

Final Year B.Tech Interdisciplinary Open Course [IOC] Odd Semester

| Sr. No | Department | Course Name | Except |
|--------|------------------------|--|---------------------------|
| 1 | Applied Science | Enterprise Analysis-Desk Research | Open to all |
| 2 | | Principles of Marketing for Engineers | Open to all |
| 3 | Civil Engineering | Human Resource Management | Civil Engineering |
| 4 | Mechanical Engineering | Air Conditioning | Mechanical Engineering |
| 5 | Production Engineering | Introduction to Operations Research | Production and Mechanical |
| 6 | | Supply Chain and Logistics Management | Production Engineering |
| 7 | | Project Planning and Control | Production Engineering |
| 8 | | Enterprise Resource Planning | Open to all |
| 9 | Planning | Infrastructure Planning and Management | Open to all |

[] Enterprise Analysis – Desk Research

Teaching scheme

Lectures: 2 hrs / week

Evaluation scheme

Assignments 40 Marks
ESE (Practical) 60 Marks

Course Outcomes:

At the end of the course, student will demonstrate the ability to:

- Describe the key historical, organizational, market related, financial, governance, leadership, and social responsibility dimensions of a real world
- Summarize the regional, national, and global footprint of a real-world business.
- Demonstrate the use of secondary – offline and online resources to profile a real-world business organization.
- Analyze using tables and charts, the trends in market standing and financial performance of a real-world business organization over the last 5 years.
- Compose a succinct summary of future of a real-world business organization using the company website, shareholders reports and other information available in the public domain.

Unit 1: Enterprise History & Background:

Establishment, Original & Current Promoters, Business Group or Business Family to which it belongs, Vision-Mission-Philosophy – Values-Quality Policy, Brief profiles of the Chairman, CEO, MD, Members of Board of Directors along with their career highlights CSR Initiatives, Technical and other collaborations if any, Recent Mergers and Acquisitions, if any. (4)

Unit 2: Organization:

Organization Structure, Geographical (domestic and global) foot print – at the time of inception and spread over the years, company's current head quarter worldwide as well as head quarter / corporate office in India, Manufacturing /Service locations Indian and major worldwide, Certifications if any - ISO / EMS / FDA / CMMI , etc. Online presence. Initiatives towards gender diversity, Initiatives towards social inclusion, Initiatives towards environment conservation. Current Talent needs. Key highlights of the company's website. (4)

Unit 3: Markets:

Major Customers, customer segments, Products, Product lines, Major Brands, Market Share – nationally, region wise, product wise, Advertising Agency, Advertising Punch Line/Slogan, Logo, Key Alliances in the past 5 years & impact. Mergers & Acquisitions, if any. Technological developments. Disruptive innovations affecting the organization. Labor unrest if any – reasons thereof and impact. Emerging potential competition through first generation entrepreneurs or global / local players. (6)

Unit 4: Financials:

Data to be studied, tabulated, graphically depicted, analyzed and presented for last 5 years for the Revenues, Profitability, Market Capitalization, Segmented Revenues, Auditors. Listing status & Scrip Codes – BSE and NSE, Global Listings on International Stock Markets, Share Price Face Value, Current Market Value, Annual High Low Figures, P/E Ratio, Shareholding Pattern. (6)

Unit 5: Governance:

Philosophy, Action taken by SEBI if any, Involvement in Scams, Insider Trading Issues, Standard & Poor's Corporate Governance Scores, CRISIL Rating. Major Awards and Achievements of the Organization in the last 5 years. Forward looking statements of the top management. (4)

****Pedagogy:**

1. Student shall carry out an in-depth study of any of the organization of their choice.
2. Organization selected should demonstrate a variety across sectors, ownerships, size and other key dimensions.
3. Students shall submit a structured detailed report.

Textbook:

Ravi M Kishore, Financial Management (Theory, Problems and Cases), 8th Edition, Taxmann's Publication

Reference Books:

1. Reference Books:
 - a) Krishna G. Palepu, Paul M. Healy, Business Analysis and Valuation using Financial Statements, 5th Edition, Cengage India, 2015
 - b) Benjamin Graham, The Intelligent Investor, Revised Edition, Harper Publications.
2. The course has to be taught using the company annual reports and other publications, company website, social media feeds, business newspapers and business data bases such as ACE equity, CMIE database, etc.
3. Websites:
 - a) www.moneycontrol.com
 - b) www.bseindia.com
 - c) www.nseindia.com
 - d) www.screener.in

PRINCIPLES OF MARKETING FOR ENGINEERS

Teaching scheme

Lectures: 2 hrs/week

Evaluation scheme

Internal Assessment: T1 20 Marks

Internal Assessment: T2 20 Marks

End Semester Assessment: 60 Marks

Course Outcomes:

- To understand the evolving domain of Marketing & perspective of Marketing
- To develop in-depth understanding of the basic concepts of Marketing management and their applications
- Apply and analyze market scenarios, strategies and conditions well
- Evaluate and apply newer marketing strategies and practices in an organization

Units/Contents:

1. Introduction to Marketing

(6 Hours)

- Importance & Scope of Marketing, Definition
- Core Marketing Concepts: Transaction & Exchange Process, Goods – Services Continuum, Product, Market, Needs, Wants, Desire & Demand, Value & Satisfaction, Market Potential & Market Share
- Approaches to Marketing: Production, Product, Sales, Marketing & Holistic Marketing Concepts
- Difference between Selling & Marketing, Marketing Myopia
- Functions of Marketing

2. Marketing Environment & Competition

(6 Hours)

- Scanning the environment, Analyzing Internal & External environment, Demographic & Natural Environment, PEST analysis
- Porter's 5 forces model of Competitive Strategy, Identifying & Analyzing Competitors, Concept of Core Competence.

3. Buyer Behaviour

(6 Hours)

- Understanding individual Consumer Behaviour: Concept & Need, Influencing Factors & Buying roles, 5 step Buyer decision process, types of buying Behavior, New Product Adoption Process
- Differences between Consumer & Business Buying Behaviour

- Understanding Business Buyer Behaviour: Concept, Types of business markets, Buying Situations, Participants, Stages in Buying process

4 . Marketing Research & Marketing Information System (4 Hours)

- Need, Role & Components, Internal Records & Marketing Intelligence
- Marketing Information and Customer Insights
- Assessing Marketing Information Needs
- Developing Marketing Information
- Marketing Research
- Analyzing and Using Marketing Information

5 . Market Segmentation, Targeting & Positioning (4 Hours)

- Definition, Needs & Benefits of Market Segmentation, Bases for Market Segmentation of Consumer & Industrial goods. Effective Segmentation criteria, Evaluating & Selecting Target Markets, Positioning – Value Proposition & USP, Concept of Brand

6. Marketing Mix (2 hours)

- Definition of each of the 4 P's (4 C's and 4 A's), Components of each P.

Textbooks / Journals:

1. Marketing Management: Kotler, Keller, Koshy & Jha, (Prentice-Hall ,13th Edition)

Additional Reading:

1. Marketing Management: VS Ramaswamy & S Namakumari (MacMillan,3rd Edition)
2. Marketing Management: Etzel, Walker, Stanton & Pandit (Tata McGraw Hill, 13th Edition)
3. Marketing Management: Rajan Saxena (Tata McGraw Hill, 3rd Edition)
4. Analysis for Marketing Planning – Donald Lehmann & Russell Winer, 6th edn.
5. Case Studies in Marketing - Indian context - R.Srinivas
6. Journals can also be referred to gain insights into current thinking

(OEC) HUMAN RESOURCE MANAGEMENT

Teaching Scheme

Lectures : 3 hrs / week

Tutorial: 0 hr / week

Examination Scheme

Internal Test 1: 20 marks

Internal Test 2: 20 marks

End Sem. Exam: 60 marks

Course Outcomes:

Students will be able to:

1. To have the basic concept of Human Resource Management
2. To have the clear concept about planning, Manpower Calculations, Supervisory skills etc.
3. To have the clarity about the meaning of Decision making, Leadership and Time Management- the three most important aspects of HRM
4. To have the proper idea about the recruitment process, orientation programme and team work
5. To have the idea about importance of Training and the matters viz: Job rotation, Job evaluation and Job enrichment
6. To have the idea about role of motivation, labour laws and labour legislation, individual employment relationships, wages and remuneration, safety from health point of view. Concept of Trade Union and social security.

Contents:

Unit-1

Introduction to HRM. Scope of HRM. Functions and objectives of HRM. HRM Model. Evaluation of HRM. Need of HRD in the context of globalization. Man Management. (06 Hours)

Unit -2

Human Resource Planning. Nature and Importance of HRP, Factors affecting HRP, Planning Process, Manpower Calculations. Techniques of manpower planning for company projects. Various HRD parameters, functional skills, supervisory skills, Entrepreneurship. Industrial Psychology. Personality

Development.

(06 Hours)

Unit- 3 :

Personnel Management: Concept of Personnel Management, Role and Function of a Personnel Manager. Necessity of Personnel Management. Time Management. Leadership. Qualities of a leader. Directing, Decentralizing, Delegation, Departmentalization and Division of Labour. Decision making. Communication skills. Coordinating and Controlling. Quality Control.

(07 Hours)

Unit-4

Recruiting Human Resources: Nature, purpose and importance of recruitment, factors governing recruitment, Recruitment process, Selecting Human Resources: Organization for selection, selection process, barriers to effective selection, selection in India. Right Man for the Right Job. Inducting and placing: Evaluation of Orientation programmes, Problems of orientation, typical orientation programme. Team Work and its importance. Corporate expectations from its employees.

(07 Hours)

Unit-5

Training: Nature of training and development, Inputs in training and development, gaps in training, the training process in various construction companies. Impact of practical Training. Human Relations. Remuneration: Remuneration of Personnel. Factors influencing employees' remuneration, various methods of deciding the remuneration wage policy in India. Job evaluation, Job Satisfaction, Job Rotation, Job Enrichment. Performance appraisal and Merit rating. Success of a corporate leader. Success of an Organization.

(07 Hours)

Unit-6

Motivation and Perspective: Motivation, importance of motivation, theories of motivation, Theories of Motivation and their comparison, Motivation as

an incentive. Strong point of a person. SWOT Analysis. Promotion. HRM and IHRM. Managing international HR activities, Labour laws, Labour Legislation. Employees' health. The basic subject matter of labour law can be considered under nine broad heads: employment; individual employment relationships; wages and remuneration; conditions of work; health, safety, and welfare; social security; trade unions and industrial relations; the administration of labour law. (07 Hours)

Text Books :

1. **Fundamentals of Human Resource Management by Josephat Stephen Itika published by African Studies Centre**
2. **Mastering The Rockefeller Habits by Verne Harnish**
3. **100 Ways to Motivate Others: How Great Leaders Can Produce Insane Results Without Driving People Crazy by Steve Chandler**
4. **Managing the Management in Corporate by Prof. Suvasish Mukhopadhyay**

Reference Books :

1. **Good To Great by Jim Collins**
2. **Start With Why by Simon Sinek**
3. **You Can Win by Shiv Khera**
4. **The HR Answer Book: An Indispensable Guide for Managers and Human Resources Professionals — Shawn Smith and Rebecca Mazin**

(IOC) Air Conditioning

Teaching Scheme:
Lectures : 3 Hrs/week

Examination Scheme:
T1 and T2: 20 Marks each
End-Sem Exam: 60 Marks

Course Outcome :

At the end of course student should be able:

- To understand the concepts of Psychrometry.
- To know working of various Air-conditioning systems.
- To estimate cooling load for various applications.
- To design the A.C. systems.
- To design duct system for a central A.C.systems.

Unit I: Psychrometry

[10hrs]

Introduction, Applications of Air conditioning, Psychrometry, Psychrometry chart, Typical Air-conditioning process, Adiabatic cooling, Sensible heating, Cooling with humidification Process, Heating and Humidification, Adiabatic mixing of air streams, Air washer, Chemical dehumidification (Numerical Treatment).

Unit II: Air-conditioning systems

[6hrs]

Introduction ,Classification of Air-conditioning systems, Unitary systems, Central Classification of Air-conditioning systems, Reheat system, Multizone system, Dual Duct system, Variable Air Volume system (VAV) system, All – air and water systems, Unitary Vs Central systems.

Unit III : Cooling Load Estimation

[8hrs]

Introduction, Comfort, Human comfort chart, Outside Design conditions, Sources of heat load ,conduction through Exterior structures, Heat gain through glass , infiltration, ventilation, outside air load , heat load from people, Lightning, heat gain from equipment, System heat gain room cooling loads, cooling coil load.

Unit IV :Designing the Air-Conditioning Systems**[6hrs]**

Psychometric analysis of Air-conditioning systems, Summer airconditioning systems provided with Ventilation air, Room sensible heat factor (RSHF).

Unit V : Air-conditioning Components**[5hrs]**

Cooling coil, Heating coils, Air cleaning devices, Humidifiers, Fan, Air distribution systems.

Unit VI: Duct Design**[5hrs]**

Introduction , classification ,Duct materials, Continuity equation , Energy equation for pipe flow, total static velocity pressure , Static region , Pressure loss in duct Rectangular sections equivalent to circular duct. Dynamic losses in duct, Methods of duct design, Duct arrangement systems.

Text Books

- R.J.Dossat, "Principles of Refrigeration", Pearson Education Asia, 2001
- C.P.Arora, "Refrigeration and Air-conditioning", Tata McGraw-Hill, 2000
- Stoecker & Jones, "Refrigeration and Air-conditioning", McGraw Hill Book Company, New York, 1982.
- S.N. Sapali "Refrigeration and Air-conditioning", PHI, 2016

Reference Books

- J.L.Threlkeld, "Thermal Environmental Engineering", Prentice Hall, 1970.
- W.F.Stoecker, "Industrial Refrigeration Handbook", McGraw-Hill, 1998.
- P.C.Koelet, "Industrial Refrigeration: Principles, Design and Applications", Macmillan, 1992
- ASHRAE HANDBOOKS (i) Fundamentals of Refrigeration.
- "Handbook of air-conditioning system design", Carrier Incorporation, McGraw Hill Book Co.,U.S.A, 1965.
- Jones W.P., "Air Conditioning Engineering", Edward Arnold Publishers Ltd., London, 1984.
- Hainer R.W., "Control Systems for Heating, Ventilation and Air-Conditioning", Van Nostrand

Interdisciplinary Course II

(IOC-22001) Introduction to Operations Research

Teaching Scheme

Lectures: 2 hrs/week

Examination Scheme

100 marks: Continuous evaluation-
Assignments /Quiz/T1/T2 - 40 Marks,
End Sem Exam- 60 marks

Course Outcomes:

Students will be able to

- Develop a general understanding of the Operational Research (OR) approach to decision making
- Develop network planning procedures for solving logistic and scheduling problems.
- Formulate inventory and queuing problems and generate optimal solutions.
- Identify best techniques to solve a specific problem.

Syllabus Contents:

Unit I

(7 hrs)

Introduction: Operations Research: Development, history, definitions, objectives, characteristics, limitations, phases, and applications. Optimization models and their classifications.

Linear Programming: Formulation of LP problem, Simplex method (minimization / maximization cases). Degeneracy in LP, Duality in LP, Sensitivity analysis.

Unit II

(7 hrs)

Transportation: Introduction. Methods for finding initial solution. Test of optimality. Maximization Transportation problem. Degeneracy.

Assignment Problem: Introduction. Solution methods. Variations of the assignment problem. Traveling Salesman Problem.

Unit III

(7 hrs)

Sequencing Models: Scheduling and sequencing. Assumptions in sequencing models. Processing "n" jobs on "m" machines. Graphical Method.

Scheduling: Multiple jobs single machine sequencing methods- FCFS, EDD, LFT, etc.

Inventory Control System (Quantitative Approach): Introduction. Meaning of Inventory Control. Functional classifications of Inventories. Advantages of Inventory Control. Deterministic Inventory Models: economic lot size with instantaneous replenishment with and without shortage costs, economic lot size models with quantity discount.

Unit IV

(7 hrs)

Queuing Theory: Queuing Systems: Introduction, cost associated with, Classification of queuing models. Kendall's notations. Models: $\{(M/M/1): (\alpha / FSFS)\}$. Single server models.

Simulation: Introduction to discrete event Simulation. Monte -Carlo Simulation. Problems

related to Monte-Carlo Simulation.

Unit V

(7hrs)

Network Models: Introduction to PERT / CPM. Concepts and construction of network diagrams. Critical path and project duration, floats, network crashing, optimum project duration and cost, PERT activity, time estimate, probability of completion of a project on before specified time, minimal Spanning tree.

Text Books:

- Gupta P. K. and Hira D. S.: Operations Research, S Chand & Company Ltd.
- Sharma S. D., Kedar Nath: Operations Research, Ram Nath & Co.

References Books:

- Sharma J. K.: Mathematical Models in Operations Research, Tata McGraw – Hill Publishing Company Limited.
- Taha H. A.: Operations Research - An Introduction, Prentice Hall of India Pvt. Ltd.
- Wagner H. N.: Principles of Operations Research with applications to Managerial Decisions, Prentice Hall of India Pvt. Ltd.
- R. Panneerselvam: Operations Research, Prentice Hall of India Pvt. Ltd.
- Wiest J. D. & Levy F. K.: Managerial Guide to PERT/CPM, Prentice Hall of India Pvt. Ltd.
- Srinath L.S "PERT & CPM principles & Applications" Affiliate East West Press (P) Ltd., New Delhi, 1975.

(IOC-22003) Supply Chain and Logistics Management

Teaching Scheme

Lectures: 2 hrs/week

Examination Scheme

100 marks: Continuous evaluation-
Assignments /Quiz/T1/T2: 40 Marks,
End Sem Exam- 60 marks

Course Outcomes:

Students will be able to

- Understand, analyze the designing, planning and operational decisions of SCM.
- Identify, clarify managerial action to improve supply chain performance for the desired goals.
- Understand the techniques used in the management of critical components of logistics and supply chains e.g., transportation, warehousing, inventory.
- Evaluate the inventory levels in supply chain.

Syllabus Contents:

Unit 1

(7 hrs)

Introduction to Supply chain management

Definition of Supply chain and supply chain management, Supply chain stages and decision phases, process view of a supply chain. Supply chain flows, Information systems and SCM,. Drivers of supply chain performance. Competitive and supply chain strategies. Achieving strategic fit. Expanding strategic scope, Challenges facing SC managers

Unit 2

(7 hrs)

Supply Chain Network

Supply Chain Network (SCN) - Role, Factors, design options for distribution network. Models for Facility Location and Capacity Allocation and problem solving, Impact of uncertainty on SCN - Discounted Cash Flow Analysis.

Unit 3

(7 hrs)

Planning & Managing Inventories in a Supply Chain

Role of forecasting in the SC, Review of inventory concepts. Trade promotions, Managing Cycle Inventory, Cycle time overview, causes of long cycle times, Methods of reducing cycle time, Safety inventory determination.

Unit 4

(7 hrs)

Sourcing and Transportation in the supply chain

Role of Sourcing, Supplier - Scoring & Assessment, Selection & Contracts. Design Collaboration. Role of transportation, Factors affecting transportation decisions. Modes of transportation and their performance characteristics. Designing transportation network, Tailored transportation, Routing and

scheduling in transportation. International transportation.

Unit 5

(7 hrs)

Coordination and Technology in the Supply Chain

Coordination in a supply chain: Bullwhip effect. Obstacles to coordination. Managerial levers to achieve co-ordination, Building strategic partnerships. The role of IT in Supply Chain, The Supply Chain IT Framework, CRM, SRM. The role of E-business in a supply chain, The E-business framework, E-business in Practice. Case discussions.

Textbooks:

- Sunil Chopra & Peter Meindl; Supply Chain Management -Strategy, Planning & Operation; 11 Edition - 2003. Pearson Education Inc.
- Douglas Lanibert & James Stock: Strategic Logistics Management: Irwin McGraw Hill.
- Robert B. Handfield, Ernest L. Nichols, Jr, Introduction to Supply chain management, Prentice Hall.

References Books:

- Robert B. Handfield, Ernest L. Nichols, Jr.; Supply Chain Redesign-Transforming Supply Chains into Integrated Value Systems 2002, Pearson Education Inc., ISBN:8129701138.
- Jeremy F. Shapiro, Duxbury; Modelling the Supply chain: 2002, Thomson Learning, ISBN: 0-534-37363-
- David Simchi Levi, Philip Kaniinsky & Edith Simchi Levi: Designing and Managing the Supply Chain: McGraw Hill.
- B.S. Sahay, Supply Chain Management: Mc. Millen.

(IOC-22004) Project Planning and Control

Teaching Scheme

Lectures: 2 hrs/week

Examination Scheme

100 marks: Continuous evaluation-
Assignments /Quiz- 40 Marks, End Sem
Exam- 60 marks

Course Outcomes:

At the end of course students will be able to:

- Understand functions project planning and demand forecasting.
- Understand financial aspects related Project planning
- Analyze project cash flow and capital budgeting
- Adopt project planning steps in handling the project
- Use Network techniques to analyze the projects

Syllabus Contents:

Unit I

(4 hrs)

Function of Project Planning –Inter dependency relationship, Generation and screening of project ideas, project rating index, characterization of the market, demand forecasting, market planning.

Unit II

(6 hrs)

Financial Analysis: Estimation of cost of project and means of financing, estimates of sales and production, cost of production, working capital requirement and its financing, estimates of working results, breakeven points – projected cash flow statement, projected balance sheet.

Unit III

(6 hrs)

Project cash flows: Basic principles of measurement of cash flows, components of the cash flow streams – viewing a project from different points of view, definition of cash flows by financial institutions and planning commission, Forms of project organization, project planning, project control, human aspects of project management, prerequisites for successful project implementation.

Unit IV

(6 hrs)

Project review and administrative aspects: Initial review, performance evaluation, abandonment analysis, administrative aspects of capital budgeting, evaluating the capital budgeting system of an organization.

Unit V

(8 hrs)

Network techniques: Network techniques for project management, development of project network, time estimation, determination of critical path, scheduling when resources are limited, PERT and CPM models

Textbooks:

- Prasanna Chandra Project Planning: Analysis, Selection, Implementation and

Review, Mc Graw Hill Education, 7th Edition 2009

References Books:

- Narendra Singh, Project Management and Control, HPH, 2003
- John M. Nicholas and Herman Steyn, Project Management for Business and Technology: Principles and Practice, Prentice Hall India, 2012
- Clifford F. Gray & Eric W. Larson, Project Management: The Managerial Process, Tata Mc Graw Hill, 4th edition, 2010
- Chitkara K K, Construction Project Management, Planning, Scheduling and Control, Tata McGraw-Hill, 2nd Edition, 2010.
- Meredith Jack R & Gopalan M.R, Project Management, Wiley India (P) Ltd. 2006
- Harold Kerzner, Project Management A systems approach to Planning, Scheduling and Controlling, Wiley India, 10th Edition, 2009.

(IOC-22002) Enterprise Resource planning

Teaching Scheme

Lectures: 2 hrs/week

Examination Scheme

100 marks: Continuous evaluation-
Assignments /Quiz- 40 Marks, End Sem
Exam- 60 marks

Course Outcomes:

At the end of course students will be able to:

Course Outcomes:

1. Classify different business processes of the organization and relationship among all processes.
2. Understand and analyse the concept of organizational structure used in each business process,
3. Understand the role of master data and its application impact in defining the business process.
4. Identify suitable business transactions of different modules.
5. Understand and demonstrate key integration points between the different SAP modules supporting each business process cycle.

Syllabus Contents:

Unit I

(5 hrs)

Basic Concepts of ERP, Evolution of ERP system , Major features of ERP, Benefits of ERP, Seller-Buyer Concept of ERP System, Introduction to Modules of ERP system, different vendors of ERP.

Unit II

(5 hrs)

Materials Management: Basic Features of MM module, SAP MM Organizational Structure, Master data in SAP MM Module: Material Master, Vendor Master, Purchase Info Record, Types of Business Processes in Procurement: Procure to Pay Process, Generation of reports and its analysis

Unit III

(5 hrs)

Sales and Distribution: Basic features of SD module, Organizational structure of SD module, Master Data in SD Module: Material Master, Customer Master, Conditions Master, Types of Business Processes in Sales and Distribution: Order-to-Cash Process, Generation of reports and its analysis

Unit IV

(5 hrs)

Production Planning: Types of Manufacturing in PP, Organizational Structure of PP Module, Master Data in PP Module : Material Master Data, Work Center, Bill of Material, Routing, Capacity Planning, Sales & Operation planning, Demand management, Material Resource Planning, Business Processes in PP Module: Production Processing Cycle, Generation of reports and its analysis

Unit V**(4 hrs)**

Financial Accounting and Management Accounting: Basic Accounting Concepts, FI Organizational Structure, FI Master Data, FI Business Processes

Unit VI**(4 hrs)**

Human Capital Management: HCM Organizational Structure, HCM Master Data, HCM Processes: Organizational Management, Personnel Administration, Recruitment

Textbooks:

- Gopal Krishnan .P, Materials Management: An Integrated approach, Phi Learning

References Books:

- Simha R. Magal, Jeffrey Word, Integrated Business Processes with ERP Systems, Wiley
- Gopal Krishnan .P, Materials Mgmt: An Integrated approach, Phi Learning
- Glynn C.Williams, Implementing SAP ERP Sales and Distribution, Tata McGraw Hill
- R.Panneerselvam, Production and Operation Management, PHI Learning
- Barry Gerhart , Raymond Noe, John Hollenbeck,Patrick Wright, Human Resource Management, Tata McGraw Hill
- Khan & Jain, Basic Financial Management, Tata McGraw Hil

| (IOC) - Infrastructure Planning and Management | |
|---|----------------------------|
| Teaching Scheme | Examination Schemes |
| Lectures: 2 Hrs/week | T1 and T2 - 20 Marks each |
| | End Sem- 60 Marks |

Course Outcomes:

- CO1: Estimate water supply demand for an area
- CO2: Prepare City Sanitation Plans
- CO3: Learn the Importance and role of Infrastructure Management in Urban Development
- CO4: Analyze issues related to Urban development and Infrastructure Planning in India.

Unit 1: Water supply

(6Hrs)

Concept of basic needs; formulation of objectives, norms and standards; Planning for water supply; Source of supply, source analysis, quality and quantity; Issues related to transmission of water, treatment methods, sequence, benefits; Distribution systems suitable in large city, small town; basic requirements, design guidelines; Technological options for water supply; Aspects of water distribution in far flung areas; Water supply projects financing and management; water pricing, water pollution.

Unit 2: Sewage and Sanitation

(6Hrs)

Biological/ Environmental/ Cultural concepts in environmental sanitation; Low cost sanitation options: biogas, Sulabh Sauchalaya, etc.; Basic information, alternative disposal systems and conditions of use; Principles of sewage system layout; Collection, transportation and treatment of sewage; Principles of water bound disposal system, storm water drainage systems; Different methods of sewage treatments; Issues related to development parameters. Solid waste: basic principles, generation, characteristics, collection, collection, disposal, management of city waste; Environmental issues of garbage disposal; Alternative technological innovations, conversion of garbage into usable forms.

Unit 3: Introduction to urban governance

(4Hrs)

Meaning of governance and government; Scope of governance, evolution of concept of governance; Theories of local government; History of urban local bodies in India; Evolution of modern urban local governments during British rule; Decentralization of local government; Recommendations of various committees; Politics and progress of decentralization; Government, governing and governance; Determinants and indicators of good governance; Citizens charter and other instruments; Governance and finance

Unit 4: Role of Infrastructure Management in Urban Development

(4Hrs)

Definition, objectives and scope of management; Role of infrastructure management in developing economy; Meaning and theory of organization; Urban development as a decision making process and a corporate activity; Application of infrastructure management techniques in urban planning and development

Unit 5: Urban development and Infrastructure Planning in India

(4Hrs)

Urban development in India: problems and issues, policies, programs and provisions in the national five year plans; processes of decision making for urban development at national, regional, state, district and local levels. (governance 3 tier structure, urban management tool)

Reference Books:

1. Infrastructure Planning Handbook / Alvin S. Goodman & Makarand Hastak

2. Infrastructure Management/ W.R. Hudson ,R.C.G. Hass, W. Uddin
3. Water Supply and waste water Engg. / B S N Raju
4. Inclusive Planning and Social Infrastructure / A.K. Jain
5. William I. Goodman and Principles and Practice 1968 Goodman Eric C. Freund of Urban Planning (Municipal Management)
6. High Powered Expert Report on Indian Urban 2011 NIUA/MoUD Committee(under Infrastructure and chairpersonship of Ms. Services IsherAhluwalia