

Course Code	Course Title	H	C	I	E	T
17U4DMC11	COMPUTER SECURITY	5	4	25	75	100

Objectives:

- To impart the knowledge of security aspects of computing system.
- Learning the various methods of securing and administering computers and computer networks.

Unit – I: Introduction

(15 hours)

Security problem in computing – Characteristics of computer in intrusion – Basic concepts – Threats, Vulnerabilities – Controls – Confidentiality – Integrity – Availability – Methods of Defense.

Unit – II: Encryption

(15 hours)

Basic Encryption and Decryption – Substitution Cipher – Caesar Cipher – other substitutions – One time pad – Transposition – Columnar transposition – Symmetric and Asymmetric encryption Systems – Stream and block ciphers – Data encryption standard – Rivest Shamir Adel man (RSA) Encryption.

Unit – III: Methods

(15 hours)

Security involving Programs and OS – Flaws – Malicious code – Virus, Worm – Program flaws – Buffer overflows- Incomplete mediation – Time of check and rime of use errors – Program development controls –memory file protection requirements & techniques – User Authentication. – Trusted OS – Design principles and evaluation.

Unit – IV: Network security

(15 hours)

Database and network security – database integrity – database secrecy – interference control – Multilevel databases – Network threats – Introduction to network security techniques.

Unit – V: Administration

(15 hours)

Administering security – Security planning – Risk analysis – Physical security – Legal aspects of security.

Text Book:

Charles P.Pfleeger, Shari Lawrence Pfleeger – “Security in Computing” – III Ed., - Pearson education – 2003.

Reference Book:

1. Atul Kanate – “Cryptography and Network Security, Principle and Practices – Prentice Hall of India – 1998.