



COURSE PLAN

1.Course Outline			
Course Title	OPERATING SYSTEMS LAB – UNIX & SHELL PROGRAMMING		
Course Code	CAS 753		
Department	Computer Applications	No. of Credits	2
Pre - Requisite Course	-	Faculty Name	Adlin Suji K
PAC Chairman	Dr.U.Srinivasulu Reddy		
Email	adlin@nitt.edu	Telephone no	9442425880
Course Type	Laboratory Course	Office	Lyceum 118
2. Course Overview			
<p>This course introduces basic understanding of UNIX OS, UNIX commands and File system and to familiarize students with the Linux environment. To make student learn fundamentals of shell scripting and shell programming. Emphases are on making student familiar with UNIX environment and issues related to it.</p>			
3.Syllabus(Approved by Bos)			
<p>Exercises for learning basic features of UNIX and to solve problems using shell programming</p> <ol style="list-style-type: none">1. Basic Unix Commands and utilities2. Implementation of System calls for Process Creation,File System, Directory Management3. Write C programs to simulate UNIX commands like ls, grep, mv,cp etc.4. CPU Scheduling (FCFS and SJF)5. CPU Scheduling(Priority and Round Robin)6. Developing Application using Inter Process communication (using shared memory, pipes or message queues)7. Implement the Producer – Consumer problem using semaphores (using UNIX system calls).8. Implement some memory management schemes – I9. Implement some memory management schemes – II10. Implement any file allocation technique (Linked, Indexed or Contiguous)			

4.Course Objectives

- Basic understanding of UNIX OS, UNIX commands
- To make student learn fundamentals of shell scripting and shell programming
- To learn about system calls ,File system and directory management
- To implement various operating system problems

5.Course Outcomes

Course Outcomes:

Students will be able to:

1. Work on the concepts, design, and structure of the UNIX operating system.
2. Use basic UNIX Utilities
3. Work on UNIX shell programming and implement various operating system problems

6.Course

Outcome (CO)**Aligned Program Outcome (PO)**

Outcome (CO)	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO
	-1	-2	-3	-4	-5	-6	-7	-8	-9	10	11	12
CO1	H		H		H							
CO2	H	M	H		H							
CO3	H	M	H	-	H							

7.Course Content

Week	Topics Covered
1	Basic Unix Commands and utilities
2	Implementation of System calls for Process Creation,File System, Directory Management
3	Write C programs to simulate UNIX commands like ls, grep, mv,cp etc.
4	CPU Scheduling (FCFS and SJF)
5	CPU Scheduling(Priority and Round Robin)
6	Developing Application using Inter Process communication (using shared memory, pipes or message queues)
7	Implement the Producer – Consumer problem using semaphores (using UNIX system calls).
8	Implement some memory management schemes – I
9	Implement some memory management schemes – II
10	Implement any file allocation technique (Linked, Indexed or Contiguous)

8.Course Assessment Methods - Lab

Sl. No.	Mode of Assessment	Week/ Date	Duration	Weightage (%)
1.	Evaluation 1	3	3 rd week	15
2.	Evaluation 2	6	6 th week	15
3.	Evaluation 3	8	8 th week	10
4.	Evaluation 4	10	10 th week	10

5.	Model Examination	11	11 th week	25
6	End Semester Lab			25

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

REFERENCES:

1. Brian W. Kernighan and Rob Pike, "The UNIX Programming Environment" Prentice Hall India (Latest Edition)
2. Sumitabha Das, "UNIX: Concepts and Applications" Tata McGraw Hill (Latest Edition)
3. Yashwant Kanetkar, "UNIX Shell Programming" BPB Publications (First Edition)
4. Abraham Silberschatz, Peter B. Galvin and Greg Gagne, "Operating System Concepts ",8th edition, John Wiley & Sons Inc., 2013.

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

1. **Attendance 100% is a must. However relaxation up to 25% will be given for leave on emergency requirements (medical, death, etc.,) and representing institute events**
2. **Students are expected to come out with their original code for problems during the laboratory exercises and test/ examination**

11. Additional Course Information

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

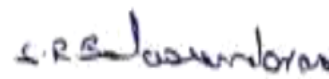
For Senate's Consideration



(Dr.K.Adlin Suji)
Course Faculty Class



(Dr.U.Srinivasulu Reddy)
Committee Chairperson



(Dr.S.R.Balasundaram)
Head of the Department