

UNIT-III**(10 Hours)**

Data Wrangling: Hierarchical Indexing, Combining and Merging Data Sets Reshaping and Pivoting.

Data Aggregation and Group operations: Group by Mechanics, Data aggregation, General split-apply-combine, Pivot tables and cross tabulation

UNIT-IV**(15 Hours)**

Time Series Data Analysis: Date and Time Data Types and Tools, Time series Basics, date Ranges, Frequencies and Shifting, Time Zone Handling, Periods and Periods Arithmetic, Resampling and Frequency conversion, Moving Window Functions.

Advanced Pandas: Categorical Data, Advanced Group by Use, Techniques for Method Chaining

References:

1. Dr. Anil Maheshwari, "Data Analytics", McGraw Hill Education (India) Private Limited.

Practicals :

Use data set of your choice from Open Data Portal (<https://data.gov.in/>) for the following exercises.

1. List of Practical based on NumPy ndarray
2. List of Practical based on Pandas Data Structures
3. List of Practical based on Data Loading, Storage and File Formats
4. List of Practical based on Interacting with Web APIs
5. List of Practical based on Data Cleaning and Preparation
6. List of Practical based on Data Wrangling
7. List of Practical based on Data Aggregation
8. List of Practical based on Time Series Data Analysis

DSE – 15**Organizational Behavior****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Organizational Behavior	4	3	1	0	Class XII pass with Mathematics	NIL

Learning Objectives:

1. To deeply understand the role of individual, groups and structure in achieving organizational goals effectively and efficiently.

2. *To critically evaluate and analyze various theories and models that contributes in the overall understanding of the discipline.*

Learning Outcomes:

1. *To analyze and compare different models used to explain individual behavior related to motivation and rewards.*
2. *To identify the processes used in developing communication and resolving conflicts.*
3. *To explain group dynamics and demonstrate skills required for working in groups (team building)*

UNIT-1

(15 Hours)

Basic forms of Business Ownership: Sole proprietorship, Partnerships, Corporations/Company, Cooperatives: Advantages and Disadvantages; An Introduction to Special forms of ownership: Franchising, Licensing, Leasing; choosing a form of Business ownership; Corporate Expansion: A brief introduction to mergers and acquisitions, diversification, forward and backward integration, joint ventures, and strategic alliance. Evolution of Management Theory: Classical, Behavioral, Systems and Contingency approaches to Management. Managerial functions and Roles (Henry Mintzberg).

UNIT-II

(15 Hours)

Overview of Planning: Types of Plans, the planning process, making plans effective, MBO as a tool for planning; Decision making: Process, Types and Techniques. Control: Function, Process and types of Control; Principles of organizing: Common organizational structures- Functional product, Division, Customer, Geographic / Regional, Matrix, Hybrid, Networking organizational structures; Delegation and Decentralization: Factors affecting the extent of decentralization, Process and Principles of delegation.

UNIT-III

(15 Hours)

Conceptual Foundations and Importance of organizational Behavior. Perception and Attribution: Concept, Nature, Process, And Personality: Concept, Types and Theories of Personality: Learning: Concept and Theories of Learning, reinforcement, Emotional Intelligence. Motivation:Concepts and their application, Need (Maslow and Herzberg), Content and Process theories, Expectancy theory, Equity theory, goal Setting theory. Leadership: Leaders and Leadership Process: Traits, Behavior, and Situational theories, Blake and Mouton's: Managerial grid, Hersey and Blanchards' situational Leadership Model, Likert's 4 system model, Fiedler's Leadership contingency theory, House's Path-goal theory, Contemporary Leadership issues: Charismatic, Transformational Leadership.

UNIT-IV

(15 Hours)

Groups and Teams: Definition, Difference between Groups and teams; Stages of Group Development, Group Cohesiveness, Types of teams. Analysis of Interpersonal Relationship: Transactional Analysis, Johari Window. Organizational Power and Politics: Concept, Sources of Power, Tactics to gain power in Organizations. Nature of organizational politics. Conflict: Concept, Sources, Types, stages of conflict and Management of conflict, organizational Change: Concept, Resistance to change, managing resistance to change, Implementing Change, Kurt Lewin Theory of Change.

References:

1. Koontz and Heinz Wehrich: Essential of management McGraw Hill, 1999.

2. Kaul, Vijay kumar, Management- Text and Cases, Vikas Publishing, New Delhi, 2015.
 3. Stoner and Wankel: Management

DSE – 16
Software Project Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/Practice		
Software Project Management	4	3	0	1	Class XII pass with Mathematics	NIL

Learning Objectives:

1. To use multiple techniques to estimate software tasks, projects and products.
2. To define, implement, analyze and use the metrics required to manage a software project.
3. To describe the strengths and weaknesses of software estimation and metrics techniques.

Learning Outcomes:

1. Apply project management concepts and techniques to an IT project.
2. Identify issues that could lead to IT project success or failure.
3. Explain project management in terms of the software development process.
4. Apply project management concepts through working in a group as team leader or active team member on an IT project

UNIT-I

(7 Hours)

Introduction and Software Project Planning: Fundamentals of Software Project Management (SPM), Need Identification, Vision and Scope document, Project Management Cycle, SPM Objectives, Management Spectrum, SPM Framework, Software Project Planning, Planning Objectives, Project Plan, Types of project plan, Structure of a Software Project Management Plan, Software project estimation, Estimation methods, Estimation models, Decision process.

UNIT-II

(8 Hours)

Project Organization and Scheduling Project Elements: Work Breakdown Structure (WBS), Types of WBS, Functions, Activities and Tasks, Project Life Cycle and Product Life Cycle, Ways to Organize Personnel, Project schedule, Scheduling Objectives, Building the project schedule, Scheduling terminology and techniques, Network Diagrams: PERT, CPM, Bar Charts: Milestone Charts, Gantt Charts. (SPI), Interpretation of Earned Value Indicators, Error Tracking, Software Reviews, Types of Review: Inspections, Deskchecks, Walkthroughs, Code Reviews, Pair Programming.

UNIT-III

(15 Hours)