

Faculty	Management and Social Sciences	
Department	Sociology	
Course Title	TECHNICAL/ELECTRONICS ASPECT OF SECURITY	
Year of Study	4	
Course Code	CSS423	
Credit Hours	2	
Contact Hours	30	
Mode of Delivery	Classroom Lectures	
Mode of Assessment		Weight%
Continuous Assessment		30%
Final Examination		70%
Total		100%
Course Lecture/Instructor	MR A. A. AJIBADE	
Course Description	Security Electronics, Surveillance Systems, Digital Image Processing for Security, Access Control Systems, Intrusion Detection, Perimeter Security Technologies, Network Security Fundamentals, Cybersecurity for Security Systems, Security System Integration, Emerging Technologies in Security, Case Studies and Practical Applications.	
Course Objectives	<ol style="list-style-type: none"> 1. comprehensive exploration of Security Electronics 2. Surveillance Systems, 3. Digital Image Processing for Security, 4. Access Control Systems, 5. Intrusion Detection, 6. Perimeter Security Technologies, 7. Network Security Fundamentals, 8. Cybersecurity for Security Systems, 9. Security System Integration, 10. Emerging Technologies in Security, 11. Case Studies and Practical Applications. 	
Learning Outcomes	<p>At the end of this course students will know about</p> <ol style="list-style-type: none"> 1. Security Electronics 2. Surveillance Systems, 3. Digital Image Processing for Security, 4. Access Control Systems, 5. Intrusion Detection, 	

	6. Perimeter Security Technologies, 7. Network Security Fundamentals, 8. Cybersecurity for Security Systems, 9. Security System Integration, 10. Emerging Technologies in Security, 11. Case Studies and Practical Applications.	
Teaching and Learning	The class will meet for two hours each week. Class time will be used for a combination of lectures and practical sessions	
Detailed Course Content	Security Electronics, Surveillance Systems, Digital Image Processing for Security, Access Control Systems, Intrusion Detection, Perimeter Security Technologies, Network Security Fundamentals, Cybersecurity for Security Systems, Security System Integration, Emerging Technologies in Security, Case Studies and Practical Applications.	
Course Content Sequencing		
Weeks	Detailed Course Outline	Allocated Time
Week 1	Introduction to Security Electronics Overview of security electronics and its importance. Historical development of security systems. Basic concepts of security technology and its applications.	2 hours
Week 2	Surveillance Systems Types of surveillance systems: analog vs. digital. CCTV cameras and their components. Video encoding, transmission, and storage.	2 hours
Week 3	Digital Image Processing for Security Image enhancement and restoration techniques. Object detection and tracking algorithms. Real-time video analytics for security applications.	2 hours
Week 4	Intrusion Detection and Alarm Systems Intrusion detection sensors: motion, vibration, and sound. Alarm system components and configurations. Integration of intrusion detection with surveillance.	2 hours
Week 5	Intrusion Detection and Alarm Systems Intrusion detection sensors: motion, vibration, and sound. Alarm system components and configurations. Integration of intrusion detection with surveillance.	2 hours
Week 6	Perimeter Security Technologies Electric fences and perimeter intrusion detection. Microwave and infrared barriers.	2 hours

	Acoustic sensors for outdoor security.	
Week 7	Network Security Fundamentals Basics of network architecture and protocols. Threats and vulnerabilities in networked security systems. Introduction to firewalls, VPNs, and encryption.	2 hours
Week 8	Cybersecurity for Security Systems Securing IP cameras and surveillance networks. Mitigating cyber threats to access control systems. Best practices for maintaining secure security electronics.	2 hours
Week 9	Security System Integration Building unified security systems. Interconnectivity of surveillance, access control, and alarms. Role of IoT in enhancing security systems.	2 hours
Week 10	Emerging Technologies in Security Drones and robotics for surveillance. AI and machine learning in security analytics. Biometric advancements and their ethical implications.	2 hours
Week 11	Case Studies and Practical Applications. Analysis of real-world security electronics implementations. Group discussions on challenges and solutions. Student presentations on innovative security technology use cases.	2 hours
Week 14	Examination	

RECOMMENDED MATERIALS

1. "Electronic Security Systems: A Manager's Guide to Evaluating and Selecting System Solutions" by Robert L. Cole

- This book provides an in-depth understanding of security electronics and covers various topics including access control, surveillance, and intrusion detection.

2. "CCTV for Security Professionals" by Alan R. Matchett

- This resource focuses on surveillance systems, offering insights into CCTV technology, design, and installation.

3. "Digital Image Processing" by Gonzalez and Woods

- For digital image processing for security, this textbook is widely used and covers fundamental concepts and techniques.

4. "Access Control, Authentication, and Public Key Infrastructure" by Bill Ballard

- This book delves into access control systems and authentication methods.

5. "Intrusion Detection Systems" by Clavister

- This resource provides a comprehensive overview of intrusion detection techniques and systems.

6. "Perimeter Security" by Michael J. Arata Jr.

- For understanding perimeter security technologies, this book explores various methods and technologies used to protect physical perimeters.

7. "Network Security Essentials" by William Stallings

- To grasp network security fundamentals, this book covers principles, protocols, and practical applications.

8. "Cybersecurity – Attack and Defense Strategies" by Yuri Diogenes and Erdal Ozkaya

- This resource focuses on cybersecurity for security systems and offers insights into both offensive and defensive strategies.

9. "Security Systems Integration" by Stephen Jones

- This book covers security system integration, including the integration of various security technologies.

10. "Emerging Technologies in Security" by Hamid R. Nemati - This resource explores emerging technologies in the field of security and their practical applications.

11. "Security Case Studies: Case Histories and Case Studies in Security Management" by Jim Doble - For case studies and practical applications, this book offers real-world examples and scenarios in security management.

Online Courses and Webinars:

1. Look for online courses and webinars offered by organizations like ISC², ASIS International, and SANS Institute, which often cover topics related to security electronics, surveillance, and cybersecurity.

Professional Journals:

1. **Security Technology and Management (STM) Journal** - This journal covers various aspects of security technology, including emerging trends and practical applications.

Industry Conferences:

1. Attend industry conferences such as ISC West, IFSEC International, or RSA Conference, where you can learn about the latest security technologies and hear from experts in the field.

