NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF <u>COMPUTER APPLICATIONS</u>

COURSE PLAN – PART I			
Name of the programme and specialization	**Master of Computer Applications**		
Course Title	**Operating Systems Lab**		
Course Code	**CA704**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**CA714**		
Session	~~July~~ **/ January 2021**	**Section (if, applicable)**	**A**
Name of Faculty	**Dr. Selvakumar K**	**Department**	**Computer Applications**
Email	**kselvakumar@nitt.edu**	**Telephone No.**	**0431-2503733**
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 implement various operating systems based functionalities and to design the various OS concept based programs using UNIX-C.

COURSE OUTCOMES (CO)

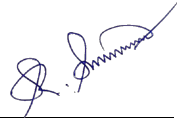| Course Outcomes	Aligned Programme Outcomes (PO)
Students will be able to: 1. Work with various commands in operating systems	**PO I, II, III**
2. Work with system calls	**PO I, II, III, IV, V**

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	COURSE PLAN – PART II		
COURSE OVERVIEW			
This course covers the implementation of Operating Systems concepts including system commands, System calls, and various operating system based functionalities using UNIX-C and other shell script programming skills, etc.			
COURSE TEACHING AND LEARNING ACTIVITIES			
S. No.	**Week/ Contact Hours**	**Topic**	**Mode of Delivery**
1	Week 1	Study of basic commands in Unix	Demo (MS Teams), Linux-Terminal
2	Week 2	Shell Programming (decision making, looping, multi-level branching)	Demo (MS Teams), Linux-Terminal
3	Week 3	C Program to display CPU type, model, kernel version and Memory details	Demo (MS Teams), Linux-Terminal
4	Week 4	Write a C program to create child process, Zombie process and orphan process	Demo (MS Teams), Linux-Terminal
5	Week 5	Message passing using shared memory	Demo (MS Teams), Linux-Terminal
6	Week 6	Challenging Task-I (Lab Evaluation-I)	Demo (MS Teams), Linux-Terminal
7	Week 7	CPU Scheduling algorithm FCFS, SJF, Priority and Round Robin	Demo (MS Teams), Linux-Terminal
8	Week 8	Write a C program to create threads and Provide communication between them kernel	Demo (MS Teams), Linux-Terminal
9	Week 9	Process Synchronization Dining Philosopher and readers writers problem	Demo (MS Teams), Linux-Terminal
10	Week 10	Bankers algorithm for deadlock avoidance	Demo (MS Teams), Linux-Terminal
11	Week 11	Challenging Task-II (Lab Evaluation-II)	Demo (MS Teams), Linux-Terminal
12	Week 12	Dynamic memory allocation problem First fit, best fit and worst fit Page replacement algorithms FIFO, LRU and optimal	Demo (MS Teams), Linux-Terminal

COURSE ASSESSMENT METHODS

S. No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Lab Activities	Periodic	--	30
2	Evaluation-I	6th Week	120 Minutes	20
3	Evaluation-II	11th 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: **kselvakumar@nitt.edu**

COMPENSATION ASSESSMENT POLICY
One 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 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
Course Faculty_____ **CC-Chairperson**_____**HOD** _____

<u>Guidelines</u>

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.

d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	**2017**	**2016**	**2015**	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.