

Subject Code: 1ET1100103	Subject Title: Computer and Information Technology
Prerequisite	-

Course Objective:

The objective is to provide the basic knowledge of a computer system, its history, architecture and components of a computer system. Students will gain knowledge of number systems and their conversions. This course is intended to develop skills to programming concepts like flowchart, algorithms and pseudo code.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	1	2	5	70	30	30	20	150

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1	Basic Building Blocks of Computer Introduction to computers, History and Evolution, Generation of Computer, Applications of Computers, Capabilities and Limitations, Components of a computer system: Control Unit, ALU, I/ O Devices, Memory: RAM, ROM, EPROM, PROM, Flash Memory and other types of memory.	6	20
2	Computer Codes Introduction to Computer Codes, Decimal System, Binary System, Hexadecimal System, Octal System, Conversion between number systems, One's Complement, Two's Complement, Boolean Algebra and Laws.	4	10
3	Introduction to IT Introduction to IT, Need of IT, Basics of information storage and processing, Role and Applications of IT, Different Types of software, Information systems, Business data processing. Software Packages: Database applications, Office suits, Graphics Tools.	8	20
4	Computer Networks: Introduction, Data Communication, Types of Network (LAN, MAN, WAN), Mode of transmission, Network Topologies, Network devices (routers, hubs, bridges, switches, proxy servers etc), Internet, Intranet, Extranet.	6	20
5	Operating Systems Operating System: Definition and use, History & Evolution, Functions of an Operating System, Types of OS: Batch Processing, Multiprogramming, Multi-Tasking, Multiprocessing.	8	15
6	Introduction to Programming Concepts Introduction to Programming Concepts: Define program, Process of programming, Algorithms, Introduction to flowcharts, Basic symbols and drawing of flow charts, Advantages and limitations of flow charts, Pseudo codes: Sequence logic, Selection logic, Iteration logic, Advantage and disadvantages.	8	15

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To understand the basic knowledge of computer systems and its history.	2. Understanding
CLO2	To understand the architecture and components of a computer system.	1 Remembering
CLO3	To understand the number systems and their conversions.	2. Understanding
CLO4	To develop skills to programming concepts like flowchart, algorithms and pseudo code.	3 Applying, 2 Understanding
CLO5	Relate the features of flowchart and algorithm	2. Understanding
CLO6	Interpret the architecture and components of a computer system	6 Creating

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M	L	L													
CLO2	M	L	L						H				M			
CLO3	M	L	L						M		H		H			
CLO4	M	L	L						M		H					

CLO5	M	L	M				H					H				
CLO6	M	L	L						M			L				

H: High, M: Medium, L: Low

Course Outcome:

At the end of this course, the student would be able

1. To understand the basic knowledge of computer systems and its history.
2. To understand the architecture and components of a computer system.
3. To understand the number systems and their conversions.
4. To develop skills to programming concepts like flowchart, algorithms and pseudo code.

List of Book References:

1. Fundamentals of Computer, PHI Learning Pvt. Ltd., V. Rajaraman.
2. Computer Fundamentals, Wheeler Publisher, Nagpal, D. P.
3. Data Communication and Networking, 4th Edition, Behrouz A. Forouzan
4. Pearson India by M. Morris R. Mano.
5. Computer Fundamentals (First Edition-2010) Publisher: Pearson by Anita Goel.
6. Fundamentals of Computer (First Edition- 2009) Publisher: McGraw-Hill by Balaguruswamy.

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

1. Learn and identify the fundamentals of components in a typical computer system.
2. Learn and identify various memory modules and IO devices including secondary storage devices.
3. Getting familiar with Windows operating system.
4. Getting familiar with Linux operating systems.
5. Learn and identify the institute's computing networking structure.
6. Study various networking components involved in institute networks
7. Getting acquainted with personal emails, blogs and social accounts.
8. Search various e-Learning sites available and prepare a comparison chart for common features.
9. Search various e-Commerce (shopping) sites available and prepare a comparison chart for common features.
10. Search various online matrimonial sites available and prepare a comparison chart for common features.
11. Prepare a short report on guidelines for novice Internet users mentioning Dos and Don'ts.
12. Google Classroom Exercise.