

DEPARTMENT OF COMPUTER APPLICATIONS
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	Master of Computer Applications		
Course Title	Operating System Lab		
Course Code	CA704	No. of Credits	2
Course Code of Pre-requisite subject(s)	CA714		
Session	January 2021	Section (if, applicable)	B
Name of Faculty	Dr. Ghanshyam S. Bopche	Department	Computer Applications
Email	bopche@nitt.edu	Telephone No.	0431-2503735
Name of PAC Chairman	Dr. S. Sangeetha		
E-mail	sangeetha@nitt.edu	Telephone No.	0431-2503743
Course Type	Core course		
Syllabus (approved in BoS)			
Exercises to learn various commands, system calls in operating system and understand the working principles of OS algorithms.			
COURSE OBJECTIVE(S)			
To learn operating system commands, system calls and to implement the working principles of OS Algorithms.			
COURSE OUTCOMES (CO)			
Course Outcomes	Aligned Programme Outcomes (PO)		
Students will be able to:			
1. Work with various commands in operating systems.	PO I, II, III, IV, V		
2. Work with system calls.	PO I, II, III, IV, V		

COURSE PLAN – PART II**COURSE OVERVIEW**

This course covers the lab sessions on the topics – OS commands, use of system calls, shell scripting, implementation of the underlying principles of OS Algorithms (using C). The hands-on experience gained from this Lab will help students managing different OS environments and in solving real-time problems.

COURSE TEACHING AND LEARNING ACTIVITIES

S. No.	Week/ Contact Hours	Topic	Mode of Delivery
1	Week 1 (3 Hrs)	Basic OS Commands (UNIX Commands).	Demo (MS Team), Ubuntu
2	Week 2 (3 Hrs)	Basics of Shell Scripting, Shell Variables. Shell Scripting to implement common UNIX commands.	Demo (MS Team), Ubuntu
3	Week 3 (3 Hrs)	Shell Scripting to decide whether the given number is - prime or not, palindrome or not, Armstrong number or not, etc.	Demo (MS Team), Ubuntu
4	Week 4 (3 Hrs)	Shell scripting to manipulate strings, files and directories.	Demo (MS Team), Ubuntu
5	Week 5 (3 Hrs)	Implementation of unix grep command using C Language.	Demo (MS Team), C
6	Week 6 (3 Hrs)	Implementation of IPC through Pipes.	Demo (MS Team), C
7	Week 7 (3 Hrs)	Implementation of CPU Scheduling Algorithms – First Come First Serve (FCFS) and Shortest Job First (SJF).	Demo (MS Team), C
8	Week 8 (3 Hrs)	Implementation of CPU Scheduling Algorithms- Priority-based Scheduling, Round Robin Scheduling	Demo (MS Team), C
9	Week 9 (3 Hrs)	Implementation of the Producer & consumer Problem (using Semaphore).	Demo (MS Team), C
10	Week 10 (3 Hrs)	Simulation of Bankers algorithm for the purpose of deadlock avoidance.	Demo (MS Team), C
11	Week 11 (3 Hrs)	Implementation of Page Replacement Algorithms – FIFO, Optimal.	Demo (MS Team), C
12	Week 12 (3 Hrs)	Implementation of Page Replacement Algorithms – LRU, LFU, and Second Chance.	Demo (MS Team), C

COURSE ASSESSMENT METHODS				
S. No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Lab Activities	Periodic	--	30
2	Evaluation-I	6 th Week	120 Minutes	20
3	Evaluation-II	10 th week	120 Minutes	20
CPA	Compensation Assessment*	As per the academic schedule	120 Minutes	20
4	Final Assessment	As per the academic schedule	120 Minutes	30
Total Marks				100

*mandatory; refer to guidelines on Page 5

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

The students through the class representative may give their feedback at any time to the course coordinator which will be duly addressed.

The students may give their feedback during class committee meetings.

COURSE POLICY (including compensation assessment to be specified)

MODE OF CORRESPONDENCE

By Email: bopche@nitt.edu

COMPENSATION ASSESSMENT POLICY

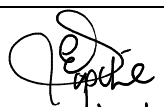


The compensation assessment will be conducted for absentees in assessments (other than final assessment) only after the submission of medical or On-duty certificates signed by the competent authority.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to

the Academic office.	
The above policy against academic dishonesty shall be applicable for all the programmes.	
ADDITIONAL INFORMATION	
NIL	
FOR APPROVAL	
<p>  Course Faculty <u>16/04/2021</u> CC-Chairperson <u></u> HOD <u></u> </p>	