

## NIRMA UNIVERSITY

<b>Institute:</b>	Institute of Technology
<b>Name of Programme:</b>	Integrated B.Tech.(CSE)-MBA
<b>Course Code:</b>	CSI0601
<b>Course Title:</b>	Operating Systems
<b>Course Type:</b>	Core
<b>Year of Introduction:</b>	2021-22

### Credit Scheme

L	T	Practical Component				C
		LPW	PW	W	S	
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### Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. illustrate basic components and services of operating systems
2. summarize the mechanism of operating systems to manage processes and memory
3. analyse the mechanism of operating systems to handle I/O devices and file management
4. demonstrate competence in recognizing and using operating system features

### Syllabus:

**Total Teaching hours: 30**

Unit	Syllabus	Teaching hours
Unit-I	<b>Introduction to Operating System:</b> Operating system services, evolution of operating systems, types of operating system	03
Unit- II	<b>Process Scheduling:</b> Process states, process description, process control, process management, scheduling algorithms, performance evaluation of algorithm	08
Unit- III	<b>Threads:</b> Threads, symmetric multiprocessing, micro kernels. <b>Concurrency:</b> Mutual exclusion and synchronization, deadlock, and starvation	07
Unit- IV	<b>Memory Management and Virtual Memory:</b> Memory management requirements, partitioning, paging, segmentation, virtual memory	08
Unit- V	<b>I/O Management and Files:</b> I/O devices, organization of I/O functions, OS design issues, I/O buffering, disk scheduling, disk cache, file management	04

Self-Study: The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents

Suggested Readings/  
References:

1. William Stallings, Operating Systems, PHI.
2. Silberschiltz, Galvin and Greg Gange, Operating System, Willey India.
3. A.S.Tannenbaum, Modern Operating Systems, TMH Publications.
4. Peterson, Operating System Concepts, Addition-Wesley Longman Publishing Co
5. Milan Milenkovic, Operating System Design & Concepts, Mc Graw Hill

Suggested List of Experiments: -NA-

Suggested Case List: -NA-