

Academic Lesson Plan of SUMMER 2026

Department : CSE	Semester : 4TH	Name of the teaching faculty: SWARNALATA SAHOO
Subject: INFORMATION SECURITY	No. of days/per week class allotted . 3p/week.	Semester from :22nd December 2026
		No. of weeks:15 weeks
		Topics to be covered:
1 st week	1 st	Definition of Information Security, Importance of Information Security in the digital age
	2 nd	Definition of Information Security, Importance of Information Security in the digital age
	3 rd	Key principles of Information Security: Confidentiality, Integrity, and Availability (CIA Triad)
2 nd week	1 st	Key principles of Information Security: Confidentiality, Integrity, and Availability (CIA Triad)
	2 nd	Types of security threats and attacks (e.g., malware, hacking, phishing, DoS)
	3 rd	Types of security threats and attacks (e.g., malware, hacking, phishing, DoS)
3 rd week	1 st	Security policies and best practices, Risk management and mitigation strategies
	2 nd	Overview of security standards (ISO/IEC 27001, NIST)
	3 rd	Introduction to Cryptography and its importance in information security
4 th week	1 st	Symmetric vs Asymmetric cryptography
	2 nd	Common cryptographic algorithms: DES, AES
	3 rd	Common cryptographic algorithms: RSA
5 th week	1 st	Common cryptographic algorithms: ECC
	2 nd	Hashing functions and digital signatures
	3 rd	Public Key Infrastructure (PKI)
6 th week	1 st	Certificates and encryption protocols (SSL/TLS)
	2 nd	Protecting data during transmission and network-based attacks
	3 rd	Firewalls: Types and configuration,
7 th week	1 st	Intrusion Detection Systems (IDS)
	2 nd	Intrusion Prevention Systems (IPS)
	3 rd	Virtual Private Networks (VPNs), Network Security Protocols: IPsec
8 th week	1 st	SSL/TLS
	2 nd	HTTPS
	3 rd	Network vulnerabilities and defense techniques
9 th week	1 st	User authentication and access control (e.g., passwords, biometrics)
	2 nd	User authentication and access control (e.g., passwords, biometrics)
	3 rd	File system security and encryption
10 th week	1 st	OS security hardening techniques
	2 nd	Patch management and updates
	3 rd	Security auditing and monitoring
11 th week	1 st	Security auditing and monitoring
	2 nd	Common web security threats (SQL injection, XSS, CSRF, etc.)
	3 rd	Secure Web Application Development Practices
12 th week	1 st	Secure HTTP headers and cookies management
	2 nd	Web application firewalls (WAF)
	3 rd	Web application firewalls (WAF)
13 th week	1 st	Website security tools and testing (e.g., OWASP, penetration testing)
	2 nd	Website security tools and testing (e.g., OWASP, penetration testing)
	3 rd	Designing security policies (access control, data protection)
14 th week	1 st	Business Continuity Planning (BCP)
	2 nd	Disaster Recovery Planning (DRP)
	3 rd	Incident response lifecycle (identification, containment, eradication, recovery)
15 th week	1 st	Incident response lifecycle (identification, containment, eradication, recovery)
	2 nd	Forensics and evidence gathering, Legal and ethical considerations in information security
	3 rd	Forensics and evidence gathering, Legal and ethical considerations in information security

Signature of Faculty

HOD, CSE