	National University of Technology
	Computer Science Department
	Course Plan – GE100 Application of Information and Communication Technologies

Course Code	GE100
Course Name	Application of Information and Communication Technologies
Credit Hours	0-2
Contact Hours	0-32
Pre-requisite	None
Co-requisite	None

COURSE DESCRIPTION:
This course is designed for undergraduate students as an introduction to equip students with essential knowledge, skills, and practical experience to harness the power of information and communication technologies for real-world applications in the scientific domain. This course provides students with a comprehensive knowledge of the significance of computers in both business and society. It imparts the foundational knowledge of computers, including their terminology, with a specific focus on personal computer hardware, software, and the internet. This course aims to cover diverse subjects such as computer networks, programming languages, database management, web technologies, cybersecurity, and cutting-edge developments like artificial intelligence and the Internet of Things (IoT).

COURSE OBJECTIVES:
1. To make students understand the foundations, concepts, fundamentals, theories, and principles of information and communication technologies.
2. To help students explore and navigate through the history of computing.
3. To give insights to students of emerging technologies.
4. To make students develop skills for understanding and creating interactive and dynamic websites.
5. To help students understand the importance of digital information security and cybersecurity basics.
6. To help students learn to handle and analyze data using popular software tools.

COURSE LEARNING OUTCOMES (CLOs):
Upon successful completion of the course, the student should be able to:

CLO No.	Description	Learning Domain	Taxonomy Level	PLO Mapping
CLO-1	Describe and apply basic concepts of information technologies	Cognitive	2	1
CLO-2	Demonstrate an understanding of basic information technology software applications	Cognitive	3	2
CLO-3	Demonstrate basic database concepts and	Cognitive	3	2

CLO-4	cloud related application software. Describe how digital technology helps in communication and networks,	Cognitive	3	2

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

The course is designed so that students achieve the following PLOs:

1	Academic Education	☑	6	Individual and Team Work	☐
2	Knowledge for Solving Computing Problems	☑	7	Communication	☐
3	Problem Analysis	☐	8	Computing Professionalism and Society	☐
4	Design/Development of Solution	☐	9	Ethics	☐
5	Modern Tool Usage	☐	10	Life-long Learning	☐

INSTRUCTOR:

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TEXTBOOK AND REFERENCE MATERIAL:

Textbook

1. Charles S. Parker, Understanding Computers: Today and Tomorrow, Course Technology, 25 Thomson Place, Boston, Massachusetts 02210, USA

Reference Material

1. Livesley, Robert Kenneth. An introduction to automatic digital computers. Cambridge University Press, 2017.
2. Computer Fundamentals Book Edition 8 by Pradeep Sinha, Priti Sinha
3. Zawacki-Richter, Olaf, and Colin Latchem. "Exploring four decades of research in Computers & Education." Computers & Education 122 (2018): 136-152.

MARKING CRITERIA:

Type of Assessment	Weightage (%)
Assignments	5
Quizzes	10
Project/ Problem Based Learning Activities PBLs	5
Mid Term Exam	30
Final Term Exam	50

Total	100

WEEK WISE PLAN:

Week	Topics Covered	Reference	CLO No	PLO No.	Level of Learning 1-6	Learning Domain
1	Introducing today's Technologies, Computers, Devices, and the Web	Chapter 1 of the Textbook	1	1	2-3	Cognitive
2	Connecting and communicating Online, The Internet, Websites and Media **ASSIGNMENT 1**	Chapter 8 of the Textbook	4	2	2-3	
3	Computer and Mobile Devices – Super Computers Cloud Computing and Embedded Computers	Chapter 1 of the Textbook	1	1	2-3	
4	Processing and Memory **QUIZ 1**	Chapter 2 of the Textbook	1	1	2-3	
5	Storage	Chapter 3 of the Textbook	1	1	2-3	
6	Input and Output: Extending Capabilities of Devices **ASSIGNMENT 2**	Chapter 4 of the Textbook	1	1	2-3	
7	Operating Systems: Managing, Co- Coordinating, and Monitoring Resources, Application software **QUIZ 2**	Chapter 5, 6 of the Textbook	2	1	2-3	
8	Digital Security Ethics and Privacy	Chapter 9 of the Textbook	2	2	2-3	
9	**MID SEMESTER EXAM**					
10	Preserving data on clouds **ASSIGNMENT 3**	-	4	2	2-3	
11	Communicating Digital Content: Wired and Wireless Networks	Chapter 7 of the Textbook	4	2	2-3	
12	Data Communication and Networks, Network topology **QUIZ 3**	Chapter 7 of the Textbook	4	2	2-3	

13	Building Solutions: Database System and Application Dev Tools **ASSIGNMENT 4**	Chapter 12 of the Textbook	3	2	2-3	
14	Building solutions: Program Development and Programming languages	Chapter 11 of the Textbook	3	2	2-3	
15	E-Commerce **QUIZ 4**	-	2	2	2-3	
16	Working in the Enterprise: Systems, Certifications and Careers	Chapter 10 of the Textbook	2	2	2-3	
17	**END SEMESTER EXAM**					