

M.E Mechanical Engineering (Industrial Engineering & Management)
(Full Time)
Proposed Scheme for CBCS

SEM I				
S.NO	Sub Code	Sub Name	Number of Credit	Sub Type
1.	IMR1C1	Productivity & Technology Management	3-1-1 =5	PC1
2.	IMR1C2	Quantitative Techniques for Management	3-1-1 =5	PC2
3.	IMR1C3	Production & Operations Management	3-1-1 =5	PC3
4.	IMR1Gx	Generic Elective I	3-1-0 =4	GE1
5.	IMR1Ex	Elective I	3-1-1 =5	PE1
6.	ASR1S1	Soft Skills -1	2-0-0 =2	
7.	IMR1W1	Seminar/ Res. Tool/Work Shop-1	0-2-0=2	
8.	IMR1V1	Comprehensive Viva I	0-0-4=4	
Total Credit for SEM I			28 actual + 4 Virtual credits	
		List of Generic Elective I		
1.	IMR1G1	Principles & Practices of Management		
2.	IMR1G2	Human Resource management		
3.	IMR1G3	e –Business & Commerce		
		List of Elective I		
1.	IMR1E1	Statistical Quality Control and Total Quality Management		
2.	IMR1E2	Strategic Management		
3.	IMR1E3	Business Process Reengineering		
SEM II				
1.	IMR2C1	Financial Management	3-1-1 =5	PC4
2.	IMR2C2	Materials Management	3-1-1 =5	PC5
3.	IMR2C3	Supply Chain Management	3-1-1 =5	PC6
4.	IMR2Gx	Generic Elective II	3-1-0 =4	GE2
5.	IMR2Ex	Elective II	3-1-1 =5	PE2
6.	ASR2S2	Soft Skills -2	2-0-0 =2	
7.	IMR2W2	Seminar/ Res. Tool/Work Shop-2	0-2-0=2	
8.	IMR2V2	Comprehensive Viva II	0-0-4=4	
Total Credit for SEM II			28 actual + 4 Virtual credits	
		List of Generic Elective II		
1.	IMR2G1	Project Management		
2.	IMR2G2	Enterprise Resource Planning		
		List of Elective II		
1.	IMR2E1	Marketing Management		
2.	IMR2E2	Product Design and Manufacturing		
3.	IMR2E3	Customer Relationship Management		
4.	IMR2E4	Industrial Marketing		
SEM III	IMR3D1	Dissertation Phase I	0-0-12=12	

	IMR3V3	Comprehensive Viva III	0-0-4=4	
Total Credit for SEM III			12 actual + 4 Virtual credits	
SEM IV	IMR4D2	Dissertation Phase II	0-0-12=12	
	IMR4V4	Comprehensive Viva IV	0-0-4=4	
Total Credit for SEM IV			12 actual + 4 Virtual credits	
Total Credits			80 actual + 16 Virtual credits	

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1C1 PRODUCTIVITY AND TECHNOLOGY MANAGEMENT.	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objectives & Pre requisites: To impart the basics of Productivity Concepts, to refine the skills of Workplace design through Work Study, Job Evaluation, etc. To develop the skills of Technology management through different technology transfer.

COURSE CONTENTS

UNIT-1

Productivity:

Productivity, Introduction, types of productivity, methods to improve productivity. Introduction to work study, method study, definition, importance, selection, recording, different recording techniques, principal of motion economy.

UNIT-2

Work Measurement:

Introduction to work measurement, time study, Steps in time study. Various techniques to measure time, slandered time, normal time, observed time. Allowances, measurement & significance. Work sampling, introduction & importance

UNIT-3

Job Evaluation:

Job evaluation and merit rating, introduction to job evaluation, various method of job evaluation, importance of job evaluation.

UNIT-4

Technology Management:

Introduction to technology, technology management, importance of technology management, know how of technology, know why of technology, dimensions of technology management Technology life cycle, syndication diffusion.

UNIT-5

Technology Transfer

Technology forecasting, introduction, importance, absorption & adoption, generation of technology, method of technology transfer, technology transfer modes, technology diffusion, importance. Technology requirement for India, strategies for the companies in the changing environment. Case studies.

BOOKS RECOMMENDED:

- [1]. Dhawan, *Productivity and Technology Management*.2002
- [2]. I.L.O, *Work Study*. 2004
- [3]. Branes K.M, *Time & Motion Study*.
- [4]. Farland Mc, *Management –Principal and Practice*. .Dec 1990
- [5]. Dr. Sushil, *Technology Management*. New Delhi Vikas, 2001

LABORATORY EXPERIMENTS:

1. Study and analysis of Different productivity Measures related to specific industries.
2. Study and analysis of different Recoding techniques for a given process.
3. Estimation of Standard Time for a given Job, Process and its comparison with relevant industry data.
4. Study and Analysis of Job Evaluation process and its comparison with related industry.
5. Study of Technology Transfer process with special cases of industries or service organisation.
6. Study of Technology Forecasting methods and their applications in Indian context.
7. Case studies.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1C2 QUANTITATIVE TECHNIQUES FOR MANAGEMENT	L	T	P	L	T	P	Total
		3	1	1	3	1	1
Duration of Theory Paper: 3 Hours							

Objectives & Pre requisites: To develop the skills of decision making in dynamic business situations through quantitative analysis using different mathematical models like linear programming, Transportation, Assignment, Queuing etc. Strategies formulation with the help of game theory and simulation etc.

COURSE CONTENTS

UNIT-1

Introduction:

History and development of O.R Present Trend.

Linear Programming:

Formulation, graphical methods, simplex method, Big- M- method, two phase method, degeneracy unrestricted variables. Quality in L p. revised simplex, duality, sensitivity analysis.

UNIT-2

I Assignment Models: Formulation, Balanced and Unbalanced problems.

II Transportation: Formulation, graphical methods

III Introduction to Integer Programming.

UNIT-3

Waiting Line Models:

Introduction, classification, state in queue, probability distribution of arrival and service times. Single server model (M/M/I). Multiple server model (MMS). Birth & death process.

UNIT-4

Game Theory & Simulation:

Rectangular, two persons, zero sum games, maximin and minimax Principles. Saddle point. Dominic. graphical and algebraic method of solution by transforming into linear programming problem. Bidding problem. Building a simulation model, Monte-Carlo simulation and application.

UNIT-5

Dynamic Programming: Introduction, developing optimal decision policy.

Replacement and Maintenance Models: Introduction, Individual replacement and group replacement policy.

BOOKS RECOMMENDED:

- [1]. Taha, *Operations Research*, Tata Mc.Graw Hill.
- [2]. Wagner, *Operations Research*, PHI. New Delhi, 2003
- [3]. Ravindram & Philips, *Operations Research*, Tata Mc.Graw Hill.
- [4]. Gupta & Hira, *Operations Research*, S. Chand. 1e, 2008
- [5]. Chitle & Negi, *Operations Research*, Jain Brothers.
- [6]. Vohra N.D, Kataria S.K, *Quantitative Techniques for Management*. Tata Mc.Graw Hill, 2004.

LABORATORY EXPERIMENTS:

1. Development, Formulation and Analysis of Linear Programming Problem for given decision making situations.
2. Development and Analysis of Transportation and Assignment models.
3. Development, Formulation and Analysis of Inventory problem for a given system.
4. Study and modeling of Queuing situations at a given service problems.
5. Simulations exercise relating various operations research problems.
6. Development & solution of dynamic programming models.
7. Formulation and solution of various replacement models.
8. Case studies based on Operations Research Problems.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1C3 PRODUCTION AND OPERATIONS MANAGEMENT	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: To inbuilt the foundation of different Operations strategies like Aggregate planning, Plant location decisions, capacity planning. To ensure the development of skills required for new product development their production planning & control.

COURSE CONTENTS

UNIT-1

Introduction:

Overview of operation management, nature & content of operation management, various schools of management thought, framework for managing operations strategy & competitiveness, strategic planning for production & operations.

UNIT-2

Product Design:

Product / service and process design, product development, morphology of design process , product life cycle concept need identification, conceptual design , creative design concepts , feasibility study, Preliminary design , detailed design , design for customer, for manufacturer and assembly , types of processes, process planning and selection process flow structure , product / process matrix , technologies in manufacturing , FMS and CIM.

UNIT-3

Operation Capacity Planning:

Operation capacity planning , design and system capacity , capacity planning models , economic analysis capital budgeting and analysis , capital investment evaluation techniques, facility location and layout, foreign locations , factory affecting location decisions , models , analysis and selection of layouts , cellular manufacturing layouts.

UNIT-4

Production Planning & Control:

Functions of production planning and control, forecasting, qualities and quantitative models for forecasting, accuracy of forecasting and selection of forecasting technique, aggregate planning, master production scheduling and MRP, operations scheduling, loading sequencing detailed scheduling and expediting, forward and backward scheduling, optimized production technology (OPT).

UNIT-5

Modern operations Techniques:

Overview of synchronous manufacturing and theory of constraints, introduction to Japanese contribution for WCM overview, JIT purchasing, KANBAN, KAIZEN concepts, modern trends in operations management, introduction to learn and agile manufacturing.

BOOKS RECOMMENDED:

- [1]. Chase, Aquiline & Jacobs, *Production & Operations management*. Tata Mc.Graw Hill
- [2]. Dilworth, *Production & Operations management*. 1999
- [3]. Adams & Ebert, *Production & Operations management*. 1999
- [4]. Monks, *Operations Management*. . Tata McGraw Hill, 1985

LABORATORY EXPERIMENTS:

1. Study and analysis of Production planing & Control situations in industry.
2. Study and analysis of variuous Forecasting Models.
3. Developmentr and analysis of Aggregate Planning Maodels.
4. Development and Analysis of matertrial requirement planning for the given data.
5. Study and analysis of prodution Sheduling.
6. Case studies related to proudction & Operations Management(manufacturing Sector).
7. Case studies related to proudction & Operations Management(Service Sector).

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1G1 PRINCIPLES & PRACTICES OF MANAGEMENT	L	T	P	L	T	P	Total
		3	1	0	3	1	0
Duration of Theory Paper: 3 Hours							

Objectives & Pre requisites: To impart the basics of Management Concepts, Evolution of management as discipline and to deal with different Management Functions.

COURSE CONTENTS

UNIT-1

The Nature of Management:

Definition and role of management, the function of a manager, scientific management. Various schools of management thought.

UNIT-2

Planning:

Nature and purpose of planning, components of planning objective of business, forecasting, decision making, policy formulation and strategies. Management by objectives.

UNIT-3

Organization:

Nature and purpose of organizing structure, centralization, decentralization, span of control, delegation of authority relationship. Shaping the overall structure, formal and informal organization.

UNIT-4

Directions & Staffing:

Direction process, theories of motivation and leadership, need analysis, communication. Role and function of personal management, manpower planning, selection and recruitment, interviewing, training methods, welfare techniques.

UNIT-5

Control:

Meaning and process of control techniques of control evaluation, developing and compensating the employees, merit rating. Comparison of American, Japanese and Indian philosophies of management.

BOOKS RECOMMENDED:

- [1]. Koontz and O'Donnell, *Essentials of Management* .Mc.Graw-Hill, Jan 1986.
- [2]. Terry G.R, *Principals of Management*.
- [3]. Peter Drucker, *Practice of Management*. 1992.
- [4]. Farland Mc, *Management, Principal and Practice*.
- [5]. Prasad L.M, *Principal and Practice & Mgt*.Sulatan Chand & Sons.
- [6]. Chhabra T.N, *Principal and Practice & Mgt*.
- [7]. Agrawal R.D, *Organization & Management*. McGraw-Hill New Delhi, 1997.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1E1 STATISTICAL QUALITY CONTROL AND TQM Duration of Theory Paper: 3 Hours	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5

Objective and Pre requisites: To develop the skills required for Quality consciousness among the students. Basics of Quality control through different techniques like theory of Control charts & Acceptance sampling. To build the Knowledge base of Total Quality Management, Six Sigma etc.

COURSE CONTENTS

UNIT-1

Quality Control:

Definitions, place of quality control in industries, quality control organization, difference between inspection and quality control, application of quality control in industries, economic of quality systems, quality assurance. Theory of Control Charts
Sample size and frequency of sampling, out control, control for variables and attributes and their application design of X and R charts, Process capability studies.

UNIT-2

Acceptance Sampling:

Single sampling planes, double sampling & sequential sampling planes, rectifying inspection for lots, sampling planes for continues production, selection of sampling planes for different situation, economics of acceptance sampling.

UNIT-3

Total Quality Management (TQM):

Evolution of total quality management , historical perspective, elements of TQM - Total employee involvement , elimination of waste and problem exposure , total quality control systems , Deming's wheel , Deming's 14 points – pros and cons in industrial engineering context , Philip Crosby philosophy , Juran philosophy , Ishikwa diagram , Just – in- Time philosophy design and development strategy in TQM – Quality function deployment.
Application of TQM to service type organization, service guarantees, case studies on application of TQM to services type organization, various quality award, cost benefit analysis, life cycle costing.

UNIT-4

Reliability:

Distributions encountered in controlling reliability mean time to failure , exponential failure density, MTTF, Weibull, failure density, measurement and tests , maintenance and reliability , life testing.

UNIT-5

Concepts & Application of 6 – Sigma Quality:

Comparison between 3-sigma & 6- sigma quality relationship between DPMO and standard normal variate , short term and long term yield cost and quality effectiveness of 6- sigma strategy , DMAIC approach to 6-sigma implementation application to service industry link between 6- sigma & DOE. ISO 9000 Series and SPC, Quality Circles

BOOKS RECOMMENDED:

- [1]. Mahajan M., *Statistical Quality Control*, Dhanpat Rai & Sons, 2001.
- [2]. Mitra A., *Quality Control Applications*, Pearson Education. 2e, 1998
- [3]. Sharma D. D, *Total Quality Management*, Sultan Chand & Sons. New Delhi, 2000
- [4]. Basterfield, *Total Quality Management*, Pearson Education, 2003
- [5]. Logothitis, *Total Quality Management*, PHI.

LABORATORY EXPERIMENTS:

1. Study and Analysis of set parameters relating to different mathematical distributions (Variable).
2. Study and Analysis of set parameters relating to different mathematical distributions (Discrete).
3. Construction & analysis of various process control charts.
4. Performance of Acceptance Sampling for a given set of lots.
5. Analysis of tools of related to total Quality Management like QFD, Fish bone diagram etc.
6. Case studies related to subject.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1G2 HUMAN RESOURCE MANAGEMENT	L	T	P	L	T	P	Total
		3	1	0	3	1	0
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: The objective of this course is to help the students develop an understanding of the dimensions of the management of human resources, with particular reference to HRM policies and practices at international level.

COURSE CONTENTS

UNIT-1

HRM Concept

Definition, Concept, Evaluation and Relevance of HRM. Human Resource Functions, HRM in Indian and Global Scenario. Human Resource Policies.

UNIT-2

Human Resource Acquisition Process

Job Analysis- Job Specification, Job Analysis Methods, Human Resource Planning Concept and Process of HRD, HRP Process at National and Corporate Level, Human Resource Information System. Steps of HRIS, Recruitment, Sources of recruitment, Selection, Stages in selection process. Global Scenario in HR Acquisition

UNIT-3

Human Resource Training and Development.

Orientation, Training and Development Process and Methods, Need Assessment, Training Evaluation, Approaches and Types of Evaluation Instruments, Developing Effective Training Programmes, HRD mechanism, HRD for Organizational Effectiveness

UNIT-4

Appraising and Improving Performance

Basic Concepts Objectives and Process of Performance Appraisal Systems, Performance verses Potential Appraisal, Types of Employee Appraisal Systems, New Trends in Performance Appraisal Systems at Global level, Succession Planning, Career Planning and Assessment Centers.

UNIT-5

Maintenance of Human Resources:

Job Evaluation, Incentive and Reward System, Objectives and Major Phases of Compensation Management, Cross-national variation in reward structures. Knowledge & knowledge transfer, knowledge and situation cognition, Implications for knowledge transfer, knowledge management in multinational companies, knowledge management & International HRM.

BOOKS RECOMMENDED:

- [1] Bohlander, Human Resource Management, 14 th edition Cengage Learning, India, 2009
- [2] Dessler, Verckey, Human Resource Management, Pearson Education, 2009.
- [3] Monir H. Tayeb, International Human Resource Management, Oxford, 2009.
- [4] Patnaik, Human Resource Management, 3 rd edition, PHI, 2009.
- [5] Subba Rao, Essential of HRM and Industrial Relation, Himalaya Pub. House. 2008,
- [6] Subba Rao, International Human Resource Management, Himalaya Publishing House., 2009.
- [7]. Jeffery Mello, Human Resource Management, Cengage Learning, India, 2008.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR1G3 E- BUSINESS & COMMERCE	L	T	P	L	T	P	Total
	3	1	0	3	1	0	4
Duration of Theory Paper: 3 Hours							

COURSE CONTENTS

UNIT – 1

Introduction

Fundamentals in E-Commerce – Meaning, Nature, Limitation, E – Commerce – Origin, Nature, Meaning, Definitions, Features, Need , Advantages & Disadvantages, Essential requirements, e – Commerce Vs Traditional Commerce.

UNIT – 2

Business Models for e Commerce

e-Business: Meaning, Definition, Importance, e Business models based on the Relationships of transaction parties, B2C, B2B, C2C, C2B. e Business models based on the relationship of transaction types – Manufacture Model, Advertising Model, Value Chain Model, Brokerage Model.

UNIT – 3

E –Payment Systems:

Modes of e Payment – Credit Cards, Debit Cards, Smart Cards, e Credit Accounts, e Money/Cash, Digital Signatures – Legal Positions of Digital Signatures, How Digital Signature Technology Works, Risks & e Payment system : Data protection, risk from mistakes & disputes – Consumer protection, Management Information Privacy, Managing Credit Risk.

UNIT – 4

E-Business Communication

Introduction, Importance of e Technology in e Business Communication, Modes of e-Business communication, e- Business Communication, e – Business Conferencing – Audio, Document Telephone, Video Conferencing – Types Email in e Commence, Mobile Communication. E – Banking Introduction concept & meaning, Electronic Fund Transfer – Automated Clearing house, Automated ledger posting, Electronic Money transfer e- Cheque, ATM, FOS, Tele banking.

UNIT – 5

E- Security & E- Markets

Introduction, Need for Security, Security concepts, attacking methods – Cyber crimes, Cryptology, Hacker, encryption. E-commerce security solutions – E – Locking Techniques, e-Locking product, e-Locking services, Net Scape security solution E-Markets: On line shopping – On Line purchasing –Electronic Market –Three models of e-Markets, e-Advertising e- Branding.

BOOKS RECOMMENDED:

1. Murthy C.S.V., e Commerce–Concepts Models Strategies Himalaya Publishing House 3e, 2005.
2. Basics of e Commerce-Legal & Security issues ISBN 81-203-2432-3.
3. Joseph P.T., e Commerce : An Indian Perspective, 2ndEd., SJ, 2006.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMRIE3 BUSINESS PROCESS RE-ENGINEERING	L	T	P	L	T	P	Total
	Duration of Theory Paper: 3 Hours	3	1	1	3	1	1

Objective and Pre requisites: To provide a greater understanding of effective solutions to change problems that need to combine technological, organizational and people-orientated strategies by adopting a process based approach to change management. To introduce the contingencies that affect management and the most effective measures for dealing with them. To introduce strategic IS/IT planning and how it must relate to business strategy. To demonstrate the use and validity of organizational development models through current real-life case studies.

COURSE CONTENTS

UNIT-1

Business process reengineering-an overview:

Historical background Fundamentals of BPR Concepts and techniques. Changing business processes: the importance of technology as a driver for organization: Nature, significance and rationale of business process reengineering (BPR),

UNIT-II

Process redesign:

Major issues in process redesign: Business vision and process objectives, Processes to be redesigned, measuring existing processes, Role of information technology (IT) and identifying IT levers.

UNIT-III

Designing and building a prototype of the new process:

BPR phases, Relationship between BPR phases. BPRE & TQM, benchmarking, ISO standards. Implementation of BPRE-business process management, principles, Business models, barriers.

UNIT-IV

Change management:

Change and the manager: change and the human resource: the cultural web and the past: the cultural attributes of change Typical BPR activities within phases: Change management, Performance management, and programme management.

UNIT-V

BPR and continuous improvement:

Co-ordination and complementary efforts, IT capabilities and their organizational impacts, Implementation of BPR, Stages of implementation and critical aspects, Case studies on BPR. The concept of the learning organization and its influence on systems development: restructuring the organization .The importance of communication and the resistance to change: building the culture for successful strategy implementation; the influence IT will have on the internal appearance of organizations in the future.

BOOKS RECOMMENDED:

- 1.Omar El Sawy, Business Process Re-engineering, Tata McGraw Hill , 2010
- 2.R. Srinivasan, Business Process Re-engineering, Tata McGraw Hill , 2011
- 3.Warner Winslow, Strategic Business Process Transformation through BPR, , Tata McGraw Hill , 1996
4. R. Radhakrisnan, Business Process Reengineering, Prentice Hall of India.

LABORATORY EXPERIMENTS:

1. Case studies related to Historical background Fundamentals of BPR Concepts and techniques.
2. Case studies related to Major issues in process redesign:.
3. Case studies related to Role of information technology (IT) and identifying IT levers.
4. Case studies related to Designing and building a prototype of the new process.
5. Case studies related Change management, Performance management, and programmed management.
6. Case studies related to BPR and continuous improvement.
7. Case studies related to concept of the learning organization, importance of communication and the resistance to change.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMRIE2 STRATEGIC MANAGEMENT	L	T	P	L	T	P	Total
		3	1	1	3	1	1
Duration of Theory Paper: 3 Hours							

Objectives & Prerequisites:

The objective of teaching this course is to enable students to integrate knowledge of various functional areas and other aspects of management, required for perceiving opportunities and threats for an organization in the long-run and second generation planning and implementation of suitable contingency strategies for seizing / facing these opportunities & threats.

COURSE CONTENTS

UNIT-1

Introduction:

Meaning, Need and Process of Strategic Management; Business Policy, Corporate Planning and Strategic Management; Single and Multiple SBU organisations; Strategic Decision-Making Processes – Rational-Analytical, Intuitive-Emotional, Political – Behavioral;

UNIT-2

Objectives & Strategic Analysis:

Need, Formulation and changes in these three; Hierarchy of objectives, Specificity of Mission and Objectives. SWOT Analysis General, Industry and International Environmental Factors; Analysis of Environment, Environmental Threat and Opportunity Profile (ETOP) Strategic Advantage Profile (SAP).

UNIT-3

Strategy Alternatives:

Grand Strategies and their sub strategies; Stability, Expansion, Retrenchment and Combination; Internal and External Alternatives; Related and Unrelated Alternatives, Horizontal and Vertical Alternatives; Active and Passive Alternatives; International Strategy Variations

UNIT-4

Strategy Choice:

Making: Managerial Choice Factors, Choice Processes – Strategic Gap Analysis, ETOP-SAP Matching, BCG Product – Portfolio Matrix, G.E. Nine Cell Planning Grid; Prescriptions for choice of Business Strategy

UNIT-5

Strategy Implementation, Evaluations and Control:

Strategy Implementation, Evaluations and Control: Implementation Process; Resource Allocation; Organizational Implementation; Plan and Policy Implementation; Control and Evaluation Process; Criteria for Evaluation; Measuring Feedback; and Corrective Action.

BOOKS RECOMMENDED

1. Azhar Kazmi, Business Policy and Strategic Management, TMH, 2010
2. Fred David, Strategic Management Concepts and Cases, PHI, 12 Ed
3. Whiller and Hunger, Basic Concepts of Strategic Management, TMH, 12 Ed

LABORATORY EXPERIMENTS:

1. Case studies related to Process of Strategic Management; Business Policy, Corporate Planning.
2. Case studies related to Strategic Decision-Making Processes.
3. Case studies related to Strategy alternatives.
4. Case studies related to Making: Managerial Choice Factors, Choice Processes – Strategic Gap Analysis.
5. Case studies related to Strategy Implementation, Evaluations and Control.
6. Case studies related to Implementation; Control and Evaluation Process.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2C1 FINANCIAL MANAGEMENT	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objectives and Pre requisites: To inbuilt the concepts of Financial management. To strengthen skills related to Accounting. Application of financial tools and techniques, helpful for financial planning Capital Budgeting and Decision Making.

COURSE CONTENTS

UNIT-1

Nature and Scope of Financial Management:

Role of financial management in business decisions, goals of financial management, evolution of corporate finance, finance function, broader applicability of financial management concepts, tasks of finance controller.

UNIT-2

Book Keeping and Accounting:

Introduction of book keeping. Accounting Process & its concepts, Introduction & working knowledge of different books of account. Preparation of Financial Statements of the firm.

UNIT-3

Tools of Financial Analysis:

Funds flow analysis – sources and use of funds, balance sheet and profit and loss statements, measurement of cash flows, revenue cost, profit relationship, break even analysis, ratio analysis, analysis of operating and financial leverages, long term and short term cost out put relationship.

UNIT-4

Financial Planning:

Financial forecasting, forecasting techniques, criterion for investment decisions, dividend policy, cost of capital problems of financial planning and budgeting in public sector undertaking.

UNIT-5

Financial Budgeting:

Capital budgeting, capital budgeting, capital rationing, sources of rising fixed and working capital, management of working capital, internal financing, balanced capital structure,

BOOKS RECOMMENDED:

- [1]. Kuchchal, *Financial management*. Tata McGraw Hill, 2003
[2]. Chandra Prasanna, *Financial management*. Tata Mc.Graw Hill, 2000

LABORATORY EXPERIMENTS:

1. Case studies related to Accounting Procedure and Book Keeping.
2. Case studies related to Preparation of different Financial Statements.
3. Case studies related to Ratio Analysis.
4. Case studies related to Funds Flow and Cash flow statement.
5. Case studies related to Capital Budgeting and Financial Planning.
6. Case studies related to Working Capital Management for an organization.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2C2 MATERIALS MANAGEMENT	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: To inbuilt the concepts of Material handling and purchase procedure of an organization. To impart the basics of standardization & stores management within an organization. To concrete the concepts of inventory management for effective decision making related to material & inventory.

COURSE CONTENTS

UNIT-1

Introduction:

Objective of materials management, field and scope of material management, general analysis material quality, material planning programming.

UNIT-2

Standardization: Concepts and Procedure,

Simplification: Concepts and Procedure,

Codification: Concepts and Procedure.

UNIT-3

Purchase Management:

Problems of purchasing , organization of purchasing Deptt, purchase procedures , placing of orders , inspection and testing , purchasing for mass production , purchase contract , make or buy decision , material import , DGS & D rate contract.

UNIT-4

Stores Management:

Stores organization, methods of storing, record – keeping & checking, issue methods, stores layout.

UNIT-5

Inventory Management:

Various inventory models, quantity discounts, shortages, instantaneous production with back orders, fixed time mode, single period model of profit maximization with time independent costs, lead time , re-order point , Buffer stock, models with price breaks, selective control of inventory, POQ system.

BOOKS RECOMMENDED:

- [1]. Lee & Dobler, *Material management*. Tata Mc.Graw Hill, 1990
- [2]. Arnold J.R Tony & Stephen N. Chapman, *Introduction to Material management*. 2003
- [3]. Gopal Krishnan, *Material Management*.1992

LABORATORY EXPERIMENTS:

1. Cases related to material handling problem in the plant or organization.
2. Cases related to the problem of Standardization, simplification, codification.
3. Cases related to Problems of purchasing.
4. Cases related to inspection and testing, purchasing for mass production.
5. Cases related to stores layout.
6. Cases related to various inventory models.
7. Determination of EOQ from the given data & its comparison with data of the industry.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2C3 SUPPLY CHAIN MANAGEMENT	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objectives and Pre requisites: To inbuilt the concepts of Logistics and supply chain Management.

To strengthen skills related to supply chain strategies decisions.

COURSE CONTENTS

UNIT-1

Introduction to Supply chain:

Introduction to supply chain. Objective of supply chain, Process view of supply chain, Supply chain management, supply chain challenges, Supply Chain performance. Competitive and Supply chain strategies, achieving strategic fit, expanding strategies scope, Supply chain drives & obstacles: Frame work, inventory, transportation facilities, information, and obstacles to achieving fit.

UNIT- 2

Designing the Supply Chain Network:

Role of distribution in supply chain, factors influencing distribution network, design options, e – business and distribution network.

Network Design in supply chain: Role of network design, factors influencing, framework for network design decision, role of IT.

UNIT-3

Sourcing decision in Supply chain

Role of sourcing, supplier scoring, design collaboration, sourcing planning and analysis, role of IT in sourcing, Risk management, in sourcing, design collaboration, making sourcing decisions in practice

UNIT-4

Transportation in supply chain

Transportation in supply chain: Factors affecting transportation decision , modes of transportation & their performance characteristics , design options , tradeoffs , tailor transportation , routing & scheduling in Transportation , Network design in supply chain : Factors affecting network designing decisions, frame work, models , information technology in supply chain

UNIT-5

Supply chain coordination and Information technology

Understanding lack of coordination and Bullwhip effect, obstacle to coordination in supply chain, managerial levers to achieve coordination, building strategic partnership, collaborative planning, forecasting, achieving coordination in practice.

Role of IT in supply chain, supply chain IT frame work, supply chain IT in practice

BOOKS RECOMMENDED:

- [1]. Hutchinson Norman E., an Integrated approach to logistics management, PHI, 1987
- [2]. Finkelstein & Guertin, Integrated logistics support, IFS publication U.K., 1988
- [3]. Copra Sunil & Meindl Peter, Supply chain management. McGraw-Hill, 1998.
- [4]. Mentzer, Supply chain management. . Sage Publications, 2004
- [5]. Chistofer M., Logistics & supply chain management. 1998.

LABORATORY EXPERIMENTS:

- (1) Case studies related to operation and systems logistics.
- (2) Case studies related to Logistics in system utilization and support
- (3) Case studies related to integrated logistic support.
- (4) Case studies related to Competitive and Supply chain strategies.
- (5) Case studies related to Factors affecting transportation decision.
- (6) Case studies related to Network design in supply chain.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2G1 PROJECT MANAGEMENT	L	T	P	L	T	P	Total
	3	1	0	3	1	0	4
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: To develop the Knowledge & concepts of Project Management. To develop the of Project's Analysis on different criteria like Market potential, Technical & Financial Analysis. To develop the skills of Project Appraisal through different criteria.

COURSE CONTENTS

UNIT-1

Project Management:

Definition characteristics and life cycle, difference with operation s management, steps in PM, projects managers jobs organization for PM, critical chain concepts.

UNIT-2

Market Potentiality & Technical Analysis:

Identification of opportunities of new products.

Materials and input production technology, product mix, plant capacity, project planning and analysis tools.

UNIT-3

Financial Analysis:

Estimation of cost of project, means of finance, estimate of working capital, estimate of cost of production, working result & profitability, projected balance sheet and projected cash flow statements. Project Appraisal Criteria: Payback period, net present value methods, cost benefit analysis, internal rate of return.

UNIT-4

Project Management through Network:

Work break down structure, Gantt chart etc. PERT: - Activity average time variance and project completion time by normal distribution. CPM: - Critical path, floats their interpretation, event occurrence time, slacks, resource allocation, crashing of NW, time cost trade-off, resource smoothing and leveling.

UNIT-5

Monitoring and Control:

Features of control, project control, performance analysis and cost control curves, line of balance, GERT, computer applications.

BOOKS RECOMMENDED:

[1]. Chandra Prasanna, *Project preparation*, Tata Mc.Graw Hill publishing CO. 1, New Delhi

[2]. Jain D.K, *Project planning and appraisal in planned economy*, Uppal publishing house, New Delhi.

[3]. Lock Dennis, *Project management*, Galgotia book service, New Delhi.

[4]. Mohsin M., *Project planning and control* Vikas publishing house, New Delhi.

[5]. Sonha A.K and Sinha Ram, *project engineering and management*, Vikas publishing house, New Delhi.

LABORATORY EXPERIMENTS:

- (1) Case studies related to different types of project and their characteristics.
- (2) Case studies related to responsibilities of project manager related with different projects .
- (3) Case studies related to market potentiality analysis with reference to new product.
- (4) Case studies related to technical analysis with reference to different projects.
- (5) Case studies related to financial analysis with reference to new product.
- (6) Case studies related to project implementation techniques.
- (7) Case studies related to project control techniques.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2G2 ENTERPRISE RESOURCE PLANNING	L	T	P	L	T	P	Total
	3	1	1	3	1	0	4
Duration of Theory Paper: 3 Hours							

Objectives & Prerequisites: To impart the basics of Enterprise Resource Planning (ERP) & its implementation methodologies to the students

COURSE CONTENTS

Unit - 1

Introduction:

ERP: an over view, Benefits of ERP, REP and related technologies, Business Process Reengineering, Data warehousing, Data Mining, Online Analytical processing (OLAP), Supply Chain Management.

Unit – 2

ERP Implementation:

ERP implementation Life cycle, Implementation Methodology, Not all packages are created equal, ERP Implementation Hidden Costs, Organizing the implementation, Vendors, Consultants and Employees.

Unit – 3

The Business Modules:

Business Modules in an ERP Package, Finance, Manufacturing (Production), Human Resources, Plant Maintenance, Materials Management, Quality Management, Sales & Distribution.

Unit – 4

The ERP Market:

ERP Market place, SAP AG, PeopleSoft, Bann Company, Oracle Corporation. QAD, System Software Associates, Inc. (SSA).

Unit - 5

ERP – Present & Future:

Turbo Charge the ERP System, Enterprise Integration Applications (EIA), ERP and E – Commerce, ERP & Internet, Future Directions in ERP.

BOOKS RECOMMENDED:

- [1] Leon Alexis, ERP Demystified, Tata McGraw – Hill, 1e,2004.
- [2] Garg V.K. & N.K. Venkitakrishnan ERP Ware: ERP Implementaion Framework, PHI, 4e,2004.
- [3] Leon Alexis, ERP Concepts and Planning, Tata Mcgraw – Hill,1e,2000.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2E1 MARKETING MANAGEMENT	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: To build a strong foundation of Marketing concepts & to acquaint the students about the different Marketing Functions. To develop the skills of Marketing Strategies formulation & its implementation in an organization to maximize profits and improvement of Brand Image.

COURSE CONTENTS

UNIT-1

Introduction:

Tasks and philosophies of marketing MANAGEMENT, the marketing system and environment, system and environment, system approach to marketing. Marketing Organization, Organization of marketing department, responsibilities and functions of marketing managers, interaction of marketing in other functions.

UNIT-2

Marketing Research:

Scope and objective, planning and formulating marketing research projects, methods of collecting data, analysis and evolution of data, consumer behavior analysis, vendor analysis.

UNIT-3

Product Planning:

Product policy decision, life cycle innovation, product failure, introduction new products, product mix strategies, product portfolios management ,BCG GF-directional matrices, planning & budgeting for establishing and new products- MARMIX model.

UNIT-4

Sales Promotion and Advertising:

Role of promotion and advertising, type of promotion and advertising method, promotion and advertising appropriation, development and evaluation of advertising program.

UNIT-5

Distribution & Sales Function:

Importance of middlemen, types of distribution channel, channel design decisions, problems in channel determination and uses. Recruitment, selection, training, motivation and compensation of sales force, controlling and evaluating.

BOOKS RECOMMENDED:

- [1]. Kotler Philip, *Marketing management, planning, analysis and control*. PHI, 2001
- [2]. Cundiff, Still & Govoni, PHI. , 2003

LABORATORY EXPERIMENTS:

1. Case studies related to different philosophies of marketing concepts.
2. Case studies related to different marketing organizations.
3. Case studies related to marketing research approaches adopted by business organisation.
4. Case studies related to product development and planning by different organisation.
5. Case studies related to sales promotion and advertising practices of different organisation.
6. Case studies related to sales promotions practices of different organisation.
7. Case studies related to distribution approaches for different organization.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2E2 PRODUCT DESIGN & MANUFACTURING	L	T	P	L	T	P	Total
	Duration of Theory Paper: 3 Hours	3	1	1	3	1	1

Objectives & Pre requisites: To impart the basics of Product Design & Development of a new Product. To sharpen the skills of the students to understand the different manufacturing processes/ systems for new product development.

COURSE CONTENTS

UNIT -1

Introduction

Characteristics of successful product development, Design and development of products, duration and cost of product development, the challenges of product development. Development Processes and Organizations: A generic development process, concept development: the front-end process, adopting the generic product development process, the AMF development process, product development organizations, the AMF organization.

UNIT -2

Product Planning

The product planning process, identify opportunities. Evaluate and prioritize projects, allocate resources and plan timing, complete pre project planning, reflect all the results and the process.

UNIT - 3

Identifying Customer Needs

Gather raw data from customers, interpret raw data in terms of customer needs, organize the needs into a hierarchy, establish the relative importance of the needs and reflect on the results and the process. Product Specifications: What are specifications, when are specifications established, establishing target specifications, setting the final specifications.

UNIT - 4

Concept Generation

The activity of concept generation clarify the problem, search externally, search internally, explore systematically, and reflect on the results and the process. Concept Selection: Overview of methodology, concept screening, and concept scoring, Concept Testing: Define the purpose of concept test, choose a survey population, choose a survey format, communicate the concept, measure customer response, interpret the results.

UNIT – 5

Design for Manufacturing

Definition, estimation of manufacturing cost, reducing the cost of components, assembly, supporting production, impact of DFM on other factors. Prototyping: Prototyping basics, principles of prototyping, technologies, planning for prototypes. Product Development Economics: Elements of economic analysis, base case financial mode, Sensitive analysis, project trade-offs, influence of qualitative factors on project success, qualitative analysis.

BOOKS RECOMMENDED:

1. Ulrich Karl.T. & Eppinger Steven D., “Product Design and Development” Irwin McGrawHill- 3e, 2000.
2. Chitale A. C. and Gupta R. C., PH1, “Product Design and Manufacturing”, 3e, 2003.
3. Timjones Butterworth Heinmann, “New Product Development” Oxford. UCI. 1997.
4. Boothroyd G., Dewhurst P. and Knight W., “Product Design forManufacture and Assembly”, 2002.

LABORATORY EXPERIMENTS:

- (1) Case studies related to Characteristics of successful product development, Design and development of products.
- (2) Case studies related to different Development Processes and Organizations.
- (3) Case studies related to the product planning process, identify opportunities.
- (4) Case studies related to Identifying Customer Needs.
- (5) Case studies related to Concept Generation, Concept Selection, Concept Testing.
- (6) Case studies related to Design for Manufacturing..
- (7) Case studies related to Prototyping, Product Development Economics.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full Time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2E3 CUSTOMER RELATIONSHIP MANAGEMENT	L	T	P	L	T	P	Total
		3	1	1	3	1	1
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: To make the students understand the organizational need, benefits and Process of creating long-term value for individual customers. To disseminate knowledge regarding the concept of e-CRM and e-CRM technologies. To enable the students understand the technological and human issues relating to Implementation of CRM in industries.

COURSE CONTENTS

UNIT-I

Introduction:

Definition of CRM, CRM as a business strategy, elements of CRM, CRM processes and systems. Strategy and Organization of CRM: History of CRM, Dynamics of Customer Supplier Relationships, Nature and context of CRM strategy, the relationship oriented organization.

UNIT-II

Marketing Aspects of CRM:

Customer knowledge, privacy issues, communications and multichannel in CRM, the individualized customer proposition, Relationship policy.

UNIT-III

Analytical CRM:

Relationship data management, Data analysis and data mining, Segmentation and selection, Retention and cross sell analysis, Effects of marketing activities, Reporting results. Operational CRM: Call centre management, Internet and website, Direct mail Collaborative CRM

UNIT-IV

CRM Subsystems:

Contact Management, Campaign Management, Sales Force Automation, Choosing CRM Tools / Software Package: Short listing prospective CRM vendors, setting evaluation criteria for the appropriate CRM package, selection

UNIT-V

CRM implementation:

CRM systems and Implementation: CRM systems, Implementation of CRM systems Applications in various industries: Applications in manufacturing, banking hospitality and telecom Sectors, Ethical Issues in CRM

BOOKS RECOMMENDED:

- 1 Peelen , Customer Relationship Management , Ed. Pearson 2004
- 2.Zikmund, William G. Customer Relationship Management: Integrating Marketing Strategy & Information Technology John Wiley. 2006
- 3 Greenberg, P CRM at the Speed of Light, 4th e. Mcgraw Hill - 2009
- 4 Brown , Stanley , Customer Relationship Management, A strategic Imperative in the World of e-Business . John Wiley & Sons 2008
- 5 Peppers, D. / Rogers, Martha. Doubleday The One to One B2B: Customer Relationship Management Strategies for the Real Economy Business - 2001

LABORATORY EXPERIMENTS:

- (1) Case studies related CRM as a business strategy.
- (2) Case studies related to Dynamics of Customer Supplier Relationships.
- (3) Case studies related to Marketing Aspects of CRM.
- (4) Case studies related to Relationship data management.
- (5) Case studies related to Contact Management, Campaign Management, Sales Force Automation.
- (6) Case studies related to CRM implementation.

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E.(Industrial Engineering and Management) Full time			
Subject Code & Name	Instructions Hours per Week			Credits			
IMR2E4 INDUSTRIAL MARKETING	L	T	P	L	T	P	Total
	3	1	1	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objective and Pre requisites: The objective of this course is to help the students develop an understanding of the dimensions of the Marketing, with particular reference to Industrial reference and practices at national and international level.

COURSE CONTENTS

UNIT-1

Nature of Industrial Marketing

Industrial Marketing Vs. Consumer Marketing , Relational approach to Industrial Marketing- The Nature of Industrial Demand & Industrial Customer

UNIT-2

Types of Industrial Products

Major Equipment; Accessory Equipment; Raw and Processed Materials; Component Parts and Sub- Assemblies; Operating Supplies; Standardized and Non-standardized parts, Industrial services

UNIT-3

Organizational Buying

Factors influencing Organizational Buying, Buying Roles; Organizational Buying Decision Process; environmental & organizational Influences, Organizational Influences on Buying Behavior: Buying Roles; The Buy Grid Model; The Organizational Buying Decision Process

UNIT-4

Industrial Product Decisions

Industrial Product Life Cycle, Industrial Product Mix determinants viz. technology, competition, operating capacity, shift in location of customers, government controls, changes in level of business activity, Channel Structure for Industrial Products, Geographical, size, operating characteristics manufacturers' and sales agents Brokers Channel Logistics Purchasing systems – Auctions- Documentation bids order placement follow up receipt and inspection

UNIT-5

Pricing & Promotion for Industrial Products

Pricing Objectives ,Price Decision Analysis , Breakeven analysis, net pricing, discount pricing , trade discounts, geographic pricing , factory pricing , freight allowance pricing , Terms of Sale, Outright purchase , Hire-purchase , Leasing Promotion for Industrial products , Supporting salesman , Motivating distributors , Stimulating primary demand , Sales appeal , Publicity & sponsorships , Trade shows, exhibits , Catalogs, Samples promotional letters – Promotional novelties

BOOKS RECOMMENDED:

- 1 Ralph S. Alexander, James S. Cross [and] Richard M. Hill., Industrial marketing - 3d ed. Homewood,
2. Reeder, Robert R., Brierty, Edward G. and Reeder, Betty H, Industrial Marketing Analysis, Planning and Control. Publisher: Prentice Hall ,1991.
3. P K Ghosh Industrial Marketing Oxford University Press India 2005
4. Havaldar, Krishna Industrial Marketing, Tata McGraw-Hill 2010
5. C S G Krishnamacharyulu, Lalitha R , Industrial Marketing , Jaico Publishing House, 2009
6. Anderson,Business Marketing, Pearson 2010.

LABORATORY EXPERIMENTS:

- (1) Case studies related to Industrial Marketing vs. Consumer Marketing.
- (2) Case studies related to Types of Industrial Products.
- (3) Case studies related to Organizational Buying.
- (4) Case studies related to Industrial Product Decisions.
- (5) Case studies related to Pricing & Promotion for Industrial Products.
- (6) Case studies related to Trade shows, exhibits, Catalogs, Samples promotional letters – Promotional Novelties.