SIPNA COLLEGE OF ENGINEERING & TECHNOLOGY, AMRAVATI

An Autonomous Institute Affiliated to

Sant Gadge Baba Amravati University, Amravati, Maharashtra (India)

(Approved by AICTE, New Delhi and Recognized by DTE, Maharashtra)

(Accredited With 'A+' Grade by NAAC)

Bachelor of Technology (B. Tech.)

Open Elective Syllabus: Semester III and IV

Department of Information Technology

B.Tech. Information Technology with Multidisciplinary Minor

(Semester Pattern)

Effective from Academic Year 2025-26

Prepared By: Boards of Studies-Information Technology

Approved By: Academic Council -Sipna COET, Amravati

			30/3/2026	1.1
Chairman Board of Studies	**Dean Academics**	**Chairman Academic Council**	**Date of Release**	**Version**

Program:	B.Tech.(Information Technology)			Semester:			III
Course:	Soft Skills and Presentation Skills			Code:			BTALOE03IT3T
Teaching Scheme				Evaluation Scheme			
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
2	-	2	2	10	15	15	60	100

Methods of Teacher Assessment (TA): Assignment/Quizzes, Attendance, Group Discussions

Course Objectives:

- To understand the key components of communication, including verbal, non-verbal, and technological methods, and their role in effective interpersonal and corporate communication.
- To enhance students' oral communication skills, including active listening, public speaking, and participating in professional dialogues such as interviews, group discussions, and meetings.
- To develop essential reading and writing skills for professional communication, focusing on business writing, job applications, technical reports, and research papers.
- To foster the development of workplace skills that are crucial for leadership, teamwork, time management, and professional behavior in a dynamic work environment.

CourseOutcomes:

After completion of the course, the students will be able to:

CO	CourseOutcomes	BT Level (L1 to L6)
CO-1	Students will be able to identify communication barriers and demonstrate the ability to use verbal, non-verbal, and technological communication tools to convey messages effectively.	L1
CO-2	Students will improve their ability to engage in various forms of oral communication, demonstrating confidence and clarity in interviews, group discussions, presentations, and public speaking.	L3
CO-3	Students will gain the ability to write clear and professional documents, including job applications, resumes, business communication, and technical reports, while applying effective reading techniques for professional material.	L6
CO-4	Students will demonstrate the ability to collaborate effectively, manage time and stress, and exhibit leadership qualities and professional etiquette in a workplace setting.	L3

(6 Hrs.)

Unit I: Aspects of Communication

Communication Through Words: Process of Communication, Barriers to Communication, Importance of Communication, Corporate Communication

Communication Through Body Language: Personal Appearance, Posture, Gestures, Facial Expression, Eye Contact, Space Distancing

Communication Through Technology: Word Processor, Power Point Presentation, Electronic Mail, Voice Mail

Approved in 4th Academic Council Meeting
Dated:- 30/3/2026

Unit II: Oral Communication **(6 Hrs.)**

Dyadic Communication: Face-to-Face Conversation, Telephonic Conversation, Interview, Instruction, Dictation, Public Speaking and Oral Presentation, Active Listening, Meetings, Seminars and Conferences, Group Discussion, Debate, Audio- Visual Aids

Unit III: Reading and Writing Skills **(6 Hrs.)**

Types of Reading, Writing, Writing Methods, Components of a meeting, Business Communication, Job Application and Resume, Writing Scientific and Technical Reports, Speeches and Presentations, Research Papers and Articles

Unit IV: Workplace Skills **(6 Hrs.)**

Leadership Qualities, Understanding Stress, Collaboration and Teamwork, Time Management, Professional Etiquette and Workplace Behavior, Problem-Solving and Adaptability

Total Lecture 24 Hours

Textbooks:

1. Developing Communication Skills, Krishna Mohan & Meera Banerji, 2nd Edition, Macmillan
2. Soft Skills, Dr. Ritu Soryan, S. K. Kataria & Sons

ReferenceBooks:

1. Personality Development and SOFT SKILLS, Barun K. Mitra, Oxford University Press

MOOCsLinksandadditionalreading,learning,videomaterial

1. **MOOC -**
   Coursera: People and Soft Skills for Professional and Personal Success
   Instructor: IBM Skills Network Team
   Description:
   - Covers interpersonal communication, emotional intelligence, and critical thinking.
   - Practical scenarios for workplace and personal growth.
   - Self-paced with certification upon completion.

   Link :https://www.coursera.org/specializations/people-and-soft-skills-for-professional-success

Approved in 4th Academic Council Meeting
Dated:- 30/3/2026

Program:	B.Tech.(Information Technology)			Semester:			III	
Course:	Industry 4.0			Code:			BTALOE04IT3T	
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
2	-	2	2	10	15	15	60	100

Methods of Teacher Assessment (TA): Quizzes/Case Studies/Class Participation and Discussions/ Group Presentations

CourseObjectives:

- **To Provide a Strong Foundation in Industry 4.0.**
- **To provide Knowledge of Industrial Technologies.**
- **To Develop Expertise in IoT, Cloud Computing, and Data Analytics.**
- **To introduce students to the fundamental concepts of Industrial Internet of Things (IIoT), its components, and applications.**

CourseOutcomes:

After completion of the course, the students will be able to:

CO	CourseOutcomes	BT Level (L1 to L6)
CO-1	Understand Industry 4.0 and its scope.	L2
CO-2	Gain knowledge of key next-generation technologies.	L2
CO-3	Demonstrate a clear understanding of IIoT concepts and their role in modern industrial systems.	L3
CO-4	apply learned skills to approach problems that exist in real life.	L3

Unit I: Introduction 4.0 Industry: **(6 Hrs.)**

Introduction to Sensing & Actuation, Industry 4.0: Globalization and Emerging Issues, The Fourth Revolution, LEAN Production Systems, Smart and Conected business perspective.

Unit II: Industry 4.0: **(6 Hrs.)**

Cyber Physical Systems and Next Generation Sensors, Collaborative Platform and Product Lifecycle Management, Artificial Intelligence, Big Data and Advanced Analysis, Introduction to FDM machine, 3D printing.

Unit III: Cloud Computing Technologies: **(6 Hrs.)**

Introduction to Cloud Technologies, Study of top cloud services providers platforms and their real-life use cases exploration (AWS, Azure, GCP,) Hybrid Cloud Systems.

Unit IV: Basics of Industrial Internet of Things (IIOT): **(6 Hrs.)**

Introduction, Industrial Internet system, Industrial process, Key enablers of IIOT, Cyber Security, Introduction to Esp32, Introduction to Basic Sensors (DTH11, MQ135, KU38, MQ5)

Total Lecture 24 Hours

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Textbooks:

1. The Concept Industry 4.0: An Empirical Analysis of Technologies and Applications in Production Logistics By Christoph Jan Bartodziej
2. Industry 4.0: Entrepreneurship and Structural Change in the New Digital Landscape, By Springer

ReferenceBooks:

1. Virtual and Rapid Manufacturing: Advanced Research in Virtual and Rapid Prototyping, By Bartolo, P J, Taylor and Francis
2. Rapid Manufacturing: An Industrial Revolution for a Digital Age By Hopkinson, N, Haque, R., and Dickens, P., Wiley

MOOCs Links and additional reading, learning, video material

1. https://nptel.ac.in/courses/107101086/
2. https://nptel.ac.in/courses/112104265
3. https://nptel.ac.in/courses/106105195/
4. https://nptel.ac.in/courses/107101086/

Program:	B. Tech. (IT)			Semester:			IV	
Course:	Cyber Law			Code:			BTALOE14IT4T	
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE- II	ESE	Total
02	00	02	02	10	15	15	60	100

Methods of Teacher Assessment (TA): Quizzes/ Case Studies/ Class Participation and Discussions/ Group Presentations

Course Objectives:

Throughout the course, students will be expected to demonstrate their understanding of Cyber Law by being able to do each of the following:

1. Understand Cyber Space, Cyber Crime, Cyber Laws, Information Technology, Internet, Internet Services
2. Know the Legal Aspects of Regulation concerned with Cyber Space, Technology and Forms of Cyber Crimes
3. Understand Computer Crimes and Cyber Crimes and Intellectual Property Rights laws.
4. Understand Investigation and Prevention of Cyber Crime and International agencies.

Course Outcomes:

On completion of the course learner will be able to-

CO	Course Outcomes	BT Level (L1 to L6)
CO-1	Understand the principles of Information Technology & Cyber Crime.	L2
CO-2	To learn the Technology & Forms of Cyber Crimes.	L3
CO-3	Identify and understandInformation Technology Act 2000 & IPR laws.	L4
CO-4	To understand Investigation and Prevention of Cyber Crime.	L2

Unit I: Introduction to Information Technology & Cyber Crime **(06 Hrs.)**

Introduction, Definition and Scope, Nature and Extent, Diversity and Span of Victimization, Cyber World, Inadequacy of Law, Influence of Teenagers. Information Technology: Definition & Perspective, Growth & Future, Various Facets & Dimensions. Regulatory Perspective on Technology: Impact of Information and Technology, Regulation of Cyber Space, Legal Aspects of Regulation.

Unit II: Technology & Forms of Cyber Crimes **(06 Hrs.)**

Influence of Technology on Criminality, Forms of Cyber Crimes, A Criminological Analysis, Computer Crimes and Cyber Crimes: Terminological Aspects, Opportunities to Cyber Criminals, Motives of Offenders, Problems Affecting Prosecution, Cyber Crimes Challenges of Prevention and Control.

Unit III: IT Act 2000 & IPR laws **(06 Hrs.)**

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Dated:- 30/3/2024

Overview of The Indian Information Technology Act 2000, Preamble & Coverage, Nature of Offences and Penalties, Miscellaneous and Subsidiary Provisions, Certain Shortcomings, Future Prospects and Needs. Intellectual Property Rights Law and related Legislation: Patent Law, Trademark Law, Copyright.

Unit IV: Investigation and Prevention of Cyber Crime **(06 Hrs.)**

Investigation in Cyber Crimes: Implications and Challenges, Procedural Aspects, Issues, Complications and Challenges Concerning Cyber Crimes, Problems and Precautionary measures for Investigation, Discovery and Appreciation of Evidences. Prevention of Cyber Crimes: National and International Endeavours, International Organization on Computer Evidence (IOCE), OECD Initiatives, Efforts of G-7 and G-8 Groups, Efforts of WTO, Measures of World Intellectual Property Organisation (WIPO).

Total Lecture 24 Hours

Textbooks:

1. Dr Pramod Kr.Singh, "Lawson Cyber Crimes [Along with IT Act and Relevant Rules]" Book Enclave, Jaipur India.

Reference Books:

1. Craig B, "Cyber Law: The Law of the Internet and Information Technology". Pearson Education
2. K.Kumar," Cyber Laws: Intellectual property & E Commerce, Security", First Edition, Dominant Publisher, 2011.
3. Rodney D. Ryder, "Guide to Cyber Laws", Second Edition, Wadhwa And Company, New Delhi, 2007.
4.Vakul Sharma, "Handbook of Cyber Laws" Macmillan India Ltd, Second Edition, PHI, 2003

Approved in.....
Academic Council Meeting
Dated:- 30/3/2026

Program:	B. Tech. (IT)			Semester:			IV	
Course:	Data Privacy and Personal Data Protection			Code:			BTALOE15IT4T	
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
02	00	02	02	10	15	15	60	100

Methods of Teacher Assessment (TA): Class Tests, Assignments, Quiz & Class Attendance

Course Objectives:

- To understand the fundamental concepts of data privacy, types of personal data, and the importance of protecting personal information in the digital age.
- To familiarize students with data protection principles, rights of individuals, and responsibilities of organizations.
- To analyze privacy risks and challenges associated with modern technologies like cloud computing, artificial intelligence, and social media.
- To develop awareness of ethical issues and responsible practices in data collection, usage, and protection.

Course Outcomes:

On completion of the course learner will be able to-

CO	Course Outcomes	BT Level
CO-1	Explain the fundamentals of data privacy, types of personal data, and the importance of data protection in the digital age.	L2
CO-2	Describe data protection principles, rights of individuals, and responsibilities of organizations within legal and regulatory frameworks.	L2
CO-3	Analyze privacy risks and challenges associated with modern technologies such as cloud computing, artificial intelligence, and social media.	L4
CO-4	Evaluate ethical issues in data collection and usage, and suggest measures to ensure responsible data privacy practices.	L5

Unit I: Fundamentals of Data Privacy **(6 Hrs.)**

Introduction to Data Privacy and Data Protection, Difference between Data Privacy and Data Security, Importance of Personal Data Protection in the Digital Age, Types of Personal Data, Sensitive Personal Data, Non-Sensitive Personal Data.

Unit II: Legal and Regulatory Framework **(6 Hrs.)**

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Core Principles of Data Protection: Consent, Purpose Limitation, Data Minimization, Accountability Rights of Individuals (Data Principals), Responsibilities of Organizations (Data Fiduciaries), Role of Data Protection Authorities, Privacy Policies and Terms of Service: Structure, Importance, Real-world examples

Unit III: Technology and Security in Data Privacy **(6 Hrs.)**

Cybersecurity vs Data Privacy, Privacy Risks in Cloud Computing, Role of Artificial Intelligence in Data Privacy: Data misuse risks, Bias and ethical concerns

Unit IV: Emerging Trends and Ethical Issues **(6 Hrs.)**

Privacy Issues in Social Media Platforms, Data Privacy in Mobile Applications, Impact of Big Data on Personal Privacy, Ethical Issues in Data Collection and Usage: User consent, Data misuse, Surveillance concerns

Total Lecture 24 Hours

Textbooks:

1. Guide to Data Protection Author: Information Commissioner's Office (ICO), UK
2. OECD Privacy Guidelines Author: Organisation for Economic Co-operation and Development (OECD)
3. Personal Data Protection Bill Author: Government of India

Reference Books:

1. Theresa Payton & Ted Claypoole, Privacy in the Age of Big Data
2. Bruce Schneier, Data and Goliath
3. Ethics of Data and Analytics Authors: Various (Open University / academic contributors)

MOOCs Links and Additional reading, learning, video material

NPTEL – "Data Security and Privacy"
- https://nptel.ac.in/courses/106106221

Coursera – "IBM Cybersecurity Analyst Professional Certificate"
- https://www.coursera.org/professional-certificates/ibm-cybersecurity-analyst

Coursera – "Data Privacy Fundamentals" (by IBM)
- https://www.coursera.org/learn/data-privacy-fundamentals

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