Course Title: Network Administration (3 Cr.)
Course Code: CACS406
Year/Semester: IV/VII
Class Load: 6 Hrs. / Week (Theory: 3Hrs. Practical: 3 Hrs.)

Course Description: The course introduces the theoretical as well as practical concepts of Network Administration. The course includes concepts of work station, server and services, Network infrastructure, Implementing different network services.

Course Objectives: The objectives of this course is to make the students to design and implement enterprise level network with its services.

Course Contents:

Unit I: Introduction **[4Hrs.]**

Network administrator as a Profession, Network administrator professional ethics, Recent trends in network administration.

Unit I: Work Station, Server and Services **[16Hrs.]**

Workstation: Architecture design, Hardware strategies, OS installation. Servers: Hardware Strategies, Hardware Features & Specifications. Service: Requirements, Planning and Engineering, Service Launch, Disaster Recovery.

Unit II: Infrastructure **[6Hrs.]**

Network Architecture, Network Operations, Datacentres Overview and Running Datacentres.

Unit III: Service Recommendation **[16Hrs.]**

Server Upgrade, centralizing a service, Service Monitoring, Namespaces, Email Service, Print Services, Data Storage, Backup and Restore, Software Repository, Web Services.

Unit IV: **[6Hrs.]**

Preparing procurement plan/document for enterprise level network setup

Laboratory Works:
The laboratory work includes implementation of the mentioned content in syllabus using LINUX and Windows operating system.

Teaching Methods
The major teaching methods that can be followed for this course includes class lectures, laboratory activity, group discussions, presentations and case studies.

Evaluation

Examination Scheme				
Internal Assessment		**External Assessment**		**Total**
Theory	**Practical**	**Theory**	**Practical**	
20	**20 (3 Hrs.)**	**60 (3 Hrs.)**	**-**	

Text Book:

1. The Practice of System and network administration, 3rd Edition, Thomas A. Limoncelli, Christina J. Hogan, Strata R. Chalup
2. Mastering Windows Server 2019: The complete guide for IT professionals to install and manage Windows Server 2019 and deploy new capabilities, 2nd Edition
3. Ubuntu and Centos Linux server administration, MD. Tanvir Rahman, 2019

Course Title: Software Project Management
Course Code: CACS407
Year/Semester: IV/VII
Class Load: 5 Hrs. /Week (Theory: 3Hrs, Practical: 2Hr.)

Course Description
This course provides the comprehensive knowledge about Software Project Management, which encompasses with Software Project Planning, Scheduling, Cost Estimation, Risk management, Quality management and Configuration management.

Objectives: The general objective of this course is to provide fundamental knowledge of software project management and corresponding software tool.

Unit -1
Software Project Management Concepts **8 Hrs**
Introduction, Project and Software project, Software project vs other project, Importance and Problems in software project management, Process of SPM. Characteristics of good project manager, Successful Software Project Manager, Overview of Software Project Planning.

Unit-2
Software Project Scheduling **8 Hrs**
Objectives of activity planning, Work breakdown structure, Network planning model: Critical path method (CPM), Program evaluation and review technique (PERT), Precedence diagramming method (PDM), Shortening project duration, Identifying critical activities. Forward pass and Backward pass

Unit -3
Software Estimation Techniques **7 Hrs**
Software Effort Estimation: Problems with over and under estimations, Basis of software Estimating, Software effort estimation techniques, expert Judgment, Estimating by analogy. Bottoms-up estimating, Top-down approach and parametric models.

Unit -4 **8 Hrs**
Software Evaluation and Costing
Project Evaluation: Strategic Assessment, Technical Assessment, cost-benefit analysis, Cash flow forecasting, cost-benefit evaluation techniques, Risk Evaluation. Selection of Appropriate Report, Project approach: Choosing technologies, choice of process models, structured methods.

Unit -5
Risk Management **5 Hrs**
Risk Identification, Planning, Evaluation and Management, Categories of Risk, Framework for dealing with risk, evaluating Risks to the schedule.

Unit -6
Software Quality Management **5 Hrs**
TQM, Six Sigma, Software Quality: defining and importance software quality, ISO9126, Place of software quality in software planning.

Unit -7

Software Configuration Management **7 Hrs**

Concept, Requirement and Elements of SCM, Baseline, SCM Repository, Versioning and version control, SCM Process, Change Control Process. Configuration Audit and Status Reporting. Case Study: Version Control Software Tools (Git, CVS, SVN)

Laboratory Works

Laboratory works should be done covering all the topics listed above and a small work should be carried out using the concept learnt in each unit in the group. Work should be assigned on individual basis. Student may choose project Management tools like (MS Project, OpenProj, dot Project, Trello, Asana, ClickUp).

Teaching Methods

The general teaching pedagogy includes class lectures, group discussions, case studies, guest lectures, research work, project work, assignments (theoretical and practical), and examinations (written and verbal), depending upon the nature of the topics. The teaching faculty will determine the choice of teaching pedagogy as per the need of the topics.

References

1. Cotterell, B. H. (2018). Software Project Management. McGraw-Hill.
2. Dutt, S. C. (n.d.). Software Project Management. Pearson Education India.
3. A.S. Kelkar (n.d.). Software Project Management. PHI Learning.