Part A: Introduction

ogram: Certificate Course	Class: **B.Sc.--IT III Semester**	**Year: 2023**	**Session:2023-24**
Course Code	**ITDSC-3T**		
Course Title	**Operating System**		
Course Type	**Discipline Specific Course (DSC)**		
Pre-requisite(if any)	As per Govt. Norms / Institutional Scheme		
Course Learning Outcomes (CLO)	After successfully completing this course, the students will be able to: • Understand the concept of operating system and the basic terminologies used in the computer. • Understand the types of operating system. • Understand the internal working of operating system. • Understand the concept of kernel and system calls. • Understand the services of operating system. • Understand the concept of paging and segmentations.		
Credit Values	**04 (03Theory + 01 Practical)**		
Total Marks	**Max. Marks: 100 = 80Theory +20 Internal Assessment**	**Min Passing Marks: 40**	

Part B: Content of the Course

Total number of Teaching-Learning – Hours-45

Unit	Topics (Course Contents)	Hours
I	**Introduction to Operating System**: Introduction to Operating System and Architecture, Components Operating Systems, types of Operating Systems, Classification: Simple Batch Systems, Multi-Programmed Batches Systems Time Sharing Systems, Parallel & Distributed Operating Systems, System Calls, Types of System Calls, application of Operating System.	11
II	**Process Management:** Process Model Process Scheduling, CPU Scheduling, Process Synchronization, Critical Section Problem, Synchronization Hardware, Semaphores, and Classical Problem of Synchronization Deadlocks: Method for Handling Deadlocks, Deadlock Prevention and Deadlock Avoidance.	11
III	**Memory Management**: Main Memory Management: Logical Versus Physical Address Space, Swapping, Contiguous Allocation, Paging, Segmentation, Virtual Memory: Demand Paging, Page Replacement, Page Replacement Algorithms, Performance of Demand Paging, Allocation of Frames, Thrashing.	11
IV	**Device and Storage Management**: Storage Management, Device Management: Techniques For Device Management, Dedicated Devices, Shared Devices, Secondary-Storage Structure: Disk Structure, Disk Scheduling. **File-System Implementation:** A Simple File System, Logical & Physical File System, File-System Interface: Access Methods, Directory Structure, Protection, Free-Space Management.	12