

BHARATHIAR UNIVERSITY: COIMBATORE – 641 046  
SCHOOL OF DISTANCE EDUCATION (SDE)  
for the SDE students admitted during the academic year 2011-12 & Onwards

**M.B.A - Technology Management**  
(Annual Pattern)

<b><u>Paper</u></b>	<b><u>Name of the Subject</u></b>	<b><u>Marks</u></b>
<b><u>First Year</u></b>		
1.1	Principles of Management and Organisational Behaviour	100
1.2	Managerial Economics	100
1.3	Accounting and Finance for Managers	100
1.4	Marketing Management	100
1.5	Human Resource Management	100
1.6	Quantitative Techniques for Management	100
1.7	Research Methods for Management	100
1.8	Corporate Communication	100
1.9	Operations Management	100
<b><u>Second Year</u></b>		
2.1	Total Quality Management	100
2.2	Production Planning and Control	100
2.3	Technology Acquisitions & Diffusion	100
2.4	Technology Finance	100
2.5	Goal Programming in Management	100
2.6	Technology Forecasting	100
2.7	R & D Management	100
2.8	Business Environment and Ethics	100
2.9	Strategic Management	100
<b>Total</b>		<b>1800</b>

## **1.1.Principles of Management and Organizational Behaviour**

### **UNIT I**

Management : Science, Theory and Practice - The Evolution of Management Thought and the Patterns of Management Analysis - Management and Society : Social Responsibility and Ethics - Global and Comparative Management - The Basis of Global Management – Functions of Management-The Nature and Purpose of Planning - Objectives - Strategies, Policies and Planning Premises - Decision Making - Global Planning.

### **UNIT II**

The Nature of Organizing - Organizational Structure : Departmentation - Line/Staff Authority and Decentralization - Effective Organizing and Organizational Culture - Global Organizing. Co-ordination functions in Organisation - Human Factors and Motivation - Leadership - Committees and group Decision Making - Communication - Global Leading.

### **UNIT III**

The System and Process of Controlling - Control Techniques and Information Technology - Global Controlling and Global Challenges – Direction Function – Significance.

### **UNIT IV**

Organisational Behaviour : History - evolution, Challenges & opportunities, contributing disciplines, management functions and relevance to Organisation Behaviour. Organizational Behaviour responses to Global and Cultural diversity.

Personality - Determinents, structure, behaviour, assessment, psycho-analytical social learning, job-fit, trait theories.

Emotions and Emotional Intelligence as a managerial tool. Attitudes - relationship with behaviour, sources, types, consistency, work attitudes, values - importance, sources, types, ethics and types of management ethics. Perception - Process, Selection, Organisation Errors, Managerial implications of perception.Learning - classical, operant and social cognitive approaches. Implications of learning on managerial performance.

### **UNIT V**

Stress - Nature, sources, Effects, influence of personality, managing stress- Conflict - Management, Levels, Sources, bases, conflict resolution strategies, negotiation. Foundations of group behaviour : team decision making. Issues in Managing teams.

Organisational change - Managing planned change. Resistance to change - Approaches to managing organisational change - Organisational Development - values - interventions, change management- Organisational culture - Dynamics, role and types of culture and corporate culture.

### **REFERENCE**

1. Koontz & Weirich, Essentials of Management, Tata McGraw Hill Publishing Company, New Delhi.
2. Stoner, Freeman & Gilbert, Management, PHI, 6<sup>th</sup> Edition.
3. Robbins.S.P., Fundamentals of Management, Pearson, 2003.
4. Robbins.S. Organisational Behaviour, X edn., Prentice-Hall, India.
5. Umasekaran, Organisational Behaviour.
6. VSP Rao, V Hari Krishna – Management: Text and Cases, Excel Books, I Edition, 2004

## **1.2. Managerial Economics**

### **UNIT I**

Managerial Economics - meaning, nature and scope - Managerial Economics and business decision making - Role of Managerial Economist - Fundamental concepts of Managerial Economics- Demand Analysis - meaning, determinants and types of demand - Elasticity of demand.

### **UNIT II**

Supply meaning and determinants - production decisions - production functions - Isoquants, Expansion path - Cobb-Douglas function.

Cost concepts - cost - output relationship - Economies and diseconomies of scale - cost functions.

### **UNIT III**

Market structure - characteristics - Pricing and output decisions - methods of pricing - differential pricing - Government intervention and pricing.

### **UNIT IV**

Profit - Meaning and nature - Profit policies - Profit planning and forecasting - Cost volume profit analysis - Investment analysis.

### **UNIT V**

National Income - Business cycle - inflation and deflation - balance of payments - Monetary and Fiscal Policies

### **REFERENCE**

1. Joel Dean - Managerial Economics, Prentice Hall/Pearson.
2. Rangarajan - Principles of Macro Economics, Tata McGraw Hill.
3. Athmanand.R., Managerial Economics, Excel, New Delhi, 2002.
4. P.L.Mehta, Managerial Economics, S.Chand and Sons Company Ltd., New Delhi, 2004.
5. Peterson Lewis, Managerial Economics, Prentice Hall of India, New Delhi, 2002.

## **1.3. Accounting and Finance for Managers**

### **UNIT I**

Financial Accounting - Definition - Accounting Principles - Concepts and conventions - Trial Balance – Final Accounts (Problems) - Depreciation Methods-Straight line method, Written down value method.

### **UNIT II**

Financial Statement Analysis - Objectives - Techniques of Financial Statement Analysis: Accounting Ratios: construction of balance sheet using ratios (problems)-Dupont analysis. Fund Flow Statement - Statement of Changes in Working Capital - Preparation of Fund Flow Statement - Cash Flow Statement Analysis- Distinction between Fund Flow and Cash Flow Statement. Problems

**UNIT III**

Cost Accounting - Meaning - Distinction between Financial Accounting and Cost Accounting - Cost Terminology: Cost, Cost Centre, Cost Unit - Elements of Cost - Cost Sheet - Problems. Budget, Budgeting, and Budgeting Control - Types of Budgets - Preparation of Flexible and fixed Budgets, master budget and Cash Budget - Problems -Zero Base Budgeting.

Marginal Costing - Definition - distinction between marginal costing and absorption costing - Break even point Analysis - Contribution, p/v Ratio, margin of safety - Decision making under marginal costing system-key factor analysis, make or buy decisions, export decision, sales mix decision-Problems

**UNIT IV**

Objectives and functions of Financial Management - Role of Financial Management in the organisation - Risk-Return relationship- Time value of money concepts - Indian Financial system - Legal, Regulatory and tax framework. Sources of Long term finance - Features of Capital market development in India - Role of SEBI in Capital Issues. Capital Budgeting - methods of appraisal - Conflict in criteria for evaluation - Capital Rationing - Problems - Risk analysis in Capital Budgeting.

**UNIT V**

Cost of Capital - Computation for each source of finance and weighted average cost of capital - EBIT -EPS Analysis - Operating Leverage - Financial Leverage - problems. Capital Structure Theories - Dividend Policies - Types of Divided Policy. Working Capital Management - Definition and Objectives - Working Capital Policies - Factors affecting Working Capital requirements - Forecasting Working Capital requirements (problems) - Cash Management - Receivables Management and - Inventory Management - Working Capital Financing - Sources of Working Capital and Implications of various Committee Reports.

**REFERENCE**

1. Advanced Accountancy - R.L.Gupta and Radhaswamy
2. Management Accounting - Khan and Jain
3. Management Accounting - S.N.Maheswari
4. Prasanna Chandra, “Financial Management – Theory and Practice”, Tata McGraw Hill, New Delhi (1994).
5. I.M.Pandey, “Financial Management”, Vikas Publishing, New Delhi.

Note : 80% of the questions shall be theory based  
20% of the questions shall be problems.

## **1.4. Marketing Management**

### **UNIT I**

Marketing Concepts and Tasks, Defining and delivering customer value and satisfaction - Value chain - Delivery network, Marketing environment, Adapting marketing to new liberalised economy - Digitalisation, Customisation, Changing marketing practices, e-business - setting up websites; Marketing Information System, Strategic marketing planning and organization.

### **UNIT II**

Buyer Behaviour, Market Segmentation and Targeting, Positioning and differentiation strategies, Product life cycle strategies, New product development, Product Mix and Product line decisions, Branding and Packaging, Price setting - objectives, factors and methods, Price adapting policies, Initiating and responding to price changes.

### **UNIT III**

Marketing channel system - Functions and flows; Channel design, Channel management - Selection, Training, Motivation and evaluation of channel members; Channel dynamics - VMS, HMS, MMS; Market logistics decisions.

### **UNIT IV**

Integrated marketing communication process and Mix; Advertising, Sales promotion and Public relation decisions. Direct marketing - Growth, Benefits and Channels; Telemarketing; Salesforce objectives, structure, size and compensation.

### **UNIT V**

Identifying and analysing competitors, Designing competitive strategies for leaders, challengers, followers and nichers : Customer Relationship marketing - Customer database, Data warehousing and mining. Attracting and retaining customers, Customerism in India, Controlling of marketing efforts.

Global Target market selection, standardization Vs adoption, Product, Pricing, Distribution and Promotional Policy.

### ***REFERENCE***

1. Marketing Management - Philip Kotler - Pearson Education/PHI, 2003.
2. Marketing Management - Rajan Saxena - Tata McGraw Hill, 2002.
3. Marketing Management - Ramasamy & Namakumari - Macmillan India, 2002.
4. Case and Simulations in Marketing - Ramphal and Gupta - Golgatiya, Delhi.
5. Marketing Management – S.Jayachandran - TMH, 2003.

## **1.5. Human Resource Management**

### **UNIT I: Human Resource Function**

Human Resource Philosophy – Changing environments of HRM – Strategic human resource management – Using HRM to attain competitive advantage – Trends in HRM – Organisation of HR departments – Line and staff functions – Role of HR Managers.

### **UNIT II: Recruitment & Placement**

Job analysis : Methods - IT and computerised skill inventory - Writing job specification - HR and the responsive organisation.

Recruitment and selection process : Employment planning and forecasting - Building employee commitment : Promotion from within - Sources, Developing and Using application forms - IT and recruiting on the internet.

Employee Testing & selection : Selection process, basic testing concepts, types of test, work samples & simulation, selection techniques, interview, common interviewing mistakes, Designing & conducting the effective interview, small business applications, computer aided interview.

### **UNIT III: Training & Development**

Orientation & Training: Orienting the employees, the training process, need analysis, Training techniques, special purpose training, Training via the internet.

Developing Managers: Management Development - The responsive managers - On-the-job and off-the-job Development techniques using HR to build a responsive organisation. Management Developments and CD-Roms - Key factor for success.

Performance appraisal: Methods - Problem and solutions - MBO approach - The appraisal interviews - Performance appraisal in practice.

Managing careers: Career planning and development - Managing promotions and transfers.

### **UNIT IV: Compensation & Managing Quality**

Establishing Pay plans : Basics of compensation - factors determining pay rate - Current trends in compensation - Job evaluation - pricing managerial and professional jobs - Computerised job evaluation.

Pay for performance and Financial incentives : Money and motivation - incentives for operations employees and executives - Organisation wide incentive plans - Practices in Indian organisations.

Benefits and services : Statutory benefits - non-statutory (voluntary) benefits - Insurance benefits - retirement benefits and other welfare measures to build employee commitment.

### **UNIT V: Labour relations and employee security**

Industrial relation and collective bargaining : Trade unions - Collective bargaining - future of trade unionism. Discipline administration - grievances handling - managing dismissals and separation.

Labour Welfare : Importance & Implications of labour legislations - Employee health - Auditing HR functions, Future of HRM function.

### **REFERENCE**

1. Gary Dessler, "Human Resource Management", Seventh edition, Prentice-Hall of India P.Ltd., Pearson.
2. David A. DeCenzo & Stephen P.Robbins, Personnel/Human Resource Management, Third edition, PHI/Pearson.

3. VSP Rao, Human Resource Management: Text and cases, First edition, Excel Books, New Delhi - 2000.
4. Dr. R.Venkatapathy & Assissi Menacheri, Industrial Relations & Labour Welfare, Adithya Publications, CBE, 2001.
5. Robert L.Gibson and Marianne H.Mitchell, Introduction to Counseling and Guidance, VI edition, PHI, 2005.

### **1.6. Quantitative Techniques for Management**

#### **UNIT I**

QT – Introduction – Measures of Central Tendency – Mean, Median, Mode.

Mathematical Models – deterministic and probabilistic – simple business examples – OR and optimization models – Linear Programming – formulation – graphical solution –simplex – solution.

#### **UNIT II**

Transportation model – Initial Basic Feasible solutions – optimum solution for non – degeneracy and degeneracy model – Trans-shipment Model – Assignment Model – Travelling Salesmen problem.

#### **UNIT III**

Network Model – networking – CPM – critical path – Time estimates – critical path – crashing, Resource levelling, Resources planning. Waiting Line Model – Structure of model – M/M/1 for infinite population.

#### **UNIT IV**

Probability – definitions – addition and multiplication Rules (only statements) – simple business application problems – probability distribution – expected value concept – theoretical probability distributions – Binomial, Poisson and Normal – Simple problems applied to business.

#### **UNIT V**

Inventory Models – Deterministic – EOQ – EOQ with Price Breaks – Probabilistic Inventory Models - Probabilistic EOQ model – Game theory-zero sum games: Arithmetic and Graphical Method.

Simulation – types of simulation – Monte Carlo simulation – simulation problems. Decision Theory – Pay off tables – decision criteria – decision trees.

#### **REFERENCE**

1. Statistics for Management – Richard L Levin & Daid S Rubin
2. Statistical Methods – S P Gupta
3. Operations Research – Kanti Swarup, Gupta And Man Mohan
4. Operations Research – Dr. J.K. Sharma Macmillan Indian Ltd.
5. U.K. Srivastava, G.V. Shenoy, S. C. Sharma, “Quantitative Techniques for Managerial Decision”, Second Edition, Prentice Hall of India

Note : 80% of the questions shall be theory based  
20% of the questions shall be problems.

## **1.7. Research Methods for Management.**

### **UNIT I**

Research - meaning - scope and significance - Types of research - Research Process - Characteristics of good research - Scientific method - Problems in research - Identifying research problem – concepts, constructs and theoretical framework.

### **UNIT II**

Hypothesis:- meaning - sources - Types - formulation Research design - Types - case study - features of good design - measurement - meaning - need Errors in measurement - Tests of sound measurement Techniques of measurement - scaling Techniques - meaning - Types of scales - scale construction techniques.

### **UNIT III**

Sampling design - meaning - concepts - steps in sampling - criteria for good sample design - Types of sample designs - Probability and non-probability samples. Data collection:- Types of data - sources - Tools for data collection methods of data collection - constructing questionnaire - Pilot study - case study - Data processing:- coding - editing - and tabulation of data - Data analysis.

### **UNIT IV**

Test of Significance:- Assumptions about parametric and non-parametric tests. Parametric Test - T test, F Test and Z test - Non Parametric Test - U Test, Kruskal Wallis, sign test. Multivariate analysis-factor, cluster, MDS, Discriminant ananlysis. (NO Problems). SPSS and its applications.

### **UNIT V**

Interpretation - meaning - Techniques of interpretation - Report writing:- Significance - Report writing:- Steps in report writing - Layout of report - Types of reports - Oral presentation - executive summary - mechanics of writing research report - Precautions for writing report - Norms for using Tables, charts and diagrams - Appendix:- norms for using Index and Bibliography.

### **REFERENCE**

1. Rao K.V.Research methods for management and commerce - sterling
2. Zikmund, Business Research Methods
3. Kothari C.R.- Research methodology
4. Donald R.Cooper and Pamela S.Schindler - Business Research Methods - Tata McGraw Hill.
5. Uma Sekaran, Research Methods for Business, Wiley Publications.

Note : 80% of the questions shall be theory based  
20% of the questions shall be problems.



## **1.8. CORPORATE COMMUNICATION**

### **Unit 1:**

Communication basics – Business Communication – components – Types – formal communication network – Work team communication – variables – goal – conflict resolution – non – verbal communication – Cross cultural communication – Business meetings – Business Etiquette.

### **Unit 2:**

Understanding Corporate Communication – Employee Communication – Managing Government Relations – Writing for Media and Media Relations

### **Unit 3:**

Corporate Communication in Brand Promotion – Financial Communication – Crises Communication.

### **Unit 4:**

Report writing: Characterizing & business reports – Types and forms & reports – Project proposals – collection of data – tables constitution – charts – writing the report – documenting the sources – proof reading.

### **Unit 5:**

Business Presentation: Written and oral presentation – work – team presentation – Delivering the business presentation visual aids – slides – electronic presentation – hand-outs – delivering the presentation – career planning – preparing Resume – job applications – preparation for a job interview – employment interviews – follow-up.

### **References:**

1. Scot Ober, Contemporary business communication, fifth edition, biztantra.
2. Lesiler & Flat lay, Basic Business communication. Tata Mc Graw Hill.

## **1.9. OPERATIONS MANAGEMENT**

**UNIT I :** Operations Management – Meaning – Importance – historical contributions – System view of OM - Operation strategy and competitiveness - Functions of OM – types of production systems

**UNIT II :** Product design and process selection – Evaluation and Selection of appropriate Production and Operations technology. Product Design and process selection. Types of layout – analysis and selection of layout – Product and / or Process layout, Cellular, Lean and Agile manufacturing systems – Computer Integrated Manufacturing Systems - Assembly line balancing.

**UNIT III :** Production planning and control – meaning – functions – aggregate planning – master production schedule (MPS) – Material requirement planning (MRP) – BOM – Capacity requirement planning (CRP) – Techniques – problems in MRP and CRP – an introduction to MRP II and ERP – Business Process Re-engineering - Total Productive Maintenance (TPM)

**UNIT IV** : Materials management – functions – material planning and budgeting – Value Analysis - purchase functions and procedure - inventory control – types of inventory – safety stock – order point – service level – inventory control systems – perpetual – periodic – JIT – KANBAN.

**UNIT V** : Total Quality Management Concept - Statistical Quality Control for Acceptance Sampling and Process Control – Concepts of O.C.C. Curve – Use of the O.C. Curve – Concept of Type I and Type II error – Quality movement – Quality circles — ISO Quality Certifications and types – Quality assurance – Six Sigma concept.

**References :**

1. Production and Operations Management – Everest E Adam & Ebert – PHI – publication forth edition.
2. Operations Management (Theory and Problems ) – Joseph G Monks – McGraw Hill Intl.
3. Production and Operations Management – S N Chary – TMH Publications
4. Production and Operations Management – Pannerselvam, PHI
5. Lee J. Krajewski and Larry P. Ritzman, “Operations Management: Process and value Chains”, 7th Edition, PHI, 2007
6. Hunawalla and Patil – production and Operations Management, Himalaya.
7. Modern Production and operations management – E.S Buffa.
8. Lee J. Krajewski and Larry P. Ritzman, “ Operations Management: Strategy and Analysis”, Addison Wesley.
9. Chase, Aquilano & Jacobs “Production and Operations Management”, Tata McGraw Hill.

Questions : 40% of the questions shall be problems  
60% of the questions shall be theory based.

**II Year**

**2.1. Total Quality Management**

**UNIT – I**

Total quality management – concepts – quality management in retrospect – evaluation of quality approaches – Basic elements of TQM. Accelerating use of TQM – The continuous improvement process – International trend in continuous improvement process – Service quality Vs Product Quality. Total Quality :- Value & Differential advantage

**UNIT – II**

Pillars of Total quality management – Strategic thinking and planning, the starting point for total quality – Total quality policy and deployment guidelines – Total quality approaches – Leadership for TQM. Attitude & involvement of top management. Organizational implications.

**UNIT – III**

Total quality models – Enablers for total quality – quality responsibilities – achieving total commitment to quality – Information & customer – Strategic information system – Strategic quality management.

**UNIT – IV**

Quality education and training quality process, Quality system – Quality measurement system including the tools of TQM – Quality cost – Quality planning – Quality information feedback – Internal customer conflict – customer retention and problems.

**UNIT – V**

Strategic choice of markets and customers maintaining competitive advantage – Designing process and products for Quality – TQM and ISO 9000 – Auditing for TQM – TQM in services – TQM in education – The leverage of productivity and Quality – Pitfalls in operationalising Total Quality.

**REFERENCES:**

1. Total quality – Bharat Wakhlu
2. Total quality Management – Sundararaju
3. Five Pillars of TQM – Bill Creech
4. Total quality management – Joseph and Berk
5. TQM Strategies and Techniques – Stephen George
6. TQM in service sector – R.P. Mohanty and R.R. Lakhe

**2.2. Production Planning and Control****UNIT-I**

Role and Importance of PPC in various manufacturing systems - Functions of PPC - Capacity Planning - Estimating - Routing - Loading - Dispatching – Expediting

**UNIT-II**

Aggregate Planning - Rough Cut Planning - Capacity Planning - Shop Floor Planning - Gantt Charts - Control and Feedback systems

**UNIT-III**

Implementation of PPC in continuous flow system - Line Balancing - Heuristic - Intermittent Production System - Job Shop Scheduling - Use of Linear Programming models and Scheduling Algorithms

**UNIT-IV**

Flexible Manufacturing Systems - Group Technology - Cellular Planning - Robotics - CAD CAM SIM

**UNIT-V**

Role of computers in PPC

**Reference Books**

1. Manufacturing Planning & Control - Vollmann
2. Production - Planning, Control & Integration - Sipper
3. Production Planning & Inventory Control - Narsimhan
4. Production Planning & Control - L.C.Jhamb
5. Production and Operations Management - Chase

## **2.3. Technology Acquisitions & Diffusion**

### **UNIT-I**

Introduction to technology management: Concept and meaning of technology, Evolution and growth of technology, role and significance of management of technology, Impact of technology on society and business, Forms of technology: process technology and product technology.

### **UNIT-II**

Competitive advantages through new technologies: product development – from scientific breakthrough to marketable product – Role of Government in Technology Development. Linkage between technology, development and competition, Managing research and development (R&D), Managing Intellectual Property.

### **UNIT-III**

Technological Forecasting: Exploratory: Intuitive, Extrapolation, Growth Curves, Technology Monitoring, Normative: Relevance Tree, Morphological Analysis, Mission Flow Diagram

### **UNIT-IV**

Technology Assessment: Technology Choice, Technological Leadership and Follower ship, Technology Acquisition. Meaning of Innovation and creativity, innovation management

### **UNIT-V**

Technology strategy: concept, types, key principles, framework for formulating technology strategy, Technology forecasting: techniques and application-. Technology diffusion and absorption: Rate of Diffusion; Innovation Time and Innovation Cost, Speed of Diffusion. Project management in adoption and implementation of new technologies.

### **Reference Books**

1. Strategic Technology Management - Betz. F. - McGraw-Hill.
2. Management of Technology - Tarek Khalli -, McGraw-Hill.
3. Strategic Management of Technological Innovation – Schilling McGraw-Hill, 2nd edition.
4. Managing Technology and Innovation for Competitive Advantage - V K Narayanan - Pearson Education Asia
5. Strategic Management of Technology & Innovation - Burgelman, R.A., M.A. Madique, and S.C. Wheelwright -. Irwin.
6. Handbook Of Technology Management - Gaynor - McGraw Hill
7. Managing New Technology Development - Souder, W.C. and C.M. Crawford - McGraw-Hill.
8. Managing Technological Innovation - Twiss, B. -. Pitman.
9. Bringing New technology To Market - Kathleen R Allen - Prentice Hall India
10. Management Of New Technologies For Global Competitiveness — Christian N Madu - Jaico Publishing House

## **2.4. Technology Finance**

**Unit I:** Technology Finance – Meaning – Definition – Scope – Usefulness of Technology Finance in enabling the managers to take effective financial decisions.

**Unit II:** Accounting aspects specific to R&D organization to under accounting treatment of technology related payments.

**Unit III:** Costing for R&D activities: Costing of technologies, activity based costing, target costing and life cycle costing.

**Unit IV:** Financing of technology payments - Venture capital – Hire purchase and leasing – Project financing aspects

**Unit V:** Financial appraisal of new technology – Technology Obsolescence.

### **Suggested Readings:**

1. Bhalla, V.K. Financial Management and Policy 2nd, New Delhi, Anmol, 1998.
2. S. Shivaramu International Business Environment and Management, 5th ed., New Delhi, Anmol, 2001.
3. Chandra, Prasanna, Projects: Planning, Analysis, Selection, Implementation and Review, Tata McGraw Hill, New Delhi, 1998.
4. Naisbitt, John, High Tech High Touch: Broadways Books, New York, 1998.
5. Shtub, A. J.F. Bard and S. Globerson Project Management Prentice Hall, New Jersey, 1994.

## **2.5. Goal Programming in Management**

**Unit I:** Goal Programming - Basic Concept Model Formulation, Graphical and Simplex Method.

**Unit II:** Integer Goal Programming, Post-Optimal Sensitivity Analysis; Parametric Goal Programming.

**Unit III:** Goal Programming under Uncertainty; Application of Goal Programming in Functional Areas of Management; Implementation of Goal Programming.

**Unit IV:** Introduction to some Application Software such as - QSB, Micro Manager and LIGO.

**Unit V:** Goal programming for decision analysis – Goal programming and extensions.

**Suggested Readings:**

1. Cook, Thomas M and Rursell, Robert A. Introduction to management Science. 3rd ed. Englewood Cliffs, New Jersey, Prentice Hall Inc., 1985.
2. Eppen, G D. etc. Quantitative Concepts for Management Englewood Cliffs, New Jersey, Prentice Hall Inc., 1994.
3. Ignizio, J P. Goal Programming and Extensions. Lexington, Lexington Books, 1976.
4. Llier, Y. Management Goals and Accounting for Control. Amsterdam, North Holland, 1965.
5. Lee S M. Goal Programming for Decision Analysis. Philadelphia, Auerbach, 1971.

**2.6. Technology Forecasting**

**Unit I:** Technology Forecasting – Meaning and Definition – Merits and demerits – Usefulness of technology forecasting in recent times

**Unit II:** Various qualitative and quantitative technology forecasting methods with their relative merits and demerits. Exploratory Methods of Technology Forecasting

**Unit III:** Delphi Technique; Cross Impact Matrix; Curve Fitting; Morphological Methods. Trends Extrapolation; Regression Analysis; Econometric Models; Normative Methods of TF;

**Unit IV:** OR Models and Simulation; Networks Techniques; Relevance Trees; System Dynamics; Qualitative Methods; Futurology; Activities of TIFAC

**Unit V:** Forecasting Technology for Planning Decisions - Practical Technological Forecasting

**Suggested Readings**

1. Ayres, Robert U: Technology Forecasting and Long Range Planning.
2. Bowonder, B and Miyake, T., 1990. Technological Forecasting: Methodologies and Case Studies (Report III) TIFAC, New Delhi, 1990.
3. Bright, James R, Schoeman, Milton, E.F., 1973, A Guide to Practical Technological Forecasting, Prentice Hall.
4. Jones, H and Twiss, BC., 1979. Forecasting Technology for Planning Decisions. Mac Milan, London.
5. Makridakis, Spyros G and et. al; Forecasting, Methods and Applications.Wiley, 1983.

**2.7. R&D Management**

**Unit I:** R&D and Economic Development – R &D as a corporate function – R&D Resources – Leadership and R&D Management – R&D Project Management.

**Unit II:** Survey of Emerging Technologies; Environment Analysis; Project Proposals; R&D Management: Management of knowledge workers, R & D environment; Management of High value Instruments Test Facilities, Workshops etc.

**Unit III:** Identification of partners/contractors for R&D Projects; R & D Budget; Technology Scanning; Procurement Procedure; Material Management Policy; Discard Policies and Procedure; Contract Management

**Unit IV:** Vendor Development; Procurement and Utilization of Capital Equipment; Test Equipment; Test Facilities; Sharing of resources with other Institution - Sponsored Resources; Development Tools.

**Unit V:** Design Methodologies; CAD / CAM / CIM; Design for Manufacturing; Design for Maintenance.

### **Suggested Readings:**

1. Cetron, Marvin J and Goldhar, Joel D (ed.): The Science of Managing Organised Technology. NY. Gordon & Research, Science Pub., 1970.
2. Jain, R K. and Triandis, H C. Management of Research and Development Organisations; Managing the Unmanageable. N.Y., Wiley, 1990.
3. McLeod, Tom: The Management of Research, Development and Design in Industry. England, Gower, 1988.
4. Meredith, Jack R and Mantel, Samuel, J: Project Management a Managerial Approach. N.Y., Wiley, 1985.
5. NTIS: The Management of Government R & D Projects; the effects of the contractual requirement to use specific management techniques. Texas, University, of Texas at Austin, 1972.

## **2.8. BUSINESS ENVIRONMENT AND ETHICS**

**Objectives:** To equip the students with the knowledge of emerging trends in social, political, ethical and legal aspects affecting business decisions.

**UNIT 1 :-** Business environment - The concept and significance - constituents of business environment - Business and society , Business & ethics - Social responsibility - Environmental pollution and control. Business and culture- Business and Government - Political system and its influence on business - Indian constitution - Directive Principles of State Policy.

**UNIT II:-** Managing Ethics- meaning and types – framework of organizational theories and sources – ethics across culture – factors influencing business ethics – ethical decision making – ethical values and stakeholders- ethics and profit. Corporate Governance – structure of Boards- reforms in Boards – compensation issues – ethical leadership.

**UNIT III :-** Globalisation of the economy – trends and issues, Politics and environment, MNCs and Government relationships- Introduction to GATT and WTO.

**UNIT IV:-** Fiscal policy - central finances and new fiscal policy - Direct and indirect Tax structure, VAT, MODVAT - Service Tax problems and reforms -Expenditure Tax - Public debts & deficit financing

**UNIT V:-** Legal environment of business – Monopolies – Company Law, Competition Act 2002. Foreign Exchange Management Act- Securities and exchange board of India Act - Customs and Central Excise Act - Central and State sales Tax - Consumer protection Act Patents Act.

### **REFERENCES:**

Adhikari.m - Economic environment of Management  
 Francis cherunnilam - Business environment  
 Pruti s . economic & managerial environment in India  
 Davis & keith William c . frederik - business and society  
 Amarchand d - Government and business  
 Mankard \_ Business Economics  
 A.N Agarwal \_ Indian economy  
 Steiner and Steiner – Business Ethics – Mc-Graw Hill  
 Raj Agarwal – Business Environment – Excel Books.

## **2.9. STRATEGIC MANAGEMENT**

**Objectives:** To help the students to learn the process of strategic decision making, implementation and evaluation of corporate policies

### **UNIT I**

Corporate strategic planning - Mission - Vision of the firm - Development, maintenance and the role of leader - Hierarchical levels of planning - strategic planning process. Strategic management Practice in India, Family run corporates.

### **UNIT II**

#### **Environmental Analysis & Internal Analysis of Firm:**

General environment scanning, competitive & environmental analysis - to identify opportunities & threat - Assessing internal environment through functional approach and value chain - identifying critical success factors - to identify the strength & weakness - SWOT audit - core competence -Stakeholders' expectations, Scenario-planning - industry analysis.

### **UNIT III**

#### **Strategy formulation**

Generic strategies - Grand strategies - Strategies of leading Indian companies - The role of diversification -limit - means and forms. Strategic management for small organisations, non- profit organizations and large multi product and multiple market organisations.

### **UNIT IV**

#### **Tools of Strategy Planning and evaluation**

Competitive cost dynamics - experience curve -BCG approach - cash flow implication. IA -BS matrix - A.D Little's Life -cycle approach to strategic planning - Business portfolio balancing - Assessment of economic contribution of strategy - Strategic funds programming.



**Unit V**

**Strategy implement & Control:**

Various approach to implementation of strategy - Matching organization structure with strategy - 7Smodel - Strategic control process - Du Pont’s control model and other Quantitative and Qualitative tools - Balanced score card - M.Porter’s approach for Globalization - Future of Strategic Management.

**Reference**

- 1.Pearce& Robinson, Strategic Management ,All Indian Travellers N.D
- 2.A.C. Hax And Ns, Strategic Management: An Integrative Perspective, Majifu, Prentice Hall
- 3.Micheal Porter, Competitive Strategies.
- 4.Micheal Porter, Competitive Advantage Of Nations.
- 5.Samul C. Certo And J.Paul Peter, Strategic Management, Second Edition. Concept And Application, Mcgraw Hill.
- 6.Georgy G.Dess And Alex Miller , Strategic Management, Mcgraw Hill.
- 7.Gerry Jhonson & Keven Scholes, Exploring Corparate Strategy: Text And Cases,Ph
- 8.Jaunch .L ,Rajive Gupta & William.F.Glueck ,Business Policy And Strategic Management ,Frank Bros & Co,20003
- 9.Fred R.David ,Strategic Management Concept &Cases ,Pearson,2003

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**QUESTION PAPER PATTERN**

**Time : 3 Hours**

**Max Marks : 100**

**Answer any Five Questions**

**(5 X 20 = 100 Marks)**

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