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

1. Course Outline			
Course Title	**OPERATING SYSTEMS**		
Course Code	CSPC26		
Programme, Department & Section	B.Tech. – CSE B Section	**No. of Credits**	3
Pre-requisites Course Code	CSPC24	**Faculty Name**	Dr. M.Sridevi
E-mail	msridevi@nitt.edu	**Telephone No.**	0431 - 2503216
Course Type	PC		
Session in Academic Year	January – May 2017 Session (Even Semester)		

2.Course Overview

- This course mainly describes about the Operating System aspects.

3. Course Objectives

- 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

4. Course Outcomes (CO)

- 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.

5. Course Outcomes (CO)	Aligned Programme Outcome (PO)							
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
Ability to comprehend the techniques used to implement the process manager	S	M	S	S	S	M	B	M
Ability to comprehend virtual memory abstractions in operating systems	S	M	M	S	S	M	B	M
Ability to design and develop file system interfaces, etc.	S	S	S	S	S	S	B	M

S = 0.6 M = 0.4 B = 0.0

6. Course Teaching and Learning Activities

SL.No	Title	Type		Mode of delivery			
		L	T	C&T	PPT	VL/VC	DEMO
	UNIT I						
1.	Introduction to Operating systems - Definition	√		√			
2.	Types of Operating Systems and Functions	√		√			
3.	Abstract view of OS, System Structures	√		√			
4.	System Calls	√		√	√		
5.	Virtual Machines	√		√			
6.	Process Concepts	√		√	√		
7.	Threads and Multi-threading	√		√	√		√
8.	Assignments						√
	UNIT II						
9.	Process Scheduling	√		√			
10.	Process Scheduling		√	√			
11.	Process Co-ordination	√		√			
12.	Synchronization	√		√			
13.	Classic problems of Synchronization		√	√			
14.	Semaphores	√		√			
15.	Monitors Hardware Synchronization	√		√			
16.	Deadlocks	√		√			
17.	Methods for Handling Deadlocks	√		√			
18.	Assignments						√
	UNIT III						
19.	Memory Management Strategies	√		√			
20.	Contiguous allocation	√		√			
21.	Non-Contiguous allocation	√		√			
22.	Virtual memory Management	√		√			
23.	Demand Paging	√		√			
24.	Page Replacement Policies	√	√	√			
25.	Assignments						√

SL.No	Title	Type		Mode of delivery			
		L	T	C&T	PPT	VL/VC	DEMO
	UNIT IV						
26.	File System – Basic concepts	√		√			
27.	File System design and Implementation	√		√			
28.	File System design and Implementation	√		√			
29.	Case Study: Linux File Systems	√					
30.	Mass Storage Structure	√			√		
31.	Disk Scheduling	√	√	√			
32.	Disk Management	√		√			
33.	I/O Systems	√		√			
34.	System Protection and Security	√		√	√		
35.	Assignments						√
	UNIT V						
36.	Distributed Systems	√		√			
37.	Distributed operating systems	√		√			
38.	Distributed file systems	√		√	√		
39.	Distributed Synchronization	√		√	√		
40.	Assignments						√

7. Course Assessment Methods				
Sl. No.	**Mode of Assessment**	**Week / Date**	**Duration**	**Marks**
1	Cycle Test	7th week (14.02.16)	60 minutes	15
2	Quiz	12th week (21.03.16)	30 minutes	15
3	Assignments	Every Unit	-	10
4	Programming Assignments	Every Unit	-	10
5	End Semester Exam	As Per Academic Schedule	3 hours	50
			Total	100

8. Essential Readings (Textbooks, Reference books, Websites, Journals, etc.)

Text Books:

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

References:

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.

9. Course Exit Survey

- Feedbacks are collected before every Cycle Test and last working day in the feedback forms*.
- Suggestions from the students are incorporated for making the course more understanding and interesting.
- Students, through their Class Representatives, may give their feedback at any time to the course faculty which will be duly addresses.
- The students may also give their feedback during Class Committee Meeting.

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

Attendance: Minimum 75% is mandatory to write the end semester examination. Students having attendance 65% to 74% are eligible for the end semester exam only after attending the extra classes and submitting assignments. Students have to redo the course, if they have less than 65% of attendance.

Medical Certificate/ On Duty Certificate should be submitted immediately after rejoining.

For Senate's Consideration

M-Lodi
(M-SRIDEVI)
Course Faculty

S. Selvakumar
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Class Committee Chairperson

3/1/2017
HOD / CSE