics (on the camera)
3. Lenses
4. Lighting Variables
 - a. Thermal
 - b. Low Light
 - c. Infra-red
5. Digital Recorders/Data Storage & Transmission
 - a. DVR/NVR
 - b. Real-Time Recorders

Unit 3: Video Management Systems

This unit covers how video management systems (VMS)-manage, access, and control the video surveillance environment **(Course Competency 1, 2, 3, & 4; Gen Ed Goal 2 & 3; Core Skills A, B, D & E)**

Unit Components

1. Network Servers
2. Cloud Storage/Retrieval
3. NVR/DVR
4. Intelligent Video Management

Unit 4: Analytics

This unit discusses how video analytics are used for discovery and communication of meaningful patterns in data. Organizations apply analytics to business data, to describe, predict, and improve business performance. **(Course Competency 2, 3, & 4; Gen Ed Goal 1, 2, 3, & 6; Core Skills A, B, D, E & F)**

Unit Components

1. Video Forensics
2. Behavior Recognition Technology
3. Facial & License Plate Recognition
4. Current hardware technology and future trends
5. Current software technology and future trends

Unit 5: Perimeter Protection

This unit details the physical gates, wedge barriers, bollards, road-blockers, detection-fencing as well as boom barriers, turnstiles, sliding and swing gates used to protect a home or business. **(Course Competency 1 & 2; Gen Ed Goal 2 & 3; Core Skills A, B, D & E)**

Unit Components

1. Outdoor Perimeter Protection
2. Gates, Barriers & Deterrents
3. Doors Panels/Door Security
4. Lighting
5. Thermal Detection

Unit 6: Physical Security Identity Management (PSIM) & Public Security/Safety

This unit reviews physical security information management (PSIM), a category of software that provides a platform, designed to integrate multiple unconnected security applications and devices and control them through one comprehensive user interface. It collects and correlates events from existing disparate security devices and information systems (video, access control, sensors, analytics, networks, building systems, etc.) to empower staff to identify and proactively resolve situations. **(Course Competency 2, 3, & 4; Gen Ed Goal 1 & 3; Core Skills A, B, D, E & F)**

Unit Components

1. Command & Control Systems
2. Situational Awareness
3. Mass Notification

Unit 7: Building & Home Automation

This unit describes how building and home automation provide advanced functionality by the control system of a building (or home). The control system is a computerized, intelligent network of electronic devices designed to monitor and control the mechanical, electronics, and lighting systems in a building. **(Course Competency 1 & 2; Gen Ed Goal 1 & 3; Core Skills B, D, E & F)**

Unit Components

1. Home Controls
2. Indoor/Outdoor Systems
3. Cellular & Voice Activated Devices

Unit 8: Alarms & Monitoring Centers

This unit discusses alarm monitoring centers, who provide services to monitor burglar, fire and residential alarm systems. They may also provide watchman and supervisory services for organizations. **(Course Competency 1, 2, 3, & 4; Gen Ed Goal 1, 3, & 6; Core Skills B, C, E & F)**

Unit Components

1. Control Panels
2. Fire Alarms
3. Central Station/Monitoring
4. Video Verification
5. Personal Emergency Response Systems (PERS)

Evaluation of student learning

- **Review quizzes;** after each unit
- **Mid-term exam;** reviewing and evaluating concepts in Units 1-4
- **Final exam;** reviewing and evaluating concepts in Units 5-8

Academic Integrity Statement

Mercer County Community College is committed to academic integrity – the honest, fair and continuing pursuit of knowledge, free from fraud or deception.

- Students should never:
 - Knowingly represent the work of others as their own
 - Knowingly represent previously completed academic work as current
 - Fabricate data to support academic work
 - Use or obtain unauthorized assistance in the execution of any academic work
 - Give fraudulent assistance to other students
 - Unethically use technological means to gain academic advantages

Violators of the above actions will be penalized. For a single violation the faculty member will determine the course of action. This may include, assigning a lower grade on the assignment, lowering the course grade, failing the student, or another penalty that is appropriate to the violation. The student will be reported to the Academic Integrity Committee, who may impose other penalties for a second (or later) violation. The student has right to a hearing and also to appeal any decisions. These rights are outlined in the student handbook.