



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 Dr.M.P.Anuradha
E-mail	sangeetha@nitt.edu mpanuradha@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
1.	Basic UNIX Shell commands
	Executing C Programs in UNIX Operating system
2.	Working with Control structures in UNIX Shell scripts
	Creating UNIX shell scripts
3.	Implementing shell commands in C using UNIX 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	3 rd week	lab duration	15
2.	Evaluation-2	6 th week	lab duration	15
3.	Evaluation-3	8 th week	lab duration	10
4.	Evaluation-3	10 th week	lab duration	10
5.	Model Examination	11 th week	lab duration	25
6	End Semester Lab	-	lab duration	25
Total				100

The assessment is done for a total of 100 marks. The continuous evaluation of lab exercises carries 50 marks (5 marks for each problem), Model examination will be conducted and to be evaluated to 25 marks and the semester examination will be given a weightage of 25 marks.

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", 4th 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.

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

The students are expected to come out with their original code for problems given during the laboratory exercises, and tests/examinations. If found to copy from internet/other students, zero marks will be assigned.

- **Attendance**

100% is a must. However, relaxation upto 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.

12. Additional Course Information

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

For Senate's Consideration

M.P.A. Anuradha
(Signature)

Dr.S.Sangeetha
Dr.M.P.Anuradha
Course Faculty

(Signature)
(Dr.S.Suresh)

(Signature)
Class Committee Chairperson

(Signature) 19/12/2016
(Dr.A.Vadivel)

HoD