



# GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Minor/Honours Degree Syllabus)

Subject Code : N116AH02

Subject Name : Security Assessment and Risk Analysis

WEF Academic Year :	2025-26
Semester :	6
Category of the Course :	Compulsory

**Prerequisite :** Computer and Network Security.

**Course Objective :** Describe the concepts of risk management in information security. Define and differentiate various Contingency Planning components. Define and be able to discuss incident response options, and design an Incident Response Plan for sustained organizational operations.

**Course Scheme :**

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
03	00	00	03	70	00	00	00	100

**Course Content :**

Sr. No.	Course Content	No. of Hours	% of Weightage
	<b>Module 1 :</b> SECURITY BASICS: Information Security (INFOSEC) Overview: critical information characteristics – availability information states – processing security countermeasures-education, training and awareness, critical information characteristics – confidentiality critical information characteristics – integrity, information states – storage, information states – transmission, security countermeasures-policy, procedures and practices, threats, vulnerabilities.	8	20
	<b>Module 2 :</b> Threats to and Vulnerabilities of Systems: Threats, major categories of threats (e.g., fraud, Hostile Intelligence Service (HOIS). Countermeasures: assessments (e.g., surveys, inspections). Concepts of Risk Management: consequences (e.g., corrective action, risk assessment), cost/benefit analysis and implementation of controls, monitoring the efficiency and effectiveness of controls (e.g., unauthorized or inadvertent disclosure of information).	9	22
	<b>Module 3 :</b> Security Planning: directives and procedures for policy mechanism. Contingency Planning/Disaster Recovery: agency response procedures and continuity of operations, contingency plan components, determination of backup requirements, development of plans for recovery actions after a disruptive event	7	18



# GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Minor/Honours Degree Syllabus)

Subject Code : 116AH02

Subject Name : Security Assessment and Risk Analysis

	<b>Module 4 :</b> Personnel Security Practices and Procedures: access authorization/verification (need-to-know), contractors, employee clearances, position sensitivity, security training and awareness, systems maintenance personnel. Auditing and Monitoring: conducting security reviews, effectiveness of security programs, investigation of security breaches, privacy review of accountability controls, review of audit trails and logs.	8	20
	<b>Module 5 :</b> Operations Security (OPSEC): OPSEC surveys/OPSEC planning INFOSEC: computer security – audit, cryptography-encryption (e.g., point-to-point, network, link).	7	15
	<b>Module 6 :</b> Case study of threat and vulnerability assessment.	3	5
	<b>Total :</b>	<b>42</b>	<b>100</b>

### Text books / Reference :

1. Information Systems Security, 2ed: Security Management, Metrics, Frameworks and Best Practices, Nina Godbole, John Wiley & Sons.
2. Principles of Incident Response and Disaster Recovery, Whitman & Mattord, Course Technology ISBN: 141883663X.

### Course Outcome :

After Completion of the Course, Student will able to :

No	Course Outcomes	RBT Level*
01	To apply contingency strategies including data backup and recovery and alternate site selection for business resumption planning.	AP
02	To Skilled to be able to describe the escalation process from incident to disaster in case of security disaster.	UN
03	To Design a Disaster Recovery Plan for sustained organizational operations.	CR

\*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

### Corresponding Online Resources :

1. Introduction to Cyber Security, [https://swayam.gov.in/nd2\\_nou20\\_cs01/preview](https://swayam.gov.in/nd2_nou20_cs01/preview)
2. (Web Link) [http://www.cnss.gov/Assets/pdf/nstissi\\_4011.pdf](http://www.cnss.gov/Assets/pdf/nstissi_4011.pdf)

\*\*\*\*\*