B.Sc. Forensic Science: Semester-III	
FST306: Computer Science-III	
Teaching Scheme	Examination Scheme
Lectures: 3 hrs/Week	Class Test – 12 Marks
Tutorials: 1 hr/Week	Teachers Assessment – 6 Marks
	Attendance – 12 Marks
Credits: 4	End Semester Exam – 70 marks

Course outcomes:

- After the completion of the course the students will be able:
- Understand role, responsibilities, features, and design of operating system.
- Analyze memory management schemes and process scheduling algorithms.
- Apply process synchronization techniques to formulate solution for critical section problems.
- Illustrate concept of disk scheduling.
- Evaluate process deadlock handling techniques.

Unit I – Introduction to Operating System
• Operating system and functions, Classification of Operating systems: Batch, Interactive, Time-sharing, Real-Time System, Multiprocessor Systems, Multiuser Systems, Multithreaded Systems, Operating System Structure, System Components, Operating System Services, Kernels, Monolithic and Microkernel Systems.
Unit II – Process Management
• Process Concept, Process States, Process Synchronization, Critical Section, Mutual Exclusion, Classical Synchronization Problems, Process Scheduling, Process States, Process Transitions, Scheduling Algorithms Interprocess Communication, Threads and their management, Security Issues.
Unit III – CPU Scheduling
• Scheduling Concepts, Techniques of Scheduling, Preemptive and Non- Preemptive Scheduling: First-Come-First-Serve, Shortest Request Next, Highest Response Ration Next, Round Robin, Least Complete Next, Shortest Time to Go, Long, Medium, Short Scheduling, Priority Scheduling. Deadlock: System model, Deadlock characterization, Prevention, Avoidance and detection, Recovery from deadlock.
Unit IV – The Internet
• Introduction to cyber-crimes and their classifications, Spamming, Web Jacking, Phishing, Spoofing,
• Types of Virus and Worms
• Cyber Criminals and their Targets
• Tools for Cyber Forensic Analysis
Unit V – Memory Management
• Memory allocation, Relocation, Protection, Sharing, Paging, Segmentation, Virtual Memory, Demand Paging, Page Replacement Algorithms, Thrashing.
I/O Management and Disk Scheduling
• I/O devices, and I/O subsystems, I/O buffering, Disk storage and disk scheduling, RAID.

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