

INFORMATION SECURITY SYLLABUS

Module 1: Information Security Concepts

- Information Security
- Computer Security
- Threats
- Harm
- Vulnerabilities
- Program Security
- Malicious Code
 - Malwares: Viruses, Trojan Horses, and Worms
- Countermeasures

Module 2: Authentication and Access Control

- Authentication
- Key Management Schemes
 - Hierarchical Key Management Techniques
- Security Standards
- User Authentication Protocols
- Implementing Access Controls
- Access Control Models
 - Role-Based Access Control (RBAC)
 - Attribute-Based Access Control (ABAC)
 - Attribute-Based Encryption in Information Storage
- Physical Access Controls

Module 3: Operating Systems Security

- Security in Operating Systems
- Security in OS Design
 - Simplified Design
 - Layered Design

- Kernelized Design
- Reference Monitor
- Trusted Systems and Functions
- Trusted Operating System Design
- Rootkit

Module 4: Security Countermeasures

- Design of Firewalls
 - Types
 - Personal Firewalls
 - Configurations
- Network Address Translation (NAT)
- Data Loss Prevention
- Intrusion Detection and Prevention Systems (IDS/IPS)
 - Types of IDSs
 - Intrusion Prevention System
 - Intrusion Response
 - Goals of IDSs
 - Strengths and Limitations

Module 5: Database Security

- Database Security
- Database Security Requirements
- Reliability and Integrity
- Sensitive Data
- Types of Disclosures
- Preventing Disclosures
- Inference
- Multilevel Databases
- Multilevel Security
- Database Attacks
 - SQL Injection Attacks

Module 6: Web Security

- Browser Attacks
 - Types
 - Failed Identification and Authentication
- Misleading and Malicious Web Content
- Protection Against Malicious Web Pages
- Website Data
 - Code within Data
 - Cross-Site Scripting (XSS) Attacks
- Prevention of Data Attacks
- Fake Emails
- Spam Detection
- Phishing Attacks
 - Phishing URL Detection and Prevention

Module 7: Privacy Issues

- Privacy Concepts
 - Aspects of Information Privacy
 - Computer-Related Privacy Problems
- Threats to Personal Data Privacy
- People-Based Privacy Concerns
- Privacy Principles and Policies
- Individual Actions to Protect Privacy
- Governments and Privacy
- Identity Theft
- Privacy Issues on the Web Data
- Application of Cryptographic Techniques for Privacy Preservation

PAJAMA PADHAI