

Information Security

MIE 114

Semester: First
Credit Hour: 3

Full Marks: 75
Internal: 30
Final Exam: 45

General Objectives;

- Upon completion of this course, participants will have gained knowledge of information security concepts, basic components and applications.

Specific Objectives:

- to make students aware with basic fundamentals of information security,
- to know the various codes and attacks,
- to know the detailed principles of cryptography and other security techniques

COURSE CONTENTS

Unit 1: Introduction to Information Security

4 Hrs

The History of Information Security, What Is Information Security, Critical Characteristics of Information, Information security concepts and practices (CIA and other practices), Balancing Security and Access

Unit 2: Malicious code and application attacks

8 Hrs

Malicious code, Password attacks, DOS Attack, Application attacks, Web application security, Reconnaissance attack, Masquerading attack,

Unit 3: Cryptography and Key Management

8 Hrs

Basics of cryptography, Symmetric Cryptography (DES, Triple DES, AES, Key ,distribution), Asymmetric cryptography, Public and private keys, RSA, Elliptic curve, Hash function, Digital signatures, PKI, Applied cryptography.

Unit 4: Authentication and Access Control

5 Hrs

Overview of access control, Authentication and Authorization, Identification and authentication techniques, Access control techniques, Access control methodologies, implementations and administration.

Unit 5: Network Security

5 Hrs

LAN security , Wireless security threats and mitigation, Internet threats and security, Remote access security management, Network attack and countermeasures

Unit 6: Auditing and Monitoring

4 Hrs

Auditing, Monitoring, Penetration-testing techniques, Inappropriate activities, Indistinct threats and countermeasures,

Unit 7: Legal, Ethical and Professional issues in Information Security **6 Hrs**

Types of Law, Relevant Laws (Computer Crime, IP, Licensing, Privacy),
International Laws and Legal Bodies, Ethical Concepts in Information Security,
Codes of Ethics, Certifications, and Professional Organizations

Unit 8: Disaster Recovery and Business Continuity **5 Hrs**

Business continuity planning, Business impact assessment, BCP documentation
Nature of disaster, Disaster recovery planning