**Government Polytechnic, Hisar**

**Lesson Plan (odd Semester)**

Name of the Faculty : Raj Bala

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Theory** | | **Practical** | |
| **Lecture**  **Day** | **Topic(including assignment/Test)** | **Practical**  **Day** | **Topic** |
| 1st | 1st | **UNIT-1--OverviewofOperatingSystems**  Definition of Operating Systems  Types of Operating Systems  Operating 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 System  Structure  Virtual Machine, Benefits of Virtual  Machine  **UNIT-2 Process Management (Principles and Brief Concept)**---Process concept  Process State, Process Control Block | 2nd | Exercise on Basics of windows |
| 5th |
| 6th |
| 3rd | 7th | Scheduling Queues, Scheduler, Job  Scheduler, Process Scheduler,  Context Switch, Operations on Processes, Interprocess Communication  Shared Memory Systems, Message  Passing Systems,  CPU Scheduler, Scheduling Criteria | 3rd | Installation of Linux Operating System |
| 8th |
| 9th |
| 4th | 10th | Scheduling Algorithms, Preemptive and  Non Preemptive,  First come first serve (FCFS),  Shortest Job first(SJF), Round Robin (RR)  Process Synchronization | 4th | Revision and File checking |
| 11th |
| 12th |
| 5th | 13th | Revision  Assignment-1  Class test  Sessional Test | 5th | Usage of directory management commands of Linux: ls, cd, pwd, mkdir, rmdir |
| 14th |
| 15th |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6th | 16th | UNIT-3 Deadlocks (Principles and Brief  Concept)---Deadlock, Conditions for deadlock  Methods for handling deadlocks  Deadlock Prevention, Deadlock  Avoidance  Deadlock 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 address  Space  Swapping, Memory allocation  Contiguous Memory allocation, Fixed  and variable partition | 7th | Revision and File checking |
| 20th |
| 21st |
| 8th | 22nd | Internal and External fragmentation and  Compaction  Paging – Principle of operation  Page allocation  Hardware 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 | Revision  Revision  Class test  Sessional Test | 10th | Revision and File checking |
| 29th |
| 30th |
| 11th | 31st | **UNIT-V-I/O Management Functions**  **(Principles and Brief Concept)**  Dedicated Devices, Shared Devices  I/O Devices, Storage Devices  Buffering, 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 system  Basic file system, Logical file system  Physical 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, Linux  Overview | 13th | Revision and File checking |
| 38th |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 39th | Structure of Linux, Linux releases  Open Linux, Linux System Requirements |  |  |
| 14th | 40th | Linux Commands and Filters: mkdir  cd, rmdir, pwd, ls, who, whoami, date  cat, chmod, cp, mv, rm,pg, more, pr, tail  head, 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, news  Shell: concepts of command options  input, output, redirection, pipes  redirecting and piping with standard  errors, Shell scripts, vi editing commands | 15th | Revision and File checking |
| 44th |
| 45th |