Course Code	CSE231
Course Name	Operating System
Credits	4
Course Offered to	UG
Course Description	Operating system is the interface between the hardware and the user; it is responsible for the management and coordination of activities and the sharing of the resources of the computer. Operating system offers a number of services to application programs and users. Applications access these services through application programming interfaces (APIs) or system calls. By invoking these interfaces, the application can request a service from the operating system, pass parameters, and receive the results of the operation. The course on Operating System has two components: theory and programming. Theory component covers the underline concepts and principles of operating system whereas programming component involves the practical implementation of theoretical concepts.

Pre-requisites		
Pre-requisite (Mandatory)	**Pre-requisite (Desirable)**	**Pre-requiste (Other)**
CSE102 Data Structures & Algorithms		C Programming (students must know how to write reasonable length C programs before this course).

*Please insert more rows if required

Post Conditions*(For suggestions on verbs please refer the second sheet)			
CO1	**CO2**	**CO3**	**CO4**
Students are able understand fundamental principles and approaches behind process synchronizations, deadlock avoidance, memory management etc	Students are able to write a shell with complete clarity about process creation and process execution.	Students are able to write multi-threaded applications with synchronization primitives and ability to analyze effects of concurrency on process execution and correctness.	Students are able to analyze the impact of OS concepts, e.g. virtual memory, concurrency, on program execution and ability to fine-tune the program to run efficiently on a given OS.

Weekly Lecture Plan

Week Number	**Lecture Topic**	**COs Met**	**Assignment/Labs/Tutorial**
1	Introduction to Operating Systems		Weekly programming assignments and homeworks to implement and analyse operating systems concepts covered in the class. Assignments and Homeworks contain both theoretical and programming problems.
2,3	Processes		
4	Threads		
5	CPU Scheduling		
6,7	Synchronization		
8	Deadlocks		
9	Memory		
10, 11	Virtual Memory		
12, 13	File System		

*Please insert more rows if required

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Assessment Plan

Type of Evaluation	% Contribution in Grade
Mid-sem	20
End-sem	40
Assignment	30
Quiz and homeworks	10

*Please insert more row for other type of Evaluation

Resource Material

Type	Title
Textbook	Operating Systems: Three Easy Pieces Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau Arpaci-Dusseau Books
Textbook	Operating System Concepts, 9th Edition, Wiley by Silberschatz (Author), Galvin (Author), Gagne (Author)
Internet Resource	ostep.org