



NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech		
Course Title	Operating System		
Course Code	CSMI13	No. of Credits	3
Course Code of Pre-requisite subject(s)	CSMI11	CSMI12	
Session	January 2019	Section (if, applicable)	-
Name of Faculty	Dr. Mohan R Mr. Aravindh A	Department	CSE
Email	rmohan@nitt.edu aravindha@nitt.edu	Telephone No.	0431250-3210
Name of Course Coordinator(s) (if, applicable)			
E-mail		Telephone No.	
Course Type	Elective course (Minor)		
Syllabus (approved in Senate)			
Unit – I Basic OS Concepts- User's view of the OS - Architectural support – System calls- Thread and process scheduling - Pre-emptive and non-pre-emptive - FCFS, SJF, Round Robin, Multilevel Queue.			
Unit – II Inter process synchronization, Mutual exclusion algorithms, Hardware support, Semaphores, Concurrent programming using semaphores.			
Unit – III Inter process communication, Deadlocks: Characterization, Prevention, Avoidance, detection and recovery, combined approach to deadlock handling.			
Unit – IV Contiguous allocation, Static and dynamic partitioned memory allocation, Segmentation, Non-contiguous allocation, Paging, Hardware support, Virtual Memory, Demand Paging.			
Unit – V Need for files, File abstraction, File naming, File system organization, File system optimization, Reliability, Security and protection, I/O management and disk scheduling, Recent trends and developments.			



COURSE OBJECTIVES			
<ul style="list-style-type: none"> ➤ To provide knowledge about the services rendered by operating systems ➤ To provide a detailed discussion of the various memory management techniques ➤ To discuss the various file system design and implementation issues ➤ To discuss how the protection domains help to achieve security in a system 			
COURSE OUTCOMES (CO)			
<ul style="list-style-type: none"> ➤ Ability to comprehend the techniques used to implement the process manager ➤ Ability to comprehend virtual memory abstractions in operating systems ➤ Ability to design and develop file system interfaces, etc 			
Course Outcome (CO)		Aligned programme Outcome	
Ability to comprehend the techniques used to implement the process manager		1, 3, 4, 7, 8	
Ability to comprehend virtual memory abstractions in operating systems		2, 3, 4, 6	
Ability to design and develop file system interfaces, etc		2, 3, 4, 5, 6, 8	
COURSE PLAN – PART II			
COURSE OVERVIEW			
This course mainly describes about the importance of operating system and how is it implemented and used. The course introduces the basic functionalities provided by modern operating system.			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Week	Topic	Mode of Delivery
1.	I Week	Basic OS Concepts - User's view of the OS	Chalk and Talk
2.	II Week	Architectural support, System calls - Thread and process scheduling	Chalk and Talk
3.	III Week	The Unified Process. Software Requirements, Functional & non-functional	Chalk and Talk
4.	IV Week	Pre-emptive and non-pre-emptive-FCFS, SJF, Round Robin, Multilevel Queue	Chalk and Talk
5.	V Week	Inter process synchronization, Mutual exclusion algorithms	Chalk and Talk



6.	VI Week	Interprocess communication	Chalk and Talk
7.	VII Week	Deadlocks: Characterization, Prevention, Avoidance, detection and recovery	Chalk and Talk
8.	VIII Week	Combined approach to deadlock handling, Contiguous allocation, Static and dynamic partitioned memory allocation	Chalk and Talk
9.	IX Week	Segmentation, Non-contiguous allocation, Paging	Chalk and Talk
10.	X Week	Hardware support, Virtual Memory, Demand Paging	Chalk and Talk
11.	XI Week	Need for files, File abstraction, File naming	Chalk and Talk
12.	XII Week	File system organization, File system optimization, Reliability	Chalk and Talk
13.	XIII Week	Security and protection, I/O management and disk scheduling, Recent trends and developments	Chalk and Talk

Text Book

1. Silberschatz, Galvin, Gagne, "Operating System Concepts", John Wiley and Sons, 9 th edition, 2013

References Books

1. William Stallings, "Operating Systems –Internals and Design Principles", 8/E, Pearson Publications, 2014
2. Andrew S. Tanenbaum, "Modern Operating Systems", 4/E, Pearson Publications, 2014

COURSE ASSESSMENT METHODS-THEORY (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Cycle Test-1	3 rd week of Feb	1 hour	20%
2.	Assignment-1	4 th week of Feb		5%
2.	Cycle Test-2	1 st week of April	1 hour	20%
3.	Assignment-2	1 st week of March	-	5%
CPA	Compensation Assessment	4 th week of April	1 hour	20%
4.	Final Assessment	2 nd week of May	3 hours	50%
TOTAL				100%



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

1. Students' feedback through class committee meetings.
2. Feedback questionnaire from students – from MIS at the end of the semester.

COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)

Mode of Correspondence through Phone.

COMPENSATION ASSESSMENT POLICY

In case of emergency, the student should submit compensatory assignments on submission of appropriate documents as proof. Compensatory assessments would be framed according to the time frame available and the assessment task missed by the students.

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 programmers.

ADDITIONAL INFORMATION

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

FOR APPROVAL

Course Faculty

Rmohm
Aswathy

CC-Chairperson

ch25

HOD

J. Jay
25/11/19