



**Department of Computer Science and Engineering
National Institute of Technology, Tiruchirappalli**

COURSE OUTLINE			
Course Title	OPERATING SYSTEMS		
Course Code	CS 202	No. of Credits	3
Department	CSE	Faculty	Dr. S. Mary Saira Bhanu
Pre-requisites Course Code	nil		
Course Coordinator(s) (if, applicable)	NA		
Other Course Teacher(s)/Tutor(s) E-mail	msb@nitt.edu	Telephone No.	9442970006
Course Type	Core course		

COURSE OVERVIEW

This course enables the students to know the importance of Operating System (OS) and understand how OS services are implemented and used. The course focuses on the basic conceptual issues in the design of OS and introduces the basic facilities provided in modern operating systems. Also the models of OS from the Uniprocessor to Multiprocessor perspectives by considering the purpose, structure and functions of operating systems are dealt in this course.

- COURSE OBJECTIVES**
1. To provide knowledge about the services rendered by operating systems
 2. To provide a detailed discussion of the various memory management techniques
 3. To discuss the various file-system design and implementation issues
 4. To discuss how the protection domains help to achieve security in a system

COURSE OUTCOMES								
COs	Aligned Programme Outcome (PO)							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
1. Ability to comprehend the techniques used to implement the process manager	S	S	S	S	S	M	S	
2. Ability to comprehend virtual memory abstractions in operating systems	S	S	S	S	S	M	S	
3. Ability to design and develop file system interfaces etc.	S	S	S	S	S	M	S	

S- 75% M- 60%

COURSE TEACHING AND LEARNING ACTIVITIES			
Sl.No.	Week	Topic	Mode of Delivery
1.	1	Operating Systems, Definition, Structures, OS operations, Abstract view of OS	Chalk and Board
2.	2	System Structures, System Calls, virtual Machines	Chalk and Board PPT
3.	3	Process Concepts- Threads, multithreading	Chalk and Board
4.	4	Process Scheduling, Process operations, Interprocess communication	Chalk and Board PPT
5..	5	Coordination and synchronization, Semaphores, Monitors	Chalk and Board, PPT
6.	6	Deadlocks, Deadlock characteristics, Methods for handling deadlocks	Chalk and Board, PPT
7.	7	Memory management, Contiguous and Non Contiguous allocation - Memory management – Partition – Static and dynamic, Segmentation- Paging memory Management	Chalk and Board PPT
8.	8	Virtual memory management, Allocation of frames, Page Replacement	Chalk and Board
9.	9	File System Basics- File system interfaces – File System implementation	Chalk and Board, PPT

10.	10	Mass Storage Management, Disk Scheduling, RAID, Swap Space management	Chalk and Board, PPT
11.	11	I/O Management – I/O interfaces – Streams,	Chalk and Board
12.	12	Protection and Security – Access Control mechanisms –Program Threats – Use of Cryptography	Chalk and Board PPT
13.	13	Distributed systems – Introduction, Distributed Operating systems – Design issues	Chalk and Board PPT
14.	14	Distributed Synchronization – Distributed File System	Chalk and Board PPT

COURSE ASSESSMENT METHODS

Sl.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Assessment -1 (Written Test)	14.2.2017	One hour	20
2.	Assessment – 2 (Written Test)	21.3.2017	One hour	20
3.	Assessment-3 (1. Assignment 2. Submission of write up on latest research topic in OS)	1. February Fourth week 2. April Second week		10
4.	Assessment 4 (End Semester Examination)	April Fourth Week	Three hours	50

Total = 100

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

Text Book

Silberschatz, Galvin, Gagne, "Operating System Concepts", John Wiley and Sons, 9th 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 EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

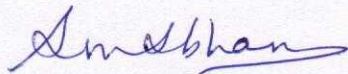
Student Feedback Form collected twice (March First Week and April First Week)

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)


Attendance: Students having 75% - 100% attendance are eligible for writing the End semester examination. Students having attendance between 65 % and 75% with valid reasons (Medical reasons, on duty) can write the end semester exam after attending extra classes. Students having less than 65 % attendance have to redo the course. Students should not absent for assessments. If the reason for absence is genuine, the student can appear for reassessment. The medical certificate/on duty certificate should be submitted within one week after rejoining.

ADDITIONAL COURSE INFORMATION

FOR SENATE'S CONSIDERATION - ----


(S. MARY SAIRA BHANU)
Course Faculty


CC-Chairperson
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HOD 3/1/2017