

Syllabus for Bachelor of Computer Application (BCA) Programme
(Effective for Students Admitted in Academic Session 2018-2019)

Detailed Syllabus
Semester III

Paper: Operating Systems

Code : BCAN-301

Contacts Hours / Week : 4L+1CE

Credits : 4

1. Module I: Introduction (3L) Importance of OS, Basic concepts and terminology, Types of OS, Different views, Journey of a command execution, Design and implementation of OS
2. Module II: Process (10L) Concept and views, OS view of processes, OS services for process management, Scheduling algorithms, Performance evaluation; Inter-process communication and synchronisation, Mutual exclusion, Semaphores, Hardware support for mutual exclusion, Queuing implementation of semaphores, Classical problem of concurrent programming, Critical region and conditional critical region, Monitors, Messages, Deadlocks
3. Module III: Resource Manager (8L) Memory management, File management, Processor management, Device management
4. Module IV: Security and related Issues (5L) Security and protection, Authentication, Protection and access control, Formal models of protection, Worms and viruses
5. Module V: Multiprocessor System (6L) Multiprocessor system, Classification and types, OS functions and requirements, Introduction to parallel computing, Multiprocessor interconnection synchronization
6. Module VI: Distributed OS (4L) Introduction to distributed processing
7. Module VII: Introduction to UNIX OS / DOS (4L) Case studies

Suggested Readings:

- 1. Operating Systems, Galvin, John Wiley**
- 2. Operating Systems , Milankovic, TMH**
- 3. An Introduction to Operating System, Bhatt, PHI**
- 4. Modern Operating System, Tannenbaum, PHI**
- 5. Guide to Operating Systems, Palmer, VIKAS**
- 6. Operating Systems, Prasad, Scitech**