
OPERATING SYSTEM- I

Paper Code	CEN-402
Course Credits	4
Lectures / week	3
Tutorial / week	1
Course Description	UNIT – I INTRODUCTION TO OPERATING SYSTEM

Definition, What Operating Do, Single Processor Systems, Multiprocessor/parallel Systems. Concept of Multiprogramming, Time-sharing System, Operating System Operation: Dual Mode Operation: Kernel Mode, User Mode. Distributed system, Real Time system, Process Management, Memory Management, Storage Management.

UNIT- II

Operating System Services, System Call, Types of System calls, System Programs, Operating System Design and Implementation, Operating system structure, User Operating- System Interface.

UNIT- III

PROCESS MANAGEMENT & PROCESS SCHEDULLING

The Process, Process State, Process Control Block, Process Scheduling, Operations on Processes, Interprocess Communication (IPC). Concept of Threading, scheduling levels, Scheduling Criteria, Scheduling Algorithms: First Come, First Served, Shortest Job First, Priority Scheduling, Round Robin Scheduling, Multilevel Queue Scheduling, Multilevel Feedback Queue Scheduling, Multiprocessor Scheduling

UNIT- IV

PROCESS COMMUNICATION AND SYNCHRONIZATION

Background, The Critical- Section Problem, Synchronization Hardware, Semaphores, Classical Problems of Synchronization: Bounded- Buffer Problem, The Reader- Writers Problem, Dining-Philosophers Problem, Monitors: Usage, Dining- Philosophers Solution using Monitors.

UNIT – V

MEMORY-MANAGEMENT STRATEGIES

Background, The Critical- Section Problem, Synchronization Hardware, Semaphores, Classical Problems of Synchronization: Bounded- Buffer Problem, The Reader- Writers Problem, Dining-Philosophers Problem, Monitors: Usage, Dining- Philosophers Solution using Monitors.

References / Text Books:

- Peterson: Silberschatz, Galvin “Operating System Concepts”, Addison Wiley 2006, 7th Addition.
- Milenkovic, Milan: Operating system concepts and Design, McGraw Hill, 1994.
- Andrew S. Tannenbaum, “Modern Operating Systems”, PHI, 3rd Edition, 2011,
- E. Madnick, J. Donovan, “Operating Systems”, Tata McGraw Hill,
- “Operating Systems: Internals and Design Principles” by William Stallings
- “Operating Systems: A Concept-Based Approach” by D. M. Dhamdhere
- Operating Systems: A Modern Perspective” by Gary J. Nutt
Gcc, Dev c++

Computer Usage / Software Requires:

INFORMATION TECHNOLOGY

Paper Code CEN-403

Course Credits 4

Lectures / week 3

Tutorial / week 1

Course Description **UNIT – I**

What is information technology? Data and Information, types of information, information security and integrity, disaster recovery, privacy and piracy. Advantages and impacts of information technology, applications of information technology, IT services and support.

UNIT- II

Input Devices: Pointing Devices, Scanning Devices, Audio Input Devices, Video Input Devices, Human biology Input Devices. Output Devices: Video Display Devices, CRT, flat panel, video controllers; Printers, impact printers and non-impact printers, Sound Output, 3D Output.

UNIT- III

Magnetic storage devices, floppy, hard disk drive, tape, RAID; Optical Storage Devices, CD, CD-RW, DVD, DVD-RW; How read and write works on storage medium, Drive Speed and Performance. **Microchips:** RAM, ROM, CMOS, Flash, How memory works; case studies of Intel, AMD, Cyrix.

UNIT- IV

Modem, DSL, ISDN, ISP, TCP/IP, DNS, Telnet, FTP; Web Security: Data Security, firewalls, how virus works, hazards and risks; intranets, extranets; DTV, HDTV, SDTV, Videoconferencing; Graphics and Multimedia: Bitmap and Vector Graphics, Interactive multimedia, hypermedia, HTML, 3D modeling, animation; Compression techniques, JPEG, MPEG.

UNIT – V

Business Intelligence, E-commerce: B2B, B2C, C2C case studies; Data Mining and Warehousing; ERP, Emerging Technologies and Trends.

References / Text

Books:

- Peter Norton, “Introduction to Computers, Tata Mc-Graw Hill.
- Williams Sawyer, “Using Information Technology” Tata Mc-Graw Hill.
- M N Doja, “Introduction to Computers and Information Technology”

Computer Usage /

Not required

Software Requires:
