

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Information Technology

Lesson plan of faculty member for the academic year 2016–17

Class: III B Tech

Branch-Section: IT-B

Semester: I

Subject: Operating Systems

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Operating Systems Overview		
1	Operating Systems objectives & functions	14 June 2016
2	Computer System Architecture, OS Structure, OS Operations	15 June 2016
3	Evolution of Operating Systems-Mainframe Systems, Personal	17 June 2016
4	Parallel, Distributed, Real - Time Systems, Special Purpose Systems	18 June 2016
5	Tutorial (G1, G3, G2) – Introduction to OS	13, 14, 18 June 2016
6	Operating Systems Services, User OS Interface	21 June 2016
7	System Calls, Types of System Calls, System programs	22 June 2016
8	Operating Systems Design and Implementation, Virtual Machines	24 June 2016
UNIT – II: Process Management & Coordination		
9	Process concepts, Threads	25 June 2016
10	Tutorial (G1, G3, G2) – System Calls	20, 21, 25 June 2016
11	Process Scheduling – Scheduling Queues, Schedulers, Context Switch	28 June 2016
12	Pre-emptive Scheduling, Dispatcher, Scheduling Criteria	29 June 2016
13	Scheduling Algorithms	01 July 2016
14	Scheduling Algorithms	02 July 2016
15	Tutorial (G1, G3, G2) – Scheduling algorithms	27, 28 June 2016, 02 July 2016
16	Multiple-Processor Scheduling, Real-Time Scheduling, Thread Scheduling	05 July 2016
17	Case studies: Linux, Windows	08 July 2016
18	Process Synchronization	09 July 2016
19	Tutorial (G1, G3, G2) – Case studies	04, 05, 09 July 2016
20	The Critical Section Problem, Peterson's solution	12 July 2016
21	Synchronization Hardware	13 July 2016
22	Semaphores	15 July 2016
23	Classic Problems of Synchronization	16 July 2016
24	Tutorial (G1, G3, G2) - Semaphores	11, 12, 16 July 2016
25	Monitors	19 July 2016
26	Synchronization examples	20 July 2016
UNIT – III: Memory Management & Virtual Memory		
27	Logical & Physical Address Space	22 July 2016
28	Swapping	23 July 2016
29	Tutorial (G1, G3, G2) – Memory management	18, 19, 23 July 2016
30	Contiguous Allocation	26 July 2016
31	Paging, structure of the page table	27 July 2016
32	Segmentation, Segmentation with Paging	29 July 2016
33	Virtual Memory, Demand Paging	30 July 2016
34	Tutorial (G1, G3, G2) - Segmentation	25, 26, 30 July 2016
35	Performance of Demand Paging	02 August 2016
36	Page replacement Algorithms	03 August 2016
37	Page replacement Algorithms	05 August 2016
38	Allocation of frames	06 August 2016
39	Tutorial (G3, G2) – Replacement Algorithms	02, 06 August 2016
40	Thrashing	16 August 2016

UNIT – IV: File System Interface, Mass Storage Structure		
41	The Concept of a File , Access methods	17 August 2016
42	Directory Structure, File System Mounting	19 August 2016
43	File sharing, Protection, File System Structure	20 August 2016
44	Tutorial (G3, G2) - Files	16, 20 August 2016
45	File System Implementation , Directory Implementation	23 August 2016
46	Allocation methods, Free Space Management	24 August 2016
47	Efficiency and performance	26 August 2016
48	Overview of Mass Storage Structure, Disk Structure, Disk Attachment	27 August 2016
49	Tutorial (G1, G3, G2) – Disk Structure	22, 23, 27 August 2016
50	Disk scheduling	30 August 2016
51	Disk Management	31 August 2016
52	Swap space Management	02 September 2016
UNIT – V: Deadlocks & Protection		
53	Principles of Deadlock , System Model	03 September 2016
54	Tutorial (G1, G3, G2) - Deadlock	29, 30, August 2016, 03 September 2016
55	Deadlock Characterization	06 September 2016
56	Methods of Handling Deadlocks	07 September 2016
57	Deadlock Prevention	09 September 2016
58	Deadlock Avoidance	10 September 2016
59	Tutorial (G1, G2) – System model	06, 10 September 2016
60	Deadlock Detection	13 September 2016
61	Recovery from Deadlock	14 September 2016
62	System Protection	16 September 2016
63	Principles of Protection,	17 September 2016
64	Tutorial (G3, G2) – System protection	13, 17 September 2016
65	Domain of Protection	20 September 2016
66	Access Matrix	21 September 2016
67	Implementation of Access Matrix Access Control	23 September 2016
68	Revocation of Access Rights	24 September 2016
69	Tutorial (G1, G3, G2) – Access Matrix	19, 20, 24 September 2016
70	Capability - Based Systems	27 September 2016
71	Language - Based Protection	28 September 2016
72	Goals of Protection	01 October 2016
73	Tutorial (G1, G3, G2) – Access Control	26, 27 September 2016, 01 October 2016
74	Unit - 1 Revision	4 October 2016
75	Unit - 2 Revision	28 October 2016
76	Unit - 3 Revision	29 October 2016
77	Tutorial (G2)	29 October 2016
78	Unit - 4 Revision	01 November 2016
79	Unit - 5 Revision	02 November 2016

Text books:

1. Operating System Concepts - Abraham Silberchatz, Peter B. Galvin, Greg Gagne 7th Edition, John Wiley
2. Operating Systems – Internal and Design Principles Stallings, Fifth Edition–2005, Pearson education/PHI

Name and signature of the faculty: V. Swarna Kamalam ----

Name and signature of Head of the Department: G. Srinivas Rao ----