

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject Name: System Administration and Management(Elective)
Subject Code:3725507

Semester II

Type of course: ME - Computer Engineering (HIGH PERFORMANCE COMPUTING [HPC])

Prerequisite:

1. Fundamentals of Computing and Programming
2. Computer Organization and Architecture
3. Microprocessor and Micro controller

Rationale: NA

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits C | Examination Marks | | | | Total Marks |
|-----------------|----|---|--------------|-------------------|--------|-----------------|-----------|----------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE (E) | PA (M) | ESE (V) | PA (I) | |
| 3 | 2# | 0 | 4 | 70 | 30 | 30 | 20 | 150 |

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment;

Content:

| Sr. No. | Content | Total Hrs | % Weightage |
|---------|--|-----------|-------------|
| 1 | Architecture of Operating System, Process, Memory File system Management, Network Operating System, Paging, Virtual Memory, RTOS, running external processes, managing user accounts, file systems & processes. | 9 | 20 |
| 2 | Overview of windows operating system, Overview of Administrative Tasks and Tools Installation of windows operating system, Network Configuring Designing a Windows network implementing the TCP/IP protocol Configuring Sites, Configuration Settings, Introduction to Performance Tuning Maintenance, Powershell, Windows Programming Systems Concepts, Startup Files Linux, boot process, Installation of Linux, Configuring Services, Disk management, System, Allow System Configuration Files Patches, Perform User Management Perform System Management, SSH Access, OpenVPN, VNC, Repository Configuration. | 8 | 15 |
| 3 | Understand IAAS features and terminology,: Building and experience Cloud Services(IAAS), Create & manage IAAS from Front End panel, orchestration service, Test & Deploy First Application, Enable Scalable Application. | 8 | 15 |
| 4 | Basic Installation of Apache Hadoop, Test & Deploy First Application. | 7 | 20 |

Reference Books:

1. Linux Administration: A Beginner's Guide 6th Edition by Wale Soyinka/TM

Course Outcome:

After learning the course the students should be able to:

1. Demonstrate the basics about the operating systems
2. Discuss in details about the operation of windows operating system
3. Study in detail about the Linux programming systems and environments
4. Study the hierarchical memory system management
5. Study the different ways of cloud deployment

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website