BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI, K. K. BIRLA GOA CAMPUS, I SEMESTER 2013-2014
COURSE HANDOUT (PART II)

Date: 02/08/2013

In addition to Part I (General Handout for all courses appended to the timetable) this portion gives further specific details regarding the course.

Course No.	: CS C372 , IS C362, CS F 372 and IS F 372
Course Title	: OPERATING SYSTEMS
Instructor-in-charge	: Dr. Lucy J Gudino, lucy@bits-goa.ac.in
Instructor	: Mrs. Shubhangi K Gawali, shubhangi@bits-goa.ac.in

1. Scope and Objective of the course
   (a) To provide an understanding of the functions of operating systems.
   (b) To provide an insight into functional modules of operating systems.
   (c) To study the concepts underlying the design and implementation of operating systems.

2. Text Book:

Abraham Silberschatz, Peter Baer Galvin & Greg Gagne "Operating System Concepts", 8th edition, John Wesley & Sons, 2008.

Reference Books:
   1. William Stallings, "Operating Systems Internals and Design Principles", 6th edition, Pearson Edition, 2009.
   2. Maurice J. Bach, "The Design of the Unix Operating System", PHI, 1993.
   3. Andrew S. Tenenbaum, "Modern Operating Systems",3rd Edition, PHI, 2008.
   4. W. Richard Stevens, "Advanced Programming in the UNIX environment" 2nd edition, Addition-Wesley, 2005.
   5. Unix Shell Programming by Yeshwant Kanetkar

3. Lecture Plan

Lect #	Learning Objective	Topic	Reference
GENERAL OVERVIEW			
1		Overview	Ch1(T1)
2	To understand what is Operating system and its functions	Types of OS	Ch1(T1)
3		System Calls	Ch2(T1)
4		System Programming	Ch2(T1)
5		System Design and Implementation	Ch2(T1)
PROCESS MANAGEMENT			
6	To understand the concept of process and its various states	Process overview (State, PCB)	Ch3(T1)
7-8		Process scheduling	Ch3(T1),Ch3(R1)
9		Inter Process Communication (IPC)	Ch3(T1)
10-11		Threads	Ch4(T1),Ch4(R1)

CPU SCHEDULING			
12	To know what is scheduling and its importance	CPU scheduling overview	Ch5(T1)
13-16		Scheduling Algorithms	Ch5(T1),Ch9(R1)
CONCURRENT PROCESSES			
17	To understand the problem of Critical Section and its solution	Critical section problem	Ch6(T1),Ch5(R1)
18		Multi Process Solution	Ch6(T1),Ch5(R1)
19		Semaphores	Ch6(T1),Ch5(R1)
20-21		Critical Problems of Synchronization	Ch6(T1),Ch5(R1)
22-24	To know what is deadlock and its handling	Deadlock Handling	Ch7(T1)
MEMORY MANAGEMENT			
25	To understand various memory management schemes and their relative advantages and disadvantages	Memory management overview	Ch8(T1)
26-27		Paging	Ch8(T1)
28		Segmentation	Ch8(T1)
29		Case Study	Ch8(T1)
30		Virtual memory	Ch9(T1)
31		Demand Paging	Ch9(T1)
32		Page Replacement	Ch9(T1)
33		Thrashing	Ch9(T1)
34		Memory Mapped Files	Ch9(T1)
FILES & I/O SYSTEMS			
35	To understand the concept of files, its types, attributes and operations	File Operations	Ch10(T1)
36		Directory Structure	Ch10(T1)
37		File System Structure & Internal representation of Files	Ch11(T1), Ch4(R2)
38		Allocation Methods & Free Space Management	Ch11(T1), Ch4(R2)
39		Disk Structure & Scheduling	Ch12(T1)
40		RAID	Ch12(T1)
41-42		I/O Systems	Ch13(T1)

4.   **Evaluation Scheme**:

Components	Duration	Weightage	Remarks
Test I	60 min	20%	Closed Book
Test II	60 min	20%	Closed Book
Quiz and Tutorial		30%	Closed/open Book
Comprehensive Examination	180 min	30%	Closed Book

4.   **Chamber Consultation Hour**: To be announced in the class.

5.   **Notice**: Notice concerning this course will be displayed on moodle

6.   **Makeup Policy**:

   ➢ Permission of the Instructor-in-Charge is required to take a make-up
   ➢ Make-up applications must be given to the Instructor-in-charge personally.
   ➢ A make-up test shall be granted only in genuine cases where - in the Instructor's judgment - the student would be physically unable to appear for the test.
   ➢ In case of an unanticipated illness preventing a student from appearing for a test, the student must present a Medical Certificate from BITS medical centre.
   ➢ Requests for make-up for the comprehensive examination – under any circumstances – can only be made to In-charge, Instruction Division.
   ➢ **No makeup for tutorials and Quiz.**

                                              Instructor-In-Charge
                                CS C372 , IS C362, CS F 372 and IS F 372