Department of Computer Applications
National Institute of Technology Tiruchirappalli

1. Course Outline

Course Title	OS and Networks Lab
Course Code	CA705

Department	Computer Applications	**No. of Credits**	2
Pre-requisites Course Code	CA714 Operating Systems	**Faculty Name**	Dr.S.Sangeetha
E-mail	sangeetha@nitt.edu	**Telephone No.**	0431-2503743
Course Type	Laboratory Course		

2. Course Overview

The Operating systems and Networks lab helps the students to learn the functioning of operating systems and communication among systems in networking environment. Basic commands of UNIX and shell programming provide them an overview of functionalities of shell. The best way to understand why systems are built, the way they are built is to build such systems. Students will implement few kernel components of OS and Communication mechanism with peer systems in the lab in a LAN environment.

3. Course Objectives

- To learn and work with UNIX commands and shell scripts
- To learn the functionality of systems calls
- To learn the functionality of operating system kernel
- To learn the working principles of networking

4. Course Outcomes (CO)

- Work with various shell commands in operating systems.
- Implement kernel functions of OS
- Implement various networking principles.

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
Work with various commands in operating systems.	H		H		H							
Implement kernel functions of OS	H	L	H		H							
Implement various networking principles.	H	M	H		H							

6. Course Content

Week	Topics covered
1.	Basic UNIX Shell commands
	Executing C Programs in UNIX Operating system
2.	Working with Control structures in UNIX Shell scripts
	Writing UNIX shell scripts
3.	Implementing commands in C using system Calls
4.	Simulating Process Scheduling
5.	Simulating Inter process communication using Shared memory.
	Synchronization among processes in IPC using multithreading
6.	Simulation of Logical to physical Address translation in various Memory management techniques
7.	Error detection and Error correction techniques in data transfer
8.	Flow control in data transfer
9.	Communication among processes using TCP/IP
10.	Security in data transfer

7. Course Assessment Methods – Practical

Sl. No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1.	Evaluation-1	3rd week	lab duration	15
2.	Evaluation-2	6th week	lab duration	15
3.	Evaluation-3	8th week	lab duration	10
4.	Evaluation-3	10th week	lab duration	10
5.	Model Examination	11th week	lab duration	25
6	End Semester Lab	-	lab duration	25
			Total	100

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

Reference Books

1. Silberschatz, Galvin and Gagne, "Operating System Concepts", 9th Edition, John Wiley & Sons Inc,2013
2. Behrouz A. Forouzan, " Data Communications and Networking ", 4 th Edition ,McGraw-Hill, 2004

9. Course Exit Survey (mention the ways by which the feedback about the course is assessed and indicate the attainment level)

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

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

- **Plagiarism**
  The students are expected to come out with their original code for problems given during the laboratory exercises, and tests/examinations.
- **Attendance**
  100% is a must. However, relaxation upto 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.

For Senate's Consideration

Course Faculty   Class Committee Chairperson   HoD