



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Bachelor of Vocation (B.Voc.), 6<sup>th</sup> Semester**  
**Branch: Information Technology**  
**Subject Name: Cyber Security**  
**Subject Code: 1160503**

**Type of subject:** Core

**Prerequisite:** Information Security

**Rationale:** Cyber security is crucial because it safeguards all types of data against theft and loss. Sensitive data, protected health information (PHI), personally identifiable information (PII), intellectual property, personal information, data, government and business information systems are all included. Objective of this course is that it provides students basic knowledge and skills in the fundamental theory of Cyber Security.

**Teaching and Examination Scheme:**

Teaching Scheme			Credit C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA(M)	ESE(V)	PA(I)	
3	0	0	3	50	0	0	0	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE-End Semester Examination; PA- Progressive Assessment

**Course Details:**

Sr. No.	Content	Hrs.	Weightage (%)
1	<b>Introduction:</b> Introduction to Cyber Security, Importance and challenges in Cyber Security, Cyberspace, Cyber threats, Cyberwarfare, CIA Triad, Cyber Terrorism, Cyber Security of Critical Infrastructure.	8	20
2	<b>Hackers and Cyber Crimes:</b> Types of Hackers, Hackers and Crackers, Cyber-Attacks and Vulnerabilities, Malware threats, Sniffing, Gaining Access, Worms, Trojans, Viruses, Backdoors	8	20
3	<b>Ethical Hacking and Social Engineering:</b> Ethical Hacking Concepts and Scopes, Threats and Attack Vectors, Information Assurance, Threat Modelling, Vulnerability Assessment and Penetration Testing, Types of Social Engineering, Insider Attack, Preventing Insider Threats, Social Engineering Targets and Defense Strategies.	10	30
4	<b>Cyber Forensics and Auditing:</b> Introduction to Cyber Forensics, Role of forensics Investigator, Forensics Investigation Process, Collecting Network based Evidence, Writing Computer Forensics Reports, Auditing, Information Security Management System Management, Introduction to ISO 27001:2013	8	15
5	<b>Cyber Ethics and Laws:</b> Introduction to Cyber Laws, E-Commerce and E-Governance, Certifying, Authority and Controller, Offences under IT Act, Computer Offences and its penalty under IT Act 2000, Intellectual Property Rights in Cyberspace	8	15
	<b>TOTAL</b>	42	100



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<b>Distribution of Theory Marks</b>				
R Level	U Level	A Level	N Level	E Level
15	15	20	-	-

**Suggested Specification table with Marks (Theory):**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

**Reference Books:**

1. Donaldson, S., Siegel, S., Williams, C.K., Aslam, A., Enterprise Cybersecurity-How to Build a Successful Cyber Defense Program Against Advanced Threats, A-press
2. Nina Godbole, Sumit Belapure, Cyber Security, Willey
3. Hacking the Hacker, Roger Grimes, Wiley—
4. Cyber Law by Bare Act, Govt of India, It Act 2000

**Course Outcomes:**

Sr. No.	CO Statement	Weightage (%)
CO-1	Understanding the basic technical, social and lawsuits aspect of Cyber Security	20
CO-2	The students can use basic security tools to enhance cyber security.	20
CO-3	Understand the security management methods and auditing.	30
CO-4	Apply the security principles to system design.	15
CO-5	Understanding various laws.	15