1.Course Outline

Course Title	Operating Systems Lab – Unix & Shell Programming		
Course Code	CAS753		
Department	Computer Applications	**No. of Credits**	3
Programme	M.Sc (Computer Science)	**Learning Hours**	3 Per Week
Pre-requisites Course	Computer Fundamentals	**Faculty Name**	Dr. R. Gobi
E-mail	gobir@nitt.edu	**Telephone No.**	0431-2504653
Course Type	Core Course	**Office**	Lyceum 109

2. Course Overview

  This course will introduce the shell programming concepts of operating systems, such as processes and threads, scheduling, synchronization, memory management, file systems, input and output device management and security.

3. Course Objectives

To introduce programming concepts and features of OS with case study on different operating systems with example.

4. Course Outcomes (CO)

Students will be able to:

1. Use system calls to interact with OS

2. Synchronize multiple processes and handle issues in synchronization

3. Implement memory management techniques

4. Implement algorithms in secondary storage and file management techniques

5. Design the functionalities of OS

5. Course Outcome (CO)	Aligned Programme Outcome (PO)											
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
Use system calls to interact with OS	B	B	M	S	S	B	M	M	M	B	M	M
Synchronize multiple processes and handle issues in synchronization	B	B	M	S	S	B	M	M	M	B	M	M
Implement memory management techniques	B	B	M	S	S	B	M	M	M	B	M	M
Implement algorithms in secondary storage and file management techniques	B	B	M	S	S	B	M	M	M	B	M	M
Design the functionalities of OS	B	B	M	S	S	B	M	M	M	B	M	M

6. Course Teaching and Learning Activities		
Week	Mode of Delivery	Topics
1.	Demo	Shell Script to perform basic arithmetic, logic and string operations
2.	Demo	Menu driven shell programs using shell commands
3.	Demo	Menu driven programs for file and directory manipulations
4.	Demo	Program to implement Round Robin Scheduling
5.	Demo	Program to the Bounded-Buffer Problem and Reader-Writer Problem
6.	Demo	Program to the Dining Philosopher Problem
7.	Demo	Program to the Bankers Algorithm
8.	Demo	Program to implement Memory Management Algorithms
9.	Demo	Program to implement Page Replacement Algorithms
10.	Demo	Program to implement Disk Scheduling Algorithms

8. Course Assessment Methods

Sl. No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1.	Assessment 1	4th week	120 Mins	30
2.	Assessment 2	8th week	120 Mins	30
3.	Assessment 3	9th week	60 Mins	15
4.	End Semester Exam	-	120 Mins	25
			Total	100

9. Essential Readings (Textbooks, Reference books, Websites, Journals, etc.)

1. Silberschatz, Galvin, Gagne, "Operating System Concepts", 7 edition, Addison-Wesley, 2003.

10. Course Exit Survey

1. The students through the class rep may give their feedback at any time to the course HOD which will be duly addressed.
2. The students may also give their feedback during Class Committee meeting.
3. 'Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.
4. The COs will be computed after arriving at the final marks.

11. Course Policy (including plagiarism, academic honesty, attendance, etc.)

1. Plagiarism
   The students are expected to not do malpractice in cycle tests/examinations. If found to copy from bits/other students, action will be taken.
2. Attendance
   100% is a must. However, relaxation upto 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.
3. Academic Honesty
   Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.

12. Additional Course Information

The students can get their doubts clarified at any time with their faculty member.

For Senate's Consideration

(Dr. R. Gobi)	(Dr. S. Sangeetha)	(Dr. A. Vadivel)
Course faculty	Class Committee Chairperson	Head of the Department