|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust (R)
SJB Institute of Technology
BGS Health and Education City, Dr. Vishnuvardhana Road, Kengeri, Bengaluru-560060
Approved by AICTE, New Delhi.
Autonomous Institute affiliated to Visvesvaraya Technological University, Belagavi
Accredited by NAAC with 'A+'grade, Certified by ISO 9001 - 2015
Recognized by UGC, New Delhi with 2(f) & 12 (B)

Semester:	**I / II**	**Course Type:**	ESC		
Course Title: Essentials of Information Technology					
Course Code:	**25ITT13/23**			**Credits:**	3
Teaching Hours/Week (L:T:P:S)			3:0:0:1	**Total Hours:**	40
CIE Marks:	50	**SEE Marks:**	50	**Total Marks:**	100
SEE Type:	Theory			**Exam Hours:**	03

I. Course Objectives

This course will enable students to,

- To understand the concepts of data storage elements.
- To study the history of operating system
- To learn the network and internet components
- Illustrate the software engineering principles.
- To know the concepts of HTML and design the WebPages.

II. Teaching-Learning Process (General Instructions)

These are sample Strategies; that teachers can use to accelerate the attainment of the various course outcomes.

1. Lecturer method (L) needs not to be only a traditional lecture method, but alternative effective teaching methods could be adopted to attain the outcomes.

2. Use of Video/Animation to explain functioning of various concepts.

3. Encourage collaborative (Group Learning) Learning in the class.

4. Ask at least three HOT (Higher order Thinking) questions in the class, which promotes critical thinking.

5. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.

6. Use any of these methods: Chalk and board, Active Learning, Case Studies.

III. COURSE CONTENT

Module-1	**8 Hours**

Data Storage: Bits and Their Storage, Main Memory, Mass Storage, Representing Information as Bit Patterns, The Binary System, Storing Integers, Storing Fractions. Data Manipulation: Computer Architecture, Machine Language, Program Execution, Arithmetic/Logic Instructions, Communicating with Other Devices.
Textbook 1: Chapter-1 (1.1-1.7), Chapter-2 (2.1-2.5)

RBT Levels: L1, L2

Module-2	**8 Hours**

Operating Systems: The History of Operating Systems, Operating System Architecture, Coordinating the Machine's Activities, Handling Competition Among Processes, Security. Algorithms: The Concept of an Algorithm, Algorithm Representation, Algorithm Discovery.
Textbook 1: Chapter-3, Chapter-5 (5.1-5.3)

RBT Levels: L1, L2

Module-3	**8 Hours**

Networking and the Internet: Network Fundamentals, The Internet, The World Wide Web, Internet Protocols, Security. Cybersecurity: Overview—What is Cybersecurity?, Brief History of Cybersecurity Events, The Basic Information Security Model, Cyber Hygiene, Teams in Cyber security. Ethical Issues in Information Technology: Overview, Ownership Rules, Ethics and Online Content.
Textbook 1: Chapter-4 Textbook 2: Chapter-16, Chapter-17

RBT Levels: L1,L2

Module-4	**8 Hours**

Software Engineering: The Software Engineering Discipline, The Software Life Cycle, Software Engineering Methodologies, Modularity, Tools of the Trade. Database Systems: Database Fundamentals, The Relational Model.
Textbook 1: Chapter-7 (7.1-7.5), Chapter-9 (9.1-9.2)

RBT Levels:L1,L2

Module-5	**8 Hours**

Introduction to HTML and Website Development: Introduction to HTML, Cascading Style Sheets (CSS), Website Design and Storyboarding, Structure of a Website. Computer Graphics: The Scope of Computer Graphics, Overview of 3D Graphics, Modeling, Rendering, Introduction to fullstack.
Textbook 2: Chapter-12. Textbook 1: Chapter-10 (10.1-10.4)

RBT Levels: L1,L2

IV. COURSE OUTCOMES

CO1	Understand the different of information representation and manipulation schemes.
CO2	Utilize Information Technology (IT) infrastructure for effective information exchange.
CO3	Apply basic software engineering concepts for Website and application development.
CO4	Develop queries for quick insert, access and updating of structured information.
CO5	Identify role of cyber security and ethics issues in Information Technology (IT).

V. CO-PO-PSO MAPPING (mark H=3; M=2; L=1)

PO/PSO	1	2	3	4	5	6	7	8	9	10	11	12	PSO1	PSO2
CO1	2	1	2											
CO2	2	1	2											
CO3	2	1	2											
CO4	2	1	2											
CO5	2	1	3									1		

VI. Assessment Details (CIE & SEE)

General Rules: Refer CIE and SEE guidelines based on course type for autonomous scheme 2023 Dated on 10-02-2025.

Continuous Internal Evaluation (CIE): Refer Annexure section 1

Semester End Examination (SEE): Refer Annexure section 1

VII. Learning Resources

VII(a): Textbooks:

Sl. No.	Title of the Book	Name of the author	Edition and Year	Name of the publisher
1.	Computer Science: An Overview,	J. Glenn Brookshear and Dennis Brylow	12th Edition, 2017.	Pearson Education Limited,
2	Fundamentals of Information Technology.	Roy, Shambhavi; Daniel, Clinton; and Agrawal, Manish,	2023	Digital Commons at The University of South Florida

VII(b): Reference Books:

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

VII(c): 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

VIII: Activity Based Learning / Practical Based Learning/Experiential learning:

- Activity Based Learning (Suggested Activities in Class)/ Practical Based learning
  Quizzes
- Assignments
- Seminar