

Course Code	C03255	Course Title	Information Security			
SLQF Level	5					
Semester	6	Hours/Week	Lectures	2	Pre-requisites	C03203
Credits	2		Practical Work	3/2		
Contributing/Not contributing to GPA	Contributing		Tutorials	-		

Learning Outcomes

LO 1: Describe the theoretical principles of information security.

LO 2: Apply information security principles in information processing and exchange.

LO 3: Take preventive and reactive measures to deal with information security issues.

Outline Syllabus

1. **Information security models (2h):** Threat models, CIA. **[LO 1]**

2. **Access control theories and techniques (4h):** Access control theory, Access control matrix, Role-based access control **[LO 1], [LO 2]**

3. **Cryptography and related concepts, standards, and methods (4h):** Secret key encryption, Public key encryption, Hash functions, Hash trees. **[LO 1], [LO 2]**

4. **Key exchange, digital certificate systems, and protocols (4h):** Key exchange protocols, digital signatures **[LO 1], [LO 2]**

5. **Digital signatures (4h):** Digital signatures, Authentication, and Key Exchange protocols **[LO 2]**

6. **Application security, attacks, and counter measures (6h):** Secure design principles, Defensive programming, Vulnerability auditing, and Penetration testing. **[LO 2], [LO 3]**

7. **Security policies (4h):** Security, Confidentiality, and Integrity policies **[LO 3]**

Practical Work

1. Access control matrix **(3h)**

2. Secret key encryption **(3h)**

3. Digital certificates **(3h)**

4. Defensive programming **(3h)**

5. Vulnerability auditing **(3h)**

6. Penetration testing **(3h)**

Number of Assignments : 02

Assessment Criteria

Continuous Assessment : 40%, End-semester Examination : 60%