

Course code	DECAP145	Course Title	FUNDAMENTALS OF INFORMATION TECHNOLOGY		
			WEIGHTAGE		
			CA	ETE(Th.)	ETE (Pr.)
			30	40	30

Course Outcomes: Through this course, students will be able to

C01: understand basic concepts and terminology of information technology.

C02: have a basic understanding of personal computers and their operations.

C03: understand various software and hardware, various security issues.

C04: familiarize students with complete fundamentals and the packages commonly used in computing software.

C05: gain writing skills and various presentation aspects using word processing software.

Unit No.	Contents
Unit-1	Computer Fundamentals: Characteristics & Generation of Computers, Block diagram of Computer. Application of IT in various sectors. Data Representation: Binary Number System Octal, Hexadecimal, decimal and their Conversion.
Unit-2	Memory: Types, Units of memory, RAM, ROM, Secondary storage devices–HDD, Flash Drives, Optical Disks: DVD, SSD I/O Devices –Keyboard, Mouse, LCDs, Scanner, Plotter, Printer & Latest I/O devices in market
Unit-3	Processing Data: Transforming data into information, how computers represent data, How computers process data, Machine cycles, Memory, Registers, The Bus, Cache Memory
Unit-4	Operating Systems: operating system basics, Purpose of the operating system, types of operating system, providing a user interface, Running Programs, Sharing Information, Managing Hardware, Enhancing an OS with utility software.
Unit-5	Data Communication: Local and Global reach of the network, Digital and Analog Transmission, Data communication with standard telephone lines and Modems, Using Digital Data Connections, Wireless networks
Unit-6	Networks: Sharing data any time anywhere, uses of a network, Common types of a network, Hybrid Networks, how networks are structured, Network topologies and Protocols, Network Media, Network Hardware
Unit-7	Graphics and Multimedia: Understanding graphics File Formats, Getting Images into your Computer, Graphics Software, Multimedia Basics
Unit-8	Data Base Management Systems: The Database, The DBMS, Working with a database, Data bases at Work, Common Corporate Database Management Systems
Unit-9	Software Programming and Development: What is computer Program, Hardware/Software Interaction, planning a Computer Program, how programs Solve Problems
Unit-10	Programming Languages and Programming Process: Categories of Programming Languages, Machine and Assembly Language, Higher Level Languages, WWW development languages, The SDLC of Programming
Unit- 11	Internet: Basic Internet terms: Web Page, Website, Homepage, Browser, URL, Hypertext, ISP, Web Server, HTML, DHTML, XML, Introduction to client side and server side scripting. Applications: WWW, e-mail, Instant Messaging, Internet Telephony, Video conferencing,

	Web Browser & its environment
Unit- 12	Understanding The Need of Security Measures: Basic Security Concepts, Threats to Users, Threats to Hardware, Threat to Data, Cyber Terrorism. Taking Protective Measures: Keeping your System Safe, Protecting Yourself, protecting your Privacy, Managing Cookies, Spy ware and other BUGS, keeping your data secure, Backing Up data, Safeguarding your hardware
Unit-13	Cloud Computing and IoT: SaaS, PaaS, IaaS, Public and Private Cloud; Virtualization, Virtual Server, Cloud Storage, Database Storage, Resource Management, Service Level Agreement, Basics of IoT and its applications.
Unit-14	Futuristic World of Data Analytics: Introduction to Big data and Analysis Techniques: Elements, Variables, and Data categorization Levels of Measurement, Data management and indexing, Introduction to statistical learning and overview of various tools used for data analysis.

LABORATORYWORK:

1. Hardware familiarizing with various I/O Peripheral devices, storage devices.
2. Familiarity with DOS, Implementing various internal and external commands in DOS.
3. MS-Windows: Familiarizing with windows operating system; using built-in accessories; managing files and folders using windows explorer; working with control panel; installing hardware and software.
4. MS-Office (or any other Office Suite), meaning and features, its components.

READINGS:

1. FUNDAMENTAL COMPUTER CONCEPTS by WILLIAM S DAVID
2. FUNDAMENTAL COMPUTER SKILLS by FENG-QI LAI, DAVID R. HOFMEISTER