GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma in Engineering

Level: Diploma

Branch: Computer Engineering / Computer Science & Engi. / Information Technology / Electronics & Communication Engineering / Information & Communication Technology

Course / Subject Code : DI04000101

Course / Subject Name : Cyber Security Awareness & Cyber Laws

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W.E. F. Academic Year:	2025-26
Semester:	4ʳᵈ
Category of the Course:	MOPEC-01

Prerequisite:	- Basic computer literacy (email, internet, mobile apps).
	- Awareness of mobile and online payment applications.
	- Basic use of internet and social media.
Rationale:	Students across all engineering branches increasingly use digital devices and online services. However, a lack of awareness makes them vulnerable to cyber threats such as phishing, identity theft, malware, and online fraud. This course equips students with a fundamental understanding of cyber threats, safe online practices, and relevant legal frameworks. Knowledge of Indian cyber laws, data privacy, and ethical online behavior will help students become responsible digital citizens and protect themselves in both professional and personal contexts.

Course Outcome:

After Completion of the Course, the Student will be able to:

No	Course Outcomes	RBT Level
01	Identify and describe key aspects of cyberspace, cyber ethics, digital citizenship, and prevalent cyber threats.	Understand
02	Apply safe digital practices for passwords, browsing, emails, social media, and mobile use.	Apply
03	Interpret the significance of antivirus systems, firewalls, multi-factor authentication, and data backup in safeguarding information.	Understand
04	Analyze key provisions of the IT Act 2000, evaluate data privacy principles, and examine intellectual property rights in digital contexts.	Understand
05	Analyze cyber incidents and apply preventive and reporting measures effectively.	Apply

Revised Bloom's Taxonomy (RBT)

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Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
				Theory		Tutorial / Practical		
L	**T**	**PR**	**C**	**ESE (E)**	**PA (M)**	**PA (I)**	**ESE (V)**	
3	0	0	3	70	30	00	00	100

Course Content:

Unit No.	Content	No. of Hours	% of Weightage

1.	**Introduction to Cybersecurity**
	● Introduction to Cyber Space - Computers, Internet & World Wide Web :- Definition, Use, Advantages
	● Need & Importance of Cyber Security in daily life
	● Cyber Ethics :- Definition, Key Principal
	● Digital Citizenship :- Definition, Key Components
	● Cyber Threats
	  ○ Phishing
	  ○ Malware :- Virus, Worm, Trojan
	  ○ Fake Messages and Scams
	  ○ Identity Theft
	  ○ Social Engineering
	  ○ Juice Jacking
	● CIA Triad- Confidentiality, Integrity, Availability
	● Current Issues and challenges of cyber security
		10	25

2.	**Safe Digital Practices**
	● Password Security
	  ○ Creating Strong Passwords
	  ○ Password management
	● Safe Browsing and Email Security
	  ○ Detecting Real vs Fake URLs
		8	15

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	○ Avoiding Malicious Links & Attachments in mail and mobile. ● Social Media Safety Awareness 　○ Fake Profiles creation 　○ Cyber Bullying ● Safe Online Shopping and Digital Payments ● Safe Use of Mobile Devices 　○ Checking App Permissions 　○ Updating Apps Regularly 　○ Antivirus on Mobiles devices 　○ SIM Card Cloning		
3.	**Cyber Security Tools & Measures** ● Antivirus Software 　○ Needs of Antivirus 　○ Types of Antivirus Software (Standalone, Network, Cloud-Based) 　○ Limitation of Antivirus Software ● Firewalls 　○ Definition and Purpose of firewalls 　○ Types of Firewalls (Packet-Filtering, Stateful Inspection, Proxy, Next-Generation) ● Multi-Factor Authentication (MFA) 　○ OTP-based MFA 　○ App-based MFA ● Backups and Data Recovery 　○ Importance of Data Backup & Recovery 　○ Types of Recovery Methods (Data Backup & Recovery, System recovery, file recovery, network recovery)	9	25
4.	**Cyber Laws and IT Act** ● Introduction to Cyber Laws ● Need for Regulation in Cyberspace ● IT Act 2000 and Amendments (2008) 　○ Objectives and Scope ● Key Provisions of IT Act 　○ Electronic Records	9	20

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		○ Digital Signatures (Concept),Digital certificate ● Data Privacy and Protection in India :- Introduction, Data, Data Fiduciary, Data Principal, Data Processor, Personal Data Breach, Need of DPDP, Key Features of DPDP ● Intellectual Property Rights in Digital Space 　　○ Software Piracy 　　○ Plagiarism		
5.		**Case Studies and Current Issues** ● Case Study: Phishing Attack ● Case Study: Online Banking Fraud ● Roles and Responsibilities of Government Agencies 　　○ Indian Computer Emergency Response Team (CERT-In) 　　○ National Critical Information Infrastructure Protection Centre (NCIIPC) 　　○ Indian Cybercrime Coordination Centre (I4C) 　　○ National Cyber Crime Reporting Portal ● Emerging Cyber Issues 　　○ Fake News and Misinformation 　　○ AI-based Frauds (Deep fakes, Social Engineering)	9	15
		Total	**45**	**100**

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in %)					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
24	**48**	**28**	**0**	**0**	**0**

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:
(a) Books:
1. Cyber Security and Cyber Laws – P. Mahajan, Firewall Media.
2. Cybersecurity Essentials – Charles J. Brooks et al., Wiley.
3. Cybersecurity for Beginners – Raef Meeuwisse, Independently published.

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4. IT Act, 2000 & Amendments 2008 – Bare Act, Government of India.
5. Digital Citizenship: A Practical Guide – Mike Ribble.

(b) Open source software and website:

1. Indian Cybercrime Coordination Centre (I4C) : https://i4c.mha.gov.in/
2. National Critical Information Infrastructure Protection Centre (NCIIPC) : https://nciipc.gov.in/
3. National Cyber Crime Reporting Portal: https://cybercrime.gov.in/
4. CERT-In (India's National Cyber Security Agency): https://www.cert-in.org.in/
5. Cyber Crime Reporting Portal (Government): https://www.cybercrime.gov.in/
6. Stay Safe Online / National Cyber Security Alliance: https://staysafeonline.org/
7. Internet Society (ISOC): https://www.internetsociety.org/

Suggested Activities for Students:

1. Cybersecurity Escape Room:
   a. Create a physical or virtual escape room with puzzles related to security concepts like Multi-Factor Authentication (MFA), identifying phishing links, or securing a Wi-Fi network..
2. Poster/Meme Contest:
   a. Students can create informative and catchy posters or memes about key security topics (e.g., "Don't click that link," "Update your software")..
3. Bring Your Own Device (BYOD) Security Audit:
   a. A guidance session on how to secure personal devices (phones, laptops) against common threats, covering topics like updates, backups, and app permissions..
4. Comparative Cyber Law Analysis:
   a. Research and compare key provisions of two different international or national cyber laws.

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