**Government Polytechnic, Morni**

**Lesson Plan (3rd Semester)**

Name of the Faculty : Narender Sharma

Discipline : Comp. Engg.

Semester :III

Subject :Operating System

Lesson Plan Duration :15 weeks

Work Load (Lecture/Practical) per week (In hours) : lectures-3 Practical-3

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| **Week** | **Theory** | **Practical** |
| **Lecture****Day** | **Topic(including assignment/Test)** | **Practical****Day** | **Topic** |
| 1st | 1st | **UNIT-1--OverviewofOperatingSystems**Definition of Operating SystemsTypes of Operating SystemsOperating System Services, User operating system interface,System Calls, Types of System Calls, | Ist | Demonstration of all the controls provided in windows control panel. |
| 2nd |
| 3rd |
| 2nd | 4th | System Programs, Operating SystemStructureVirtual Machine, Benefits of VirtualMachine**UNIT-2 Process Management (Principles and Brief Concept)**---Process conceptProcess State, Process Control Block | 2nd | Exercise on Basics of windows |
| 5th |
| 6th |
| 3rd | 7th | Scheduling Queues, Scheduler, JobScheduler, Process Scheduler,Context Switch, Operations on Processes, Interprocess CommunicationShared Memory Systems, MessagePassing Systems,CPU Scheduler, Scheduling Criteria | 3rd | Installation of Linux Operating System |
| 8th |
| 9th |
| 4th | 10th | Scheduling Algorithms, Preemptive andNon Preemptive,First come first serve (FCFS),Shortest Job first(SJF), Round Robin (RR)Process Synchronization | 4th | Revision and File checking |
| 11th |
| 12th |
| 5th | 13th | RevisionAssignment-1 Class testSessional Test | 5th | Usage of directory management commands of Linux: ls, cd, pwd, mkdir, rmdir |
| 14th |
| 15th |

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| 6th | 16th | UNIT-3 Deadlocks (Principles and BriefConcept)---Deadlock, Conditions for deadlockMethods for handling deadlocksDeadlock Prevention, DeadlockAvoidanceDeadlock detection, Recovery from deadlock | 6th | Usage of File Management commands of Linux: cat, chmod, cp, mv, rm, pg, more, find |
| 17th |
| 18th |
| 7th | 19th | **UNIT-IV Memory Management Function****(Principles and Brief Concept)**Definition–Logical and Physical addressSpaceSwapping, Memory allocationContiguous Memory allocation, Fixedand variable partition | 7th | Revision and File checking |
| 20th |
| 21st |
| 8th | 22nd | Internal and External fragmentation andCompactionPaging – Principle of operationPage allocationHardware support for paging, | 8th | Use the general purpose commands of Linux: wc, od, lp, cal, date, who, whoami |
| 23rd |
| 24th |
| 9th | 25th | Protection and sharing | 9th | Using the simple filters: pr, head, tail, cut, paste, nl, sort |
| 26th | Disadvantages of paging |
| 27th | Segmentation |
| Virtual Memory |
| 10th | 28th | RevisionRevisionClass testSessional Test | 10th | Revision and File checking |
| 29th |
| 30th |
| 11th | 31st | **UNIT-V-I/O Management Functions****(Principles and Brief Concept)**Dedicated Devices, Shared DevicesI/O Devices, Storage DevicesBuffering, Spooling. | 11th | Communication Commands: news, write, talk, mseg, mail, wall |
| 32nd |
| 33rd |
| 12th | 34th | **UNIT-VI-File Management (Principles****and Brief Concept}**Types of File System; Simple file systemBasic file system, Logical file systemPhysical file system, Various Methods of Allocating Disk Space | 12th | Writeashellprogramthatfinds thefactorialofanumber. |
| 35th |
| 36th |
| 13th | 37th | **UNIT-VII-Linux Operating System**History of Linux and Unix, LinuxOverview | 13th | Revision and File checking |
| 38th |

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|  | 39th | Structure of Linux, Linux releasesOpen Linux, Linux System Requirements |  |  |
| 14th | 40th | Linux Commands and Filters: mkdircd, rmdir, pwd, ls, who, whoami, datecat, chmod, cp, mv, rm,pg, more, pr, tailhead, cut, paste, nl, grep,wc, sort | 14th | Write a shell program that finds whether a given number is primeor not. |
| 41st |
| 42nd |
| 15th | 43rd | kill, write, talk, mseg, wall, merge, mail, newsShell: concepts of command optionsinput, output, redirection, pipesredirecting and piping with standarderrors, Shell scripts, vi editing commands | 15th | Revision and File checking |
| 44th |
| 45th |