

| Breadth - V(Elective) | | | | | |
|--------------------------------|--|----------|----------|----------|----------|
| Course Code | Subject | L | T | P | C |
| | Principles of Management | 3 | 0 | 0 | 3 |
| PE 5009 | Industrial Organization and Management | 3 | 0 | 0 | 3 |
| | Organisation Behavior | 3 | 0 | 0 | 3 |
| | Art and Culture | 3 | 0 | 0 | 3 |
| | Sociology and Environmental Psychology | 3 | 0 | 0 | 3 |
| PE 5011 | Project Engineering | 3 | 0 | 0 | 3 |
| Breadth - VI(Elective) | | | | | |
| | Business Economics | 3 | 0 | 0 | 3 |
| PE 6009 | Engineering Economy | 3 | 0 | 0 | 3 |
| | Financial Management | 3 | 0 | 0 | 3 |
| Breadth - VII(Elective) | | | | | |
| | IPR | 3 | 0 | 0 | 3 |
| | Business and Industrial Laws | 3 | 0 | 0 | 3 |
| | Entrepreneurship | 3 | 0 | 0 | 3 |
| | Professional ethics | 3 | 0 | 0 | 3 |

PRINCIPLES OF MANAGEMENT (MSH 1131)

Module-1 : Introduction of Management: Definition, Nature, Objective, Functions of Management, Managerial Skills, Managerial Role.

Module-2 : Evolution of Management Thought: Classical Theory- Max Weber's Bureaucratic Theory, Taylor's Scientific Theory, Fayol's Functional Theory.

Module-3: Planning: Definition, Nature, Purpose, Importance, Types of planning, and Types of plan.

Module-4: Organizing: Definition, Basic concepts of organization, Organizing process and its importance, Formal & Informal organization, Tall & Flat structure, Span of control.

Module-5: Staffing: Recruitment, Selection, Placement, Training & Development, Performance Appraisal.

Module-6 : Directing: Meaning Leadership- Styles and Theories, Motivation, Maslow theory of motivation, Communication process.

Module-7 : Controlling : Nature, Purpose, Basic Elements of Control and Process.

Books Recommended

1. Elements of Management ó Koontz and O'Donnell
2. Principles and Practices of Management ó L.M.Prasad
3. Management Today ó principles and Practices by Gene Burton & Manab Thakur
4. Management by Stoner & Freeman.

INDUSTRIAL ORGANISATION AND MANAGEMENT PE5009 (3 Credits)

Module 1

Business organization

Legal forms of business organization-single ownership, partnership and joint stock company and their formation

Share & their classes, rights and privileges, borrowing of capital through mortgages, debentures, unsecured notes and bonds, ownership and operation of a joint stock company through board of directors

Module 2

Principles of Management

Elements of managerial functions-planning organizing, staffing, direction and control, authority and responsibility, leadership and principles of co-ordination, uses of committee as a management tool, span of control

Module 3

Organization Structure

Line, line and staff, Functional, Lateral (Fayol's Bridge) and Metric organization structures, organization chart and organization manual

Module 4

Budget and Budgetary control

Functions, types and preparation of budgets, working of budgetary control

Module 5

Marketing Management

Functions of sales and marketing, channels of distribution, Sales promotion, advertising and publicity, product packaging and product printing

Module 6

Human Resource Development

Main functions of personnel department, morale, motivation and behavior, handling of Industrial grievances through joint consultation and collective bargaining, workers participation in management.

Module 7

Industrial legislations

Factories act, trade unions, trade dispute act, workmen's compensation act, payment of wages act.

Text Books

1. **Industrial Organization and Management** Riggs, et al.
2. **Industrial Engineering and Management** O P Khanna

References

1. **Principles of Management** Koonze & Donell

ORGANIZATIONAL BEHAVIOR (MSH 1125)

Module 1: Introduction to OB

Meaning and importance of study of OB; Its cross cultural implications

Module 2: Behavior and its Causes

Introduction to personality, perception, learning and attitude

Module 3: Motivation

Importance, Theories of motivation - Maslow's Hierarchy of Needs, Alderfer's ERG, Herzberg's Two Factor Theory and Vroom's Expectancy Theory; motivational tools

Module 4: Group behavior and team dynamics

Formal and informal groups, conflict ó types, sources, negotiation

Module 5: Communication and Feedback

Interpersonal communication, Importance and hindrances; Introduction to TA

Module 6: Organizational change and Development

Introduction to Organizational Change; Concept of OD, Phases of OD and OD interventions

Module 7: Morale and Job Satisfaction

Introduction, Determinants and outcome of morale and job satisfaction

Text Books:

a) Robbins, S.P. & Sanghi Organizational Behaviour (Prentice Hall India: New Delhi)

Reference Books:

a) Luthans, F. Organizational Behaviour (McGraw Hill: New Delhi)

b) Newstrom, J.W. and Davis, K. Organizational Behaviour: Human Behaviour at Work
(Tata
McGraw Hill: New Delhi)

PROJECT ENGINEERING (3 Credits)

- Module 1** The scope of project, Characteristics of a project, Stages of a project, Project constraints, Project Management Structures.
- Module 2** Responsibilities of project manager, Project Productivity, The anatomy of a project.
- Module 3** Environmental considerations in project evaluation, Main issues and secondary issues in Feasibility study, Social cost benefit analysis, Commissioning, Evaluation of competing projects.
- Module 4** Budgetary aspects and considerations of a project, Industrial/Engineering projects (Mining, Drilling, Refinery etc.), R & D projects, Turnkey projects.
- Module 5** Networking Modeling of a project, Deterministic & Probabilistic activity network, Line of balance, Time- Cost Trade-off in a project, Mega projects.
- Module 6** Project Scheduling Techniques, PERT, CPM Models.
- Module 7** Project Monitoring Techniques, Performance and cost evaluation (PACE), Project Staffing Requirements, Resource Leveling, Project Documentation, Computer application in Project Engineering.

Text Books:

1. Project Management by Prasanna and Chandra, Tata McGraw Hill.
2. Elements of Project Management by Pete Spinner, Prentice Hall, USA.

Reference Books:

1. Production and Operation Management by Alan Muhlemann, John Oakland and Keith Lockyer, MacMillan India Ltd.
2. A course in PERT and CPM by R. C. Gupta, Dhanpat Rai Publications(P) Ltd, Delhi.
3. Industrial Engineering and Management by O. P. Khanna, Dhanpat Rai & Sons.
4. Production and Operation Management by S. N. Chary, Tata McGraw Hill.

ENGINEERING ECONOMY (3Credits)

Module 1

Accounting of Business Transactions

Accounting principles, journal and ledger entries, balance sheet, profit and loss statement, ratio analysis

Module 2

Cost and Cost Analysis

Cost structure, methods of allocating overhead costs, standard cost, concept of opportunity cost, sunk cost, fixed cost and variable cost

Module 3

Break Even Analysis

Drawing of brake even charts, effect of different variable on break even point, cost comparison of two or three alternatives

Module 4

Time Value of Money

Single sum and series of cash flow, uniform and gradient series, multiple compounding periods in a year, continuous compounding, bonds

Module 5

Comparison of Alternative Proposals

Bases of comparison- present worth amount, annual equivalent amount, future worth amount, rate return, defining mutually exclusive alternatives, decision criteria for selection of investment proposals, comparison of alternatives, with unequal service life, sensitivity analysis

Module 6

Replacement Analysis

Reasons for replacement, evaluation of replacement involving excessive maintenance cost, decline in efficiency inadequacy and obsolescence

Module 7

Depreciation and Decision Making Under Uncertainty

Methods of depreciation and their comparison, decision making on the basis of expected value decision tree in the evaluation of alternatives

Text Books:

1. **Modern Accountancy** I.M. Pandey
2. **Engineering Economy** E.P.Degarmo

IPR (INTELLECTUAL PROPERTY RIGHT) (MSH 1149)

Scope and objective of the course:

Course on Intellectual Property Rights (IPR) intends to expose engineering and science streams students to contemporary national and global sociopolitical, economic, legal environment, Indian public administration system, creation of IPR rights, benefits, research, development and management of IP and other IPR related issues. Case studies and information available on websites and Internet will also be used as part of teaching material.

Course Syllabus (in modular form):

Module-1 (1 week)

Definitions and functions of the state. Rights and duties - fundamental rights (UN charter 1948). Forms of governments e.g. anarchism, capitalism, communisms, theocratic, democratic etc., meaning, merits and demerits

Module-2 (1 week)

Indian parliamentary democratic set up: organization of ministry of government of India, administration at work, public corporations and institutions in India, local administration in India both urban local administration and rural local administration.

Module –3 (1 week)

Introduction to law and Indian legal system : Basic terms and concepts of law, judicial structure and common law principles applicable to India. Concept of free trade, regional trade treaties like SAFTA, NAFTA, SAARC and WTO, G20, WIPO.

Module-4 (2 weeks)

Intellectual property: Introduction to Patents, Design, Copyrights, Trademarks, geographical indicators, protection of new plant varieties, IC layout designs. IPR governance: Indian patent offices, NRDC. Funding agencies and public sector research organizations: DST, ISRO, AEC, DRDO, UGC, CSIR.

Module-5 (2 weeks)

Patent law fundamentals: Conditions to patenting, what can and cannot be patented, concepts of novelty, non obviousness, utility, anticipation, prior art, drafting of patent particularly claims, application procedures, revocation of patents.

Module -6 (2 week)

Licensing and litigations: scope of licenses, types of licenses, monetary considerations, valuation and royalty determination, sublicensing, general principles of patent litigation including exploration of procedures, forum and jurisdictions. Case studies.

Module –7 (2 weeks)

IP management : Harvesting inventions, open and close door models, maintaining the invention records, employer/ employee law related to ownership and proprietary information, patent search, criteria and procedure to decide whether to patent or to keep trade secrets,

public disclosure/domain problems, outside inventor problems and issues related to commercialization of IP. Career opportunities in IP.

Reference Text Books :

Political theory, Eddy Asirvatham and KK Mishra, S Chand and co.

Public Administration in Theory And Practice , Dr. M. P. Sharma & Dr. B. L. Sadana Kitab Mahal Books

Demystifying Intellectual Property Rights, N R Subbaram, Butterworth Wadwa, lexis Nexis

Law relating to intellectual property- Vol. 1 and 2, Dr Raghubir Singh Vice Chairman, Intellectual property Appellate Board, Universal law publishing Co. Pvt Ltd. (Email:unilaw@vsnl.com)

The patent Act 1970 ó Bare act with short notes, Universal law publishing Co. Pvt ltd.