

Code:1BESC104E/204E**Course: Essentials of Information Technology****Credits: 3****L: T:P – 3:0:0****SEE: 50 Marks****CIE: 50 Marks****SEE Hours: 3****Max. Marks: 100**

Prerequisites if any	NIL
Learning objectives	<ul style="list-style-type: none"> Gain foundational knowledge of computer systems, software, networking, and data management. Develop skills in problem-solving, communication, and ethical IT practices.

Course Outcomes:*On the successful completion of the course, the student will be able to*

COs	Course Outcomes	Bloom's level
CO1	Explain fundamental concepts of Information Technology	Understand
CO2	Describe the role of cyber security and ethics issues in Information Technology	Understand
CO3	Apply basic software engineering concepts for Website and application development.	Apply
CO4	Develop queries for quick insert, access and updating of structured information.	Apply

Mapping with POs and PSOs:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11		PSO1	PSO2
CO1	3	1	1						1	2	3		1	1
CO2	3	1	1		3	3			2	2	3			1
CO3	3	3	3	2	3				2	2	3		2	2
CO4	3	3	3	2	2				2	2	2		3	2

Mapping Strength: **Strong– 3 Medium – 2 Low – 1**

Course Structure

No.	Modules	No. of Lecture Hours	No. of Tutorial Hours	No. of Practical Hours
Module 1				
1.1	Data Storage: Bits and Their Storage	1		
1.2	Main Memory, Mass Storage	1		
1.3	Representing Information as Bit Patterns, The Binary System	1		
1.4	Storing Integers, Storing Fractions	1		
1.5	Data Manipulation: Computer Architecture	1		
1.6	Machine Language, Program Execution,	1		
1.7	Arithmetic/Logic Instructions,	1		
1.8	Communicating with Other Devices.	1		
Module 2				
2.1	Operating Systems: The History of Operating Systems	1		
2.2	Operating System Architecture,	1		
2.3	Coordinating the Machine's Activities	1		
2.4	Handling Competition Among Processes, Security.	1		
2.5	Algorithms: The Concept of an Algorithm	2		
2.6	Algorithm Representation	1		
2.7	Algorithm Discovery.	1		
Module 3				
3.1	Networking and the Internet: Network Fundamentals, The Internet, Ethical Issues in Information Technology: Overview, Ownership Rules, Ethics and Online Content.	1		
3.2	The World Wide Web, Internet Protocols, Security.	1		

3.3	Cybersecurity: Overview—What is Cybersecurity?, Brief History of Cybersecurity Events,	1		
3.4	The Basic Information Security Model	1		
3.5	Cyber Hygiene, Teams in Cybersecurity.	1		
3.6	Ethical Issues in Information Technology	1		
3.7	Ownership Rules	1		
3.8	Ethics and Online Content.	1		
Module 4				
4.1	Software Engineering: The Software Engineering Discipline	1		
4.2	The Software Life Cycle	1		
4.3	Software Engineering Methodologies	1		
4.4	Modularity	1		
4.5	Tools of the Trade	1		
4.6	Database Systems	1		
4.7	Database Fundamentals	1		
4.8	The Relational Model	1		
Module 5				
5.1	Introduction to HTML and Website Development: What is HTML?	1		
5.2	Cascading Style Sheets (CSS)	2		
5.3	Website Design and Storyboarding	1		
5.4	Structure of a Website.	1		
5.5	Computer Graphics: The Scope of Computer Graphics	1		
5.6	Modeling	1		
5.7	Rendering	1		
Total No. of Lecture Hours		40	-	-
Total No. of Tutorial Hours			00	-
Total No. of Practical Hours				00

Text book:

1. J. Glenn Brookshear and Dennis Brylow, Computer Science: An Overview, 12th Edition, Pearson Education Limited, 2017.
2. Roy, Shambhavi; Daniel, Clinton; and Agrawal, Manish, "Fundamentals of Information Technology", Digital Commons at The University of South Florida (2023).
https://digitalcommons.usf.edu/dit_tb_eng/19

Reference Book:

1. V. Rajaraman, "Introduction to Information Technology", Third Edition, PHI Learning, 2018.
2. Pelin Aksoy, Information Technology in Theory, First Edition, Cengage.

Web links and Video Lectures (e-Resources):

- Information Technology:
https://onlinecourses.swayam2.ac.in/cec20_cs05/preview
- Computer Organization and Architecture:
<https://nptel.ac.in/courses/106103068>
- Introduction To Internet: <https://nptel.ac.in/courses/106105084>