



# GUJARAT TECHNOLOGICAL UNIVERSITY

## Bachelor of Engineering Syllabus

### Branch : Computer Science & Engineering

### (IOT & Cyber Security including Block Chain Technology)

Subject Code : 3164505

WEF Academic Year	: 2021 - 22
Semester	: 6
Category of the Course	: Open Elective

#### Prerequisite :

- Basic understanding of computer and security related concepts.

#### Rationale :

- The course provide an insight of Cyber security Laws and Cybercrime investigations.
- The course focus on Cybercrime evidence for the real world scenarios and challenges.

#### Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR		Theory		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
02	00	02	03	70	30	30	20	150

#### Course Content :

Unit	Course Content	No of Hours	%
1.	<b>Introduction :</b> Cyber security Terminology, Regulation of cyber world, Issues and challenges of cyber security. Cybercrimes and various sections, Section 79, Government Examiner of Digital Evidence. Requirement of certification under different sections. Understanding the report given by cyber forensics.	3	10
2.	<b>IT Act and various Amendments :</b> Relevant sections of Indian Evidence Act, Admissibility of electronic evidence, Indian Penal Code and cybercrimes, Code of Criminal Procedure 1973 – search and seizure provisions, examination of witnesses through audio and video by police, Difference between 79 3b IT, 91 Cr PC and 149 Cr PC, Relevant International laws and acts, Mutual Legal Assistance Treaty, Procedural aspects of law, Federal laws, GDPR, TRIPS and other global law practices related to IT Act.	7	20
3.	<b>Digital Evidence :</b> Digital evidence – definition, characteristics, types, source of digital evidence etc. Traditional forensic evidence vs digital evidence. Classification of Digital evidence. Rules of Evidence, Cyber forensics – definition, classification, Cyber forensics v/s traditional forensics –Introduction to forensic tools, techniques	6	20



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	and technology. Computer Forensic Imaging and Hashing, Anti-forensics - Data hiding techniques.		
4.	<b>Mobile Forensics :</b> Concept of Mobile Forensics, Information available in Mobile Phones, Memory Considerations in Mobiles, Subscriber Identity Module (SIM), SIM File System, Integrated Circuit Card Identification (ICCID), International Mobile Equipment Identifier (IMEI), International Mobile Subscriber Identity (IMSI), Electronic Serial Number (ESN), identification, isolation of mobile devices, search and seizure of mobile devices, acquisition methods (physical, logical, file system, JTAG, Chip off), Analysis of mobile images, understanding a mobile forensic report. Imaging the drive at scene of crime using various tools and techniques – Use of write blocker devices, imaging, and cloning, hashing, authentication of evidence. Packaging and transportation and preservation Documentation – seizure memo, Chain of Custody.	7	30
5.	<b>Data Privacy Law :</b> Data Privacy, Data Privacy Attacks, Data linking and profiling, access control models, role based access control, privacy policies, their specifications, languages and implementation, privacy in different domains- medical, financial, etc. Medical privacy legislation, policies and best practices, Examination of privacy matters specific to the World Wide Web, Protections provided by the Freedom of Information Act.	7	20

#### Text books :

1. Cyber Law and Cyber Crime, Prashant Mali, Snow White Publications Private Limited (latest edition).
2. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sumit Belapure and Nina Godbole, Wiley India Pvt. Ltd. (latest edition).

#### Reference Books :

1. Digital Evidence and Computer Crime, Eoghan Casey, Academic Press. (latest edition).

#### Course Outcome :

After completion of the Course, Students will be able to :

No.	Course Outcomes	RBT Level*
01	Remember the basic terminologies used for cyber security.	RM
02	Understand the fundamental concepts related to cyber laws.	UN
03	Understand the role of digital evidence and process for cyber investigation.	UN
04	Apply the various tools and technologies used for cybercrime investigation.	AP
05	Analyse the data privacy laws and regulations to specific applications.	AN

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



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## Suggested Course Practical List :

- The practical work will be carried out based on the content covered during the academic sessions.

## List of Laboratory/Learning Resources Required :

- Course-related online MOOCs on NPTEL/SWAYAM platform.
- Recently Published papers/articles in reputed journals.

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