C. U. Shah University, Wadhwan City

Faculty of Computer Science

Name of Program: Bachelor of Computer Application (BCA)

Semester : V

W.e.f. June-2015

Teaching & Evaluation Scheme

Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester							
								Theory				Practical			Total Marks
								Sessional Exam		University Exam		Internal		Uni.	
			Th	Tu	Pr	Total		Marks	Hrs	Marks	Hrs	Pr	TW	Pr	
3	4CS05BOS1	Operating System	4	-	2	6	5	30	1.5	70	3	10	-	40	150

Objectives:

To provide basic understanding of structure and functionality of various operating systems. It begins with the fundamental of operating system and then functionality of operating system likeProcess Management, Memory Management, Deadlock Management, and File System

Pre-requisites: Programming in C and basics of Computer Communication

Course outline:

Ch. No	Chapter Name	Topics	Lect. Hours
1	Introduction	Definitions, functions and types of operating system, Operating system Services, System Calls, System programs, System structure.	6
2	Processes	Process Concepts, process state & process control block, Process Scheduling, Types of Scheduling, Scheduling Criteria, Scheduling Algorithms, Multiple-Processor Scheduling, Real-Time Scheduling, Threads, Critical Section Problem, and Semaphores.	12
3	Deadlock	Deadlock Characterizations, Method for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.	6
4	Memory Management	Logical versus physical address space, Swapping, Contiguous Allocating, Paging, Segmentation, Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement, Page Replacement Algorithms.	12
5	File System	File Attributes, File operations, File types, File & Directory Structure, File System Implementation, and Protection.	5
6	Starting With Unix and File System	Unix Architecture, Unix Features, Types Of Shell (C, Bourn, Korn), Unix File System Overview, **Types Of Files:** 1) Ordinary Files 2) Directory Files 3) Device Files **Unix File & Directory Permissions Related Commands:** ls, cat, cd, pwd, mv, cp, ln, rm, rmdir, mkdir, chgrp, find, more, less, head, tail, wc, touch	8

		Login Commands: passwd, logout, who, who am i, clear	
7	Text Editing With vi Editor	Introduction of vi editor, Switching mode in vi,Cursor movement, Entering text, cut, copy, paste in vi editor	7
		Total Lecture	56

Learning Outcomes:

Students will be able to

1. Operate different operating system like WINDOWS/UNIX/LINUX.
2. Get familiar with the knowledge of operating system.
3. Distinguish various OS.

Books Recommended:

1. Operating System Concepts By **Silberschatz, Galvin, Gagne**, John Wiley &Sons, 8th edition, 2010.
2. Modern Operating Systems By **Andrew S. Tanenbaum**, Pearson Education, 4th edition, 2014.
3. Operating System – Internals & Design Principles -By **William Stallings,** Pearson Prentice hall, 5th Edition, 2009.
4. Unix System Concepts & Applications By **Sumitabha Das**, Tata McGraw Hill, 4th edition, 2008.
5. Unix Shell Programming By **Yashwant Kanitkar,** BPB Publications, 2002.