

Gujarat University

K. S. School of Business Management and Information Technology
[Five Years' (Full – Time) M.Sc. (CA&IT) Integrated Degree Course]
First Year M.Sc. (CA&IT) (Semester - I)

Course Name: Fundamental of Computer Architecture and Electronics

Course Code: IDC-IMSCIT-114T

Course Credit: 2

Course Outcomes:

Upon successful completion of this course, students will be:

- Acquainted with the basic structure and operation of digital computers.
- Able to understand the fundamental concepts of electronic circuits and devices.
- Knowledgeable about computer organization including the architecture and operation.
- Equipped with a basic understanding of microprocessor and microcontroller operation.

Contents:

Unit No.	Course Content	Hours	Credits
1	Basics of Computer Organization: <ul style="list-style-type: none">• Overview of Computer Architecture and Organization• Data Representation: Binary, Octal, Hexadecimal• Basics of Boolean Algebra and Logic Gates• CPU Organization• Memory Hierarchy, Types, and Organization• Input / Output Organization	15	1
2	Introduction to Electronics: <ul style="list-style-type: none">• Fundamentals of Electronic Circuits• Introduction to Analog and Digital Electronics• Basic Electronic Components and Their Characteristics• Introduction to Microprocessors and Microcontrollers	15	1

Reference Books:

1. Digital Design and Computer Architecture
by Sarah Harris and David Harris
2. Fundamentals of Digital Circuits
by A. Anand Kumar
3. Microprocessor 8085 and Its Interfacing
by Sunil Mathur
4. Principles of Computer System Design
by Jerome Saltzer and M. Frans Kaashoek

Accomplishments after Completing the Course:

Upon successful completion of the "Fundamental of Computer Organization and Electronics" course, students will be able to:

- Students will have a clear understanding of the basic architecture and organization of computers.
- Students will comprehend the fundamental concepts of digital circuits and Boolean algebra.
- Students will have basic knowledge about the functioning of microprocessors and microcontrollers.