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| Program: Bachelor of Science Honours (Information Technology) | | | | | | | Semester: II | | | |
| Course: Advanced Operating Systems | | | | | | | Code: | | | |
| Teaching Scheme | | | | | Evaluation Scheme | | | | | |
| Lecture | Practical | Tutorial | | Credits | Theory | | | | Practical | |
| Internal | External | | | Internal | External |
| 30 | Nil | Nil | | 30 | 20 Marks | 30 Marks | | | Marks | Marks |
|  | | | | | | | | | | |
| Internal Component | | | | | | | | | | |
| Class Test Duration Mins | | | Assignment& projects | | | | | Class Participation | | |
| 10 Marks | | | 10 Marks | | | | | Nil | | |
|  | | | | | | | | | | |
| Learning Objectives   1. To learn the concept of Memory 2. To learn the concept of deadlock 3. To learn different ways of deadlock detection and prevention 4. To learn about the file systems | | | | | | | | | | |
| Learning Outcomes   1. Understand the concept of Memory in Operating Systems 2. Understand the concept of deadlock 3. To understand the different ways of Deadlock Detection and Prevention 4. Understand the file systems in Operating Systems | | | | | | | | | | |
| Pedagogy   * PPTs, Case studies, Group discussions, Classroom Activity, Videos, Research papers, News articles etc. | | | | | | | | | | |

**Module 1**  (10)

**Memory Management: N**o memory abstraction, memory abstraction: address spaces, virtual memory, page replacement algorithms, design issues for paging systems, implementation issues, segmentation

**Module 2**  (10)

**Deadlocks:** Resources, introduction to deadlocks, the ostrich algorithm, deadlock detection and recovery, deadlock avoidance, deadlock prevention issues.

**Module 3**  (10)

**File Systems:**

Files, directories, file system implementation, file- system management and optimization, MS-DOS file system, UNIX V7 file system, CD ROM file system

**References**

1. Modern Operating System by Andrew S. Tanenbaum

2. Maurice J. Bach, “Design of UNIX Operating System”, PHI

3. Red Hat Enterprise Linux 6 Administration Sander van Vugt John Wiley and Sons 2013

4. Red hat Linux Networking and System Administration Terry Collings and Kurt Wall Wiley 3rd

5. Linux Administration: A Beginner's Guide Wale Soyinka TMH Fifth Edition