



**MBA**

**LOGISTICS & SUPPLY CHAIN**

**MANAGEMENT**

**Curriculum and Syllabus**

(Based on Choice Based Credit System)

Effective from the Academic year

**2018-2019**

**Department of M.B.A**

**School of Management Studies**

**MBA LOGISTICS & SUPPLY  
CHAIN MANAGEMENT**

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

PEO1: To provide best quality of education and prepare the students to meet global standard and competitive environment

PEO2: To inculcate team spirit and leadership capabilities among students to develop business leaders attain organizational development

PEO3: To impart ethical and moral values to create better citizens and society impart ethical and moral values to create better citizens and society

PEO4: To develop entrepreneurial skills to think strategically and encourage them to become Entrepreneurs

PEO5: To motivate students to participate in community development and undertake Industry Research Projects

### **VISTAS MBA Program Outcomes**

The following outcomes have been identified by the School of Management and commerce, Faculty Council, as important for students to be able to perform at the conclusion of the MBA program. The MBA curriculum has been mapped to these outcomes, which are regularly assessed to identify levels of student achievement and areas of improvement. Students who are Graduates of the Master of Business Administration degree program will be able to:

1. Apply knowledge of management techniques in business environment
2. Evaluate the systems and processes used in an organization including the planning, decision-making, group dynamics, innovation, production, supply chain, operations, technologies, marketing and distribution management.
3. Design alternatives to solve business problems utilizing quantitative analysis, critical thinking and sound ethical decision making.
4. Use research based knowledge and methods including company analysis, primary and secondary data collection, analysis and interpretation of data to find solution to business problems

5. Demonstrate effectively on analysing, interpreting and solving problems in developing business projects using appropriate tools and techniques.
6. Apply economic models, accounting principles, statistical techniques, and financial theories, analysis, and reporting in business decision-making.
7. Organize tools and techniques from Various Functional areas(i.e Finance , Marketing, Human Resources, operations etc) to handle business problems.
8. Evaluate and combine ethical considerations in making business decisions
9. Communicate effectively in various forms by effective use of recent technology and logical reasoning for presentations, documentation, report writing ,manual preparation .
10. Adapt life-long learning and professional development to enrich knowledge and competencies
11. Perceive an aptitude for creativity, innovation and entrepreneurship.
12. Demonstrate a global outlook with ability to identify aspects of the global business operations.

## **MBA**

### **LOGISTICS & SUPPLY CHAIN MANAGEMENT**

#### **Program Specific Outcomes**

PSO – 1: Apply fundamental knowledge of management that comprises of accounting, finance, marketing and human resources management with logistics and supply chain for a business enterprise.

PSO – 2: Demonstrate knowledge, skills and techniques of quantitative method to improve the logistics and supply chain operations.

PSO – 3: Apply the fundamental concepts of logistics and supply chain related to national and international business system.

PSO – 4: Improve the logistics and supply chain processes using the advanced operations such as quality, lean, strategy and green to ensure sustainable business practices.

PSO – 5: Develop analytical skills using advancements in information technology to implement the concepts of logistics and supply chain system to aid decision making.

**VISTAS**  
**SCHOOL OF MANAGEMENT STUDIES**  
**BOARD OF STUDIES MEMBERS**  
**MBA (GEN), MBA (LSM), MBA (LSCM) and MBA (BA)**

<b>Sl.No</b>	<b>Name &amp; Address</b>	<b>Designation</b>
1.	<b>Dr.P.R. Ramakrishnan,</b> Dean, School of Management Studies, VISTAS, Chennai-600117	Chairperson
2.	<b>Dr.R.Thenmozhi,</b> Professor and Head, Department of Management Studies, Madras University, Chennai	External Expert
3.	<b>Mr.K.V.V.Giri</b> President CCHA, M/S Vaishnavi freight logistics Pvt ltd.	External Expert
4.	<b>Mrs.Sripriya,</b> Operations Programme Manager, TCS	Alumni
5.	<b>Dr.S.Vasantha ,</b> Professor, School of Management Studies,	Internal Member

	VISTAS,Chennai-600117	
6.	<b>Dr.S.Preetha,</b> Associate Professor,School of Management Studies, VISTAS,Chennai-600117	Internal Member
7.	<b>Dr.G.Rajini</b> Associate Professor,School of Management Studies, VISTAS,Chennai-600117	Internal Member
8.	<b>Dr.P.Shalini</b> Associate Professor, School of Management Studies, VISTAS,Chennai-600117	Internal Member
9.	<b>Dr.P.G.Thirumagal</b> Assistant Professor, School of Management Studies, VISTAS,Chennai-600117	Internal Member
10.	<b>Dr. A. Mohammed Faisal</b> Assistant Professor, School of Management Studies, VISTAS,Chennai-600117	Internal Member

**VISTAS**  
**DEGREE OF MASTER OF BUSINESS ADMINISTRATION**  
**MBA**  
**LOGISTICS & SUPPLY CHAIN MANAGEMENT**  
**CHOICE BASED CREDIT SYSTEM**  
**REGULATIONS**  
**w.e.f. 2018**

**1. ELIGIBILITY FOR THE AWARD OF DEGREE:**

A candidate shall be eligible for the award of the Degree only if he/she has satisfactorily undergone the prescribed Course of Study in a College affiliated to this University for a period of not less than TWO academic years and, passed the examinations of all the FOUR Semesters.

## **2. DURATION OF THE COURSE:**

The course for FULL-TIME students shall extend over a period of TWO academic years consisting of FOUR Semesters. Each academic year shall be divided into Two Semesters. The FIRST academic year shall comprise the First & Second Semesters, the SECOND academic year the Third & Fourth Semesters.

The ODD Semesters shall consist of the period from July to November of each year and the EVEN Semesters from January to April of each year.

The duration of each semester will be about 16 weeks. The subjects of study shall be in accordance with the syllabus prescribed from time to time which may be amended through a board of studies members.

## **CONDITIONS FOR ADMISSION:**

Candidates shall be required to have passed any Bachelor's Degree of any University/Institute of college or of any other University or a qualification accepted by the Syndicate of this University as equivalent thereto, shall be eligible for admission to MBA Degree Course.

### **3.1. COURSE OF STUDY AND SCHEME OF EXAMINATIONS (FULL TIME)**

The total number of subjects of study shall be 25 out of which 17 shall be compulsory subjects and of the remaining 8 will be Electives, Internship after Second semester and Project Work in the Final Semester with a Viva-voce.

The FULL-TIME candidates shall take 8 subjects (Theory) in the First semester, 8 subjects (Theory) in the Second Semester, 9 subjects (Theory) in the Third Semester and a Summer Internship and a Project Work.

### **3.2. ELECTIVE SUBJECTS:**

To offer Elective Subjects to the students, a Minimum enrolment in the Elective Subjects shall be TEN.

## **PROJECT REPORT & VIVA VOCE:**

The Project Report must be submitted through the Supervisor and the Head of the Department at the end of the final semester ie following the third semester Examination failing which the candidate will be treated as appearing on a second occasion and shall NOT BE ELIGIBLE for First Class and Ranking.

**MBA – LSCM  
SEMESTER I**

Code	Course	Hour / Week			Credits
		Lecture	Tutorial	Practical	
18CMBS11	Management Principles and Organizational Behaviour	4	0	0	4
18CMBS12	Business Statistics & Quantitative Techniques	4	0	0	4
18CMBS13	Managerial Economics	4	0	0	4
18CMBS14	Financial Reporting, Statements & Analysis	3	1	0	4
18CMBS15	Legal & Business Environment	4	0	0	4
18CMBS16	Business Communication	4	0	0	4
18CMBS17	Computer Applications for Business	4	0	0	4
18PMBS11	Community Development Project / MOOC / Outbound Experiential Learning Programme	0	0	2	1
		<b>27</b>	<b>1</b>	<b>2</b>	<b>29</b>

**SEMESTER II**

Code	Course	Hour / Week			Credits
		Lecture	Tutorial	Practical	
18CMBS21	Human Resources Management	4	0	0	4
18CMBS22	Marketing Management	4	0	0	4
18CMBS23	Operations Management	4	0	0	4
18CMBS....	Elective I	4	0	0	4
18CMBS....	Elective II	4	0	0	4
18CMBS....	Elective III	4	0	0	4
18CMBS....	Elective IV	3	0	0	3



		<b>27</b>	<b>0</b>	<b>0</b>	<b>27</b>
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18IMBS21	Internship	0	0	0	<b>6</b>
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### SEMESTER III

Code	Course	Hour / Week			Credits
		Lecture	Tutorial	Practical	
18CMBS31	Enterprise Resource Planning	4	0	0	4
18CMBS32	Research Methodology	4	0	0	4
18EMBS....	Elective V	3	0	0	3
18EMBS....	Elective VI	3	0	0	3
18EMBS....	Elective VII	3	0	0	3
18EMBS....	Elective VIII	3	0	0	3
18EMBS....	Elective IX	3	0	0	3
18EMBS....	Elective X	3	0	0	3
		<b>26</b>	<b>0</b>	<b>0</b>	<b>26</b>

### SEMESTER IV

Code	Course	Hour / Week			Credits
		Lecture	Tutorial	Practical	
18RMBS41	Project	0	0	28	14
		<b>0</b>	<b>0</b>	<b>28</b>	<b>14</b>

**Total Credits: 102**

**Internship:** The students have to undergo an Internship for thirty days in between second and third semester. The maximum marks for Internship will be 100. The Internship will be evaluated through Viva voce Exam by the guide and an External expert.

**Project:** The students will do a Project work for Four months in the Fourth Semester. The Maximum marks for Project Work will be 300. The project Work will be evaluated through

Viva voce Exam by the guide and an External expert. The components of Project Work will be 100 marks for Dissertation and 200marks for Viva voce.

### ELECTIVE COURSES – II SEMESTER

FUNCTIONAL AREA	CODE	COURSES
Supply Chain	18EMBS21	Supply Chain Information System
	18EMBS22	Supply Chain Concepts & Planning
	18EMBS25	Global SCM
	18EMBS26	Vendor Managed Inventory
	18EMBS27	SCM for Services Marketing
Logistics	18EMBS23	Logistics Concepts & Planning
	18EMBS24	Transportation & Distribution Management
	18EMBS28	Air Cargo Management
	18EMBS29	Multimodal Transportation Management
	18EMBS30	Inland Waterways Management

### ELECTIVE COURSES – III SEMESTER

FUNCTIONAL AREA	CODE	COURSES
Logistics & Supply Chain	18EMBS31	International Logistics
	18EMBS32	Purchasing and Strategic Sourcing
	18EMBS33	Warehousing and Distribution Facilities Management
	18EMBS34	Contract Logistics and Closed Loop Supply chains
	18EMBS35	Logistics & Supply Chain Performance Management
	18EMBS36	Green Supply Chain Management
	18EMBS37	Supply Chain Analytics
	18EMBS38	Sourcing Management
Operations	18EMBS39	Lean Six Sigma
	18EMBS40	Project Management
	18EMBS41	Operations Research Applications
	18EMBS42	Total Quality Management

<b>FUNCTIONAL AREA</b>	<b>CODE</b>	<b>COURSES</b>
	18EMBS43	World Class Manufacturing
	18EMBS44	Behavioural Operations Management
	18EMBS45	Management of Manufacturing Systems
	18EMBS46	Operations Strategy
	18EMBS47	Services Operations Management
Entrepreneurship	18EMBS48	Environmental Studies
	18EMBS49	Indian Ethos and Business Ethics
	18EMBS50	Business Policy & Strategy
	18EMBS51	E-Business

#### **4. REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER:**

- a. Candidates shall register their names for the First Semester Examination after the admission in PG Courses.
- b. Candidates shall be permitted to proceed from, the First Semester up to Final Semester irrespective of their failure in any of the Semester Examination subject to the condition that the candidates should register for all the arrears subjects of earlier semester along with current (subsequent) Semester subjects.
- c. Students appearing for the University examinations must have a minimum of 75% attendance, failing which will not be permitted to write the examinations.
- d. However, the University may condone the attendance shortage of 10% after collecting a condonation fee from the students who have secured 65 to 74% of attendance.
- e. The students who have secured less than 65% attendance are not eligible to write the respective semester examination. He / She has to rejoin and re-do the respective semester course in the next academic year by paying the prescribed tuition fee.
- f. Condonation for deficiency of attendance will not be granted as a matter of routine.

#### **5. EXAMINATIONS:**

There shall be four examinations, first semester examination will be held in Nov/Dec of the first year and the second semester examination at April/May of the first year. Similarly the third and fourth semester examinations will be held during Nov/Dec and April/May of the second year respectively. Max. no. of attempts is 8.

## **6. PASSING MINIMUM:**

- i. A candidate who secures not less than 50 percent marks in the External Written Examination and the aggregate (i.e. Written Examination Marks and the Internal Assessment Marks put together) respectively of each paper shall be declared to have passed the examination in that subject.
- ii.
  - a. A candidate shall be declared to have passed Project Work and Viva-Voce respectively, if he/she secures a minimum 50 percent marks in the Project Work Evaluation and the Viva Voce respectively.
  - b. A candidate failing in any subject will be permitted to appear for the examinations again on a subsequent occasion without putting in any additional attendance.
  - c. A candidate who fails in either Project Work or Viva-Voce shall be permitted to redo the Project Work for evaluation and reappear for the Viva-Voce on a subsequent occasion, if so recommended by the Examiners.
- iii. A Candidate who successfully completes the course and passes the examinations of all the FOUR Semesters prescribed as per Scheme of Examinations earning prescribed CREDITS shall be declared to have qualified for the Degree, provided the whole course has been completed within a maximum of 4 YEARS from the date of initially joining the course in the case of a FULL-TIME candidates.

## **7. CLASSIFICATION OF SUCCESSFUL CANDIDATES:**

Successful candidates securing not less than 60 percent in the aggregate of the marks prescribed for the Course shall be declared to have qualified for the Degree in First Class, provided they have passed the Project Work and the Viva-Voce at the FIRST appearance and the Examination of all the other subjects within TWO YEARS after their admission in the case of FULL-TIME students.

Successful candidates securing not less than 75 percent in the aggregate of the marks prescribed for the Course shall be declared to have qualified for the Degree in First Class with Distinction provided they pass all the examinations prescribed for the course at the First

Appearance / instance. All other successful candidates shall be declared to have passed reexamination in the Second Class.

## 8. GRADING SYSTEM

The following table gives the marks, grade points, letter grades and classification to indicate the performance of the candidate.

**Conversion of Marks to Grade Points and Letter Grade  
(Performance in a Paper /Course)**

Marks	Grade Points	Grade	Description
90-100	10	O	OUTSTANDING
85-89	9	A+	EXCELLENT
80-84	8	A	VERY GOOD
75-79	7.5	B+	GOOD
70-74	7	B	ABOVE AVERAGE
60-69	6	C	AVERAGE
50-59	5	D	MINIMUM FOR PASS
00 - 49	0	RA	REAPPEAR
-		AAA	ABSENT

### Calculation of GPA & CGPA

$$\text{GPA} = \frac{\sum (C \times \text{GP})}{\sum (C)}$$

$$\text{CGPA} = \frac{\sum_{i=1}^n (C_i \times \text{GP}_i)}{\sum_{i=1}^n (C_i)}$$

n = Number of subjects

C = Credit for the academic courses successfully completed

GP = Grade point for the courses successfully completed

GPA = Grade point average for all the courses successfully completed in the current semester examination

CGPA = Cumulative grade point average

### Overall Performance:

CGPA	Grade	Class
5.00 - 5.99	D	Second Class
6.00 - 6.99	C	First Class
7.00 - 7.49	B	
7.50 - 7.99	B+	
8.00 - 8.49	A	First Class with Distinction
8.50 - 8.99	A+	
9.00 - 10.0	O	First Class - Outstanding

\*The candidates who have passed in the first appearance and within the prescribed semester of the PG Programme (Core, Elective, Non-major Electives and Extra-Disciplinary courses alone) are eligible.

### 9. RANKING:

Candidates who pass all the examinations prescribed for the Course In the FIRST APPEARANCE ITSELF ALONE are eligible for Ranking/Distinction provided in the case of Candidates who pass all the examinations prescribed for the Course with a break in the First Appearance due to the reasons as furnished in the Regulations under REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER are only eligible for Classification.

### 10. QUESTION PAPER PATTERN

Total Marks for each subject 100 Marks

University Exam 60 Marks

Internal Assessment 40 Marks

**Duration: 3 Hours Max. Marks: 100**

Part A : 8 out of 10 questions ( 8 X 5 = 40 )

Part B : 4 out of 6 questions ( 4 X 10 = 40 )

Part C : 1 Case Study or Problem is Compulsory ( 1 X 20 = 20 )

**MBA – LSCM**  
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18CMBS13	Managerial Economics	4	0	0	4
18CMBS14	Financial Reporting, Statements &	3	1	0	4

	Analysis				
18CMBS15	Legal & Business Environment	4	0	0	4
18CMBS16	Business Communication	4	0	0	4
18CMBS17	Computer Applications for Business	4	0	0	4
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		<b>27</b>	<b>0</b>	<b>0</b>	<b>27</b>

18IMBS21	Internship	0	0	0	<b>6</b>
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	18EMBS45	Management of Manufacturing Systems
	18EMBS46	Operations Strategy
	18EMBS47	Services Operations Management
Entrepreneurship	18EMBS48	Environmental Studies
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	18EMBS51	E-Business

# **SEMESTER I**

**18CMBS11**

**MANAGEMENT PRINCIPLES AND ORGANIZATIONAL  
BEHAVIOUR**

**4 0 0 4**

**COURSE OBJECTIVE:**

- To describe the fundamentals of Management, significance, scope of management, levels of manager, functions of a manger and basics of organizational behavior.

- To discuss the development of management thought
- To examine and analyze the behavior of individuals and groups in organizations by understanding the concepts of learning, attitudes & perceptions.
- To understand about the organizational structure, its types, decentralization and delegation of the authority.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Discuss about the management and its historical development.
- CO – 2 : Assess the fundamentals of organizational behavior and OB Model.
- CO – 3 : Analyze the behavior of individuals and groups in organizations
- CO – 4 : Summarize the perceptions, learning, attitudes, and motivation in organizations
- CO – 5 : Analyze the teams and organizations, evaluating transaction analysis.
- CO – 6 : Compare and contrast power and influence of leadership
- CO – 7 : Assess the knowledge about the organization structure and its types
- CO – 8 : Describe about the line and staff authority.
- CO – 9 : Demonstrate the dynamics of organizational change.
- CO – 10 : Identify the major issues in business ethics and corporate social responsibility.

### **UNIT I INTRODUCTION TO MANAGEMENT 12**

Introduction to Management and Organizational Behavior: Concept of Management, Applying Management theory in practice, Evolution of management thought, Management process and Functions – Managerial Roles – OB Model – Contributing disciplines of OB – MBO

### **UNIT II INDIVIDUAL PROCESS IN ORGANIZATIONS 12**

Individual Processes in Organizations: Foundations for Individual Behavior – Learning - Attitudes and Job satisfaction – Personality and values – Perception - Motivation and Organizational performance. Contemporary theories of motivation.

### **UNIT III INTERPERSONAL PROCESS IN ORGANIZATIONS 12**

Interpersonal process in Organizations: -Communication Process -Methods – Barriers -Grapevine. Transactional Analysis. Group Dynamics: Typology of Groups -Conflicts in groups - Leadership Models and Concepts – leadership theories – Decision making and negotiation - Power and Politics.

### **UNIT IV ORGANISATIONAL PROCESS 12**

Organizational Process and Characteristics: Dimensions of Organization structure – Authority, Responsibility, and Accountability – Delegation – Centralization, Decentralization – Line and Staff Relationship.

**UNIT V ORGANIZATIONAL DEVELOPMENT 12**

Organizational Development: Resistance to Change - Organizational change - Organizational development – Stress management – Business ethics and corporate social Responsibility.

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Harold Koontz & Heinz Weihrich, “Essentials of Management”, TMH, 10<sup>th</sup> Edition, 2007.

**REFERENCE BOOKS:**

1. Michael A. Hitt, J. Stewart Black, and Lyman W. Porter, Management, Pearson, 11th Edition, 2011.
2. Koontz & Weirich, Essentials of Management, Tata McGraw Hill Publishing Company, New Delhi. Stoner, Freeman & Gilbert, Management, PHI, 6th Edition.
3. Robbins.S.P. Fundamentals of Management, Pearson, 2003. Robbins.S. Organisational Behaviour, X edn., Prentice-Hall, India.

**18CMBS12 BUSINESS STATISTICS & QUANTITATIVE 4 0 0 4**  
**TECHNIQUES**

**COURSE OBJECTIVE:**

- To acquaint the student with the applications of Statistics and Operations Research to business and industry
- To help them to grasp the significance of analytical techniques in decision making.

- To test on the application of Operations Research to business related problems.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Formulation a Linear programming problem.
- CO – 2 : Solve the formulation of Linear programming.
- CO – 3 : Evaluate the initial solution for Transportation Model.
- CO – 4 : Evaluate the solution for Assignment Problem.
- CO – 5 : Minimize the waiting hours of simultaneous projects undertaken.
- CO – 6 : Explain the different network models.
- CO – 7 : Evaluate the solution for game theory.
- CO – 8 : Solve the game theory using dominance.
- CO – 9 : Understand the descriptive statistics and probability.
- CO – 10 : Apply the statistical techniques in reality to market scenario.

### **UNIT I LINEAR PROGRAMMING 12**

Operations Research – Linear programming (LP) – Formulation – Graphical Solutions – Simplex Method – Duality Concepts – Sensitivity Analysis – Using Excel solver to solve LP Problems

### **UNIT II TRANSPORTATION AND ASSIGNMENT 12**

Transportation Model – Initial Solution: North West Corner Rule, Least Cost Method, Vogel’s Approximation method – Assignment Problem.

### **UNIT III NETWORK MODELS 12**

Network Models – Shortest Path Problem: PERT & CPM – Maximum Flow Problem – Minimum Spanning Tree

### **UNIT IV GAME THEORY 12**

Game Theory – Game – Zero-sum games and Non-zero sum games – Pure & Mixed Strategy – Maximin–Minimax Principle – Dominance Property.

### **UNIT V STATISTICS 12**

Introduction – Descriptive Statistics – Hypothesis Testing – T-test – Analysis of Variance – Linear Regression.

**TOTAL: 60 HOURS**

### **TEXT BOOKS:**

2. Tulsian, P. C., Vishal Pandey, Quantitative Techniques – Theory and Problems, Pearson Publications, 2006.
3. Sankar P. Iyer, Operations Research, Tata McGraw-Hill Education, 2008

**REFERENCE BOOKS:**

4. Hamdy A. Taha, Operations Research-An introduction, Pearson Education, 8th Edition / Prentice Hall of India, 2007.
5. A. Ravindren, Don T. Phillips and James J. Solberg, Operations Research Principles and Practice, John Wiley and Sons, 2nd edition, 2000.

**18CMBS13**

**MANAGERIAL ECONOMICS**

**4 0 0 4**

**COURSE OBJECTIVE:**

- The study the concept of Managerial Economics by applying a series of basic economics principles.
- To gain knowledge on issues related to optimal pricing strategies, demand forecasting, and optimal financing, appropriate hiring decisions, and investment decisions, among others,

can be successfully tackled with managerial economics tools.

- To analyse how to incorporate a global perspective to their managerial economics box of tools.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Define the basic elements of managerial economics aspects of the firm.
- CO – 2 : Study the life cycle of a product
- CO – 3 : Forecast demand for a product and decide on the demand decisions.
- CO – 4 : Know what to produce, where to, when to, how to, for whom to.
- CO – 5 : Frame policy for production to minimize the cost and maximum the profit.
- CO – 6 : Construct the cost function.
- CO – 7 : Reorganise the basics of market structures and their environment.
- CO – 8 : Decide on the input and output decisions.
- CO – 9 : Know the basic theories related to business practices.
- CO – 10 : Enable them to take a decision with given business situation

### **UNIT I INTRODUCTION 12**

Introduction to Managerial Economics – Nature and scope of macroeconomics -Incremental principle – equimarginal principle – some decision rules – The risk and uncertainty theory – optimization techniques – Baumol’s sales maximization – least-cost combination.

### **UNIT II DEMAND DECISIONS 12**

Demand Decisions – Demand analysis – elasticity of demand – demand forecasting – types & methods of demand forecasting – trend projection method – least square method of demand forecasting limitations & uses

### **UNIT III OUTPUT DECISIONS 12**

Input-Output Decisions - Production function – Cost and managerial decision making – Cobb-Douglas production functions – Law of variable proportion – short run cost output – long run cost output – economies and dimensions of scale of production.

### **UNIT IV PRICE-OUTPUT DECISIONS 12**

Price-Output Decisions - Market Environment of Price Output Decisions by the Firm and the Industry – Pricing under perfect competition – digopoly pricing strategies and tactics – pricing –



pricing in life-cycle of a product -Profit-Maximization & Competitive Markets-Price-Searchers, Cartels, Oligopoly-Advanced Pricing and Auctions.

**UNIT V ECONOMIC THEORY 12**

The Firm in Theory and Practice - Economic Theory of the Firm – The Behavioral Theory of the Firm - Managerial Theories of the Firm – Profit concepts & analysis – Game Theory and Asymmetric Information.

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Dean Joel, Managerial Economics, PHI, New Delhi, 1976, First Edition
2. Douglas Evan J, Managerial Economics, Theory, Practice & Problems; PHF, New Delhi; 1983, First Edition

**REFERENCE BOOKS:**

1. K.K. Seo, Managerial Economics, Richard D. Irwin Inc. 1988
2. I.C. Dhingra, Essentials of Managerial Economics - Theory, Applications and Cases Sultan Chand, New Delhi, 2003

**18CMBS14 FINANCIAL REPORTING, STATEMENTS & ANALYSIS 3 1 0 4**

**COURSE OBJECTIVE:**

- To think in a new and more creative way when analyzing or forecasting financial information.
- To introduce new tools common to financial statement analysis and how to use them in

practical applications.

- To understand how financial statement information can help solve business problems and increase the ability to read and understand financial statements and related information.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : State the importance of common accounting standards
- CO – 2 : Outline the accounting process
- CO – 3 : Prepare financial statements through ratio analysis.
- CO – 4 : Analyze financial reports of financial instruments, mutual funds,
- CO – 5 : Prepare cash flow and fund flow statement
- CO – 6 : Analyze cash flow and fund flow statement
- CO – 7 : Calculate cost of capital – Debt, Equity, Preference Capital.
- CO – 8 : Identify various sources of Finance
- CO – 9 : Estimate work capital of an organization.
- CO – 10 : Estimate components of work capital.

### **UNIT I INTRODUCTION 12**

Introduction to Management Accounting-Need and Importance — Accounting concepts & conventions – Accounting Standards - Overview of IFRS and GAAP. Mechanics of Accounting: Double entry system of accounting, journalizing of transactions; ledger posting and trial balance, preparation of final accounts, Profit & Loss Account, Balance Sheet.

### **UNIT II ANALYSIS OF FINANCIAL STATEMENTS 12**

Analysis of financial statement: Ratio Analysis- solvency ratios, profitability ratios, activity ratios, liquidity ratios, market capitalization ratios; Common Size Statement; Comparative Balance Sheet and Trend Analysis of manufacturing, service & banking organizations.

### **UNIT III FUNDS FLOW AND CASH FLOW ANALYSIS 12**

Fund Flow Analysis: Meaning – uses – Preparation of Fund Flow Statement. Cash Flow Analysis (as per Accounting Standard 3): Meaning – uses – Preparation of Cash Flow Statement.

### **UNIT IV CAPITAL BUDGETING AND MARGINAL COSTING 12**

Capital budgeting – meaning –steps – different types of investment decisions - Different methods – Payback, Net Present Value, Internal rate of return, Profitability index, Average rate of return –

Capital rationing Marginal costing – Cost Volume Profit analysis – Break Even analysis – Applications of marginal costing

**UNIT V                      BUDGETING AND FINANCIAL REPORTING                      12**

Budgeting – Different types of budgeting – Cash budget – Flexible budget.

Financial reporting – Concepts – users, Objectives of financial reporting – Qualitative characteristics of information in financial reporting – basic problems of disclosure – Role of SEBI in IFRS – Statutory disclosures in IFRS – Corporate reporting practices in India- Challenges in financial reporting

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. R.S.N.Pillai & Bagavathi – Management Accounting, Chand & Co. Ltd., New Delhi, 6<sup>TH</sup> edition 2002.
2. T.S.Reddy & Y.Hari Prasad Reddy – Financial and Management Accounting, Margham publications, 12<sup>TH</sup> edition 2004.

**REFERENCE BOOKS:**

1. M.Y.Khan & P.K.Jain – Management Accounting, Tata McGraw Hill publishing company Ltd., 10th edition 2004.
2. R.Narayanaswamy – Financial accounting – A Managerial Perspective, Prentice Hall India Ltd., New Delhi 5th edition, 2014.
3. Paresh Shah Basic Financial Accounting for Management, Oxford Publications, 3rd edition, 2007

**18CMBS15**

**LEGAL & BUSINESS ENVIRONMENT**

**4 0 0 4**

**COURSE OBJECTIVE:**

- To create the knowledge of Legal perspective and its practices to improvise the business.
- To describe the nature and classes of contracts.

- To identify the elements needed to create a contract.
- To read, interpret the various act related to business, property and business.
- To identify the rights related to copyrights and patents.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Draft a simple employment contract
- CO – 2 : Arrange the basics elements of contracts and classifications of contract
- CO – 3 : Improve their awareness and knowledge about functioning of local business.
- CO – 4 : Improve their awareness and knowledge about functioning of global business.
- CO – 5 : Gather knowledge on evolvement of business enterprises
- CO – 6 : Enhance knowledge on bailment and pledge
- CO – 7 : Encourage learners to differentiate between guarantee and indemnity
- CO – 8 : Proper knowledge on copyrights and trademarks.
- CO – 9 : Gain wisdom on various business protection laws
- CO – 10 : Recognize the functioning of businesses, identifying potential business opportunities.

### **UNIT I INTRODUCTION 12**

Legal Aspect of Business: Introduction to Business Laws- Business Management and Jurisprudence; structure of the Indian Legal Systems: sources of Law; Manager and Legal System

### **UNIT II LEGAL ASPECTS 12**

Fundamentals of contract laws-Formation of Contracts;- Principles of Contract Laws-Legality of Object Consideration; Performance of contract-Discharge of contract- breach of contract-Quasi contracts.

### **UNIT III CONTRACT MANAGEMENT 12**

Contract Management-Special Contracts-Laws of Agency; Principal-Agent Problem-Bailment, Pledge, Guarantee and Indemnity-Sales of Goods- Principles of Sales of Goods.

### **UNIT IV TRANSFER OF OWNERSHIP& PROPERTY 12**

Transfer of Ownership& Property-Performance of contract-Consumer Protection Laws-Law relating to Business Organizations-Partnership Trusts- Company form of organization.

### **UNIT V COPYRIGHTS & TRADEMARKS 12**

Protecting the property of Business-Copyright, Trademark, secret, Geographical Indications-

Alternate Dispute resolutions.

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

2. N.D.Kapoor, Elements of Mercantile Law, S.Chand& Sons, 2013
3. P.P.S.Gogna, Mercantile Law, S. Chand & Co. Ltd., India, Fourth Edition, 2008.
4. Dr. Vinod, K. Singhanian, Direct Taxes Planning and Management, 2008.
5. Richard Stim, Intellectual Property- Copy Rights, Trade Marks, and Patents, Cengage Learning, 2008.

**REFERENCE BOOKS:**

1. Balachandran V., Legal Aspects of Business, Tata McGraw Hill, 20
2. Daniel Albuquerque, Legal Aspect of Business, Oxford, 20
3. Ravinder Kumar– Legal Aspect of Business. – Cengage Learning, 2nd Edition-2011.

**18CMBS16**

**BUSINESS COMMUNICATION**

**4 0 0 4**

**COURSE OBJECTIVE:**

- To study the communication skills

- To apply it in practical business situations, written exercises & e-mails and letters: Re-writing and re-framing of sentences are being delivered.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Recall the basics of communication and its process, elements and importance.
- CO – 2 : Communicate in an effective manner.
- CO – 3 : Shine as a better leader and guide the team with effective communication skills.
- CO – 4 : Application of oral and written communication.
- CO – 5 : Evaluate the effectiveness of revising and checking the messages.
- CO – 6 : Use of appropriate technology for business presentations and digital communication.
- CO – 7 : Write E-mails in a structured pattern
- CO – 8 : Well versed with the skills of writing an email - Introduction, Body and Conclusion.
- CO – 9 : Employ the art of report preparation and writing various types of letters.
- CO – 10 : Develop the skills of oral presentation.

### **UNIT I INTRODUCTION 12**

Fundamentals of Communication, Business Communication, The Communication Model, Communicating in teams, Overcoming the Barriers to Communication. Just-A-Minute Presentation Workshop-Jam Feedback and overcoming Glossophobia-Presentation–1 (Planning & Preparing)

### **UNIT II OVERVIEW 12**

Non-verbal communication, Introducing the 7 Cs of business writing – Candid, Clarity, Complete, Concise, Concrete, Correct and Courteous, Writing business messages, The Stages in writing, Pre writing, Writing and Post writing.

### **UNIT III REVISING AND CHECKING MESSAGES 12**

Revising to improve the content and sentence structure, Avoiding redundant phrases and words, Proof-reading to correct grammar, spelling, punctuation, format, and mechanics, Evaluating whether the message achieves its purpose.

### **UNIT IV EMAIL WRITING 12**

The Process of Writing E Mails, Breaking it Down – The PAIBO Technique, Structuring an E Mail – The 3 T’s – Introduction, Body and Conclusion, Effective Subject lines, Salutation and Signing off. Presentation–3 (Delivery)-Graded Team Presentations-Group 1-Graded Team Presentations-

Group 2-Reading, listening & Questioning.

**UNIT V                      REPORTS AND PRESENTATIONS                      12**

Writing Business Communication basics-Writing Reports, Proposals Business reports and Proposals, Format, visual aids and contents, Oral Business presentations. Individual Presentations- Group 1- Graded Individual Presentations- Group 2-Presentation feedback, Bios and Resumes, Presentation-Visual Aids.

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Sanjay Kumar & Pushpalatha, Communication Skills, Oxford University Press, 2011.
2. Kaul & Asha, Effective Business Communication, PHI 2<sup>nd</sup> Edition, 2006.

**REFERENCE BOOKS:**

1. Lesikar R.V & Flatley M V, Basic Communication Skills for empowering the internet generation, Tata-McGraw Hill, 2009.
2. Sharma R C & Mohan K, Business Correspondence & Report Writing, TMH, 2009.

**18CMBS17**

**COMPUTER APPLICATIONS FOR BUSINESS**

**4 0 0 4**

**COURSE OBJECTIVE:**

- To introduce the essential concepts necessary to make effective use of the computer.
- To understand what a computer can do, how it works, and how it can be used to create documents using word processing and spreadsheet applications for personal and business use.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Evaluate the fundamentals of internet with regard to its safety
- CO – 2 : Explain the basics of hardware and software.
- CO – 3 : Identify different components of hardware systems, cables & assemblies.
- CO – 4 : Discuss about the file management, word processing.
- CO – 5 : Demonstrate working with Graphics, Document Commands, Mail Merge, Spreadsheets.
- CO – 6 : Demonstrate the ease to work with MS Word.
- CO – 7 : Explain the fundamentals of MS EXCEL with various functions and commands.
- CO – 8 : Demonstrate the working of MS Excel using filters, templates, preparations of charts.
- CO – 9 : Elucidate the need of MS PowerPoint, design & templates
- CO – 10 : Manipulate records, creating records and web designing using MS Powerpoint.

### **UNIT I INTRODUCTION TO BASICS 12**

Internet Basics, Internet Safety, Hardware/Software Basics.

### **UNIT II IDENTIFY COMPONENTS OF A HARDWARE SYSTEM 12**

Identify Components of a Hardware System, Cables and Assembly. Application vs. Operating Software, File Management Word Processing.

### **UNIT III MICROSOFT WORD 12**

Microsoft Word, Terminology , Word Basics , Editing , Helpful Word ,Features , Formatting Literacy at the keyboard Word Processing – Microsoft Word – Continued, Formatting , Document Commands, Mail Merge , Spreadsheets .

### **UNIT IV MICROSOFT EXCEL 12**

Microsoft Excel , Terminology Excel Basics , Formatting Worksheets , Organizing the Worksheet ,Formulas/Functions Spreadsheets – Microsoft Excel – Continued , Formulas/Functions, Continued , Sorting, Filters, and Templates , Charts , Presentations .



**UNIT V                    MICROSOFT POWERPOINT****12**

Microsoft PowerPoint , Terminology , Design Guidelines , PowerPoint Basics , Design Templates/Fonts, Presentations – Continued ,Group & Individual PowerPoint Projects , Databases – Microsoft Access Terminology , Access Basics , Creating/Modifying Forms , Finding/Ordering Data (Queries & Filters) , Creating Reports.

**TOTAL: 60 HOURS****TEXT BOOKS:**

1. Turban Rainer and Potter – Introduction to Information Technology, John Wiley & Sons, 2005.
2. Richard D Gitlin, Jeremiah F Hayes, Stephen B Weinstein, Data Communications Principles, Springer, 1992

**REFERENCE BOOKS:**

1. William Stallings, Data and Computer Communications, Prentice Hall, 2007
2. Behrouz A. Forouzan, DeAnza College, Data Communications and Networking, McGraw-Hills, 2007
3. N.D.Birrell, M.A. Ould, A Practical Handbook for Software Development, Cambridge University Press, 1988
4. Sanjay Saxena, A first course in computers, Vikas Publishing House Pt. Ltd. 2000

# **SEMESTER II**

**COURSE OBJECTIVE:**

- To teach relevant, practical and applicable human resource management skills to equip the student with the foundation competencies for working as HR practitioners in business.
- To highlight the important challenges facing managers and employees in today's business climate.
- To introduce contemporary theory and practice in modern human resource management and the range of tools and methods available to address HR challenges and problems.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Discuss the History and evolution of HRM.
- CO – 2 : Explain the importance of HRM in the organizations
- CO – 3 : Assess the major HRM functions and processes of HRM planning
- CO – 4 : Identify strategic HR planning and the HRM process to the organization's strategic.
- CO – 5 : Explain how training helps to improve the employee performance.
- CO – 6 : Debate the concept of career development and various career stages
- CO – 7 : Compare the difference between coaching and mentoring
- CO – 8 : Analyze the emerging trends, opportunities and challenges in performance appraisal.
- CO – 9 : Apply the Concept of job application and how it is practically applied in the org.
- CO – 10 : Restate various recent techniques related to HRM.

**UNIT I HUMAN RESOURCE MANAGEMENT 12**

Meaning, Scope & Objectives of HRM, Evolution of HRM, Difference between PM & HRM, HRM function's, HR Policy & procedures. Competitive challenges influencing HRM Qualities & qualification of HR Manager, Line & Staff Roles and Responsibilities of HR Manager/Departments, HR as a factor of Competitive Advantage

**UNIT II HUMAN RESOURCE PROCESS 12**

Human Resource Planning – Job Analysis and Design -Recruitment - Selection and placement process – Types of interviews, Placement, Orientation & Induction, Determining training needs analysis, Delivery Methodology, Evaluation, Capacity Building.

**UNIT III MANAGING CAREERS 12**

Career Planning & Development vs. Employee development. Career stages – Career Choices and Preferences, Mentoring and Coaching, Time Management. Employee Separations, Downsizing & Outplacement, HRIS, Fundamentals of Industrial Relations and Fundamentals of Labour Laws

**UNIT IV                      PERFORMANCE MANAGEMENT    12**

Purposes of Performance Management, Performance Appraisal Methods, limitations and problems, Punishment and Promotion, Job evaluation. Wage & Salary fixation, incentives, bonus, ESOPs. Insurance, Fringe Benefits.

**UNIT V                      CONTEMPORARY ISSUES IN HRM    12**

Talent Management, Competency Mapping, Industrial Relations – Health & Safety issues, grievance handling, D Work Life Balance, Quality of Work Life, HRD in India, International HRM

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Aswathappa.K, Human Resource Management, Text and Cases, Tata McGraw Hill, New Delhi. 2014
2. Gupta. S.C, Advanced Human Resource Management, Strategic Perspective, ANE Books Pvt. Ltd, New Delhi.2009.

**REFERENCE BOOKS:**

5. Angela Baron and Michael Armstrong, Human Capital Management (Achieving Added Value through People), Kogan Page Limited, United States. 2007
6. Anuradha Sharma and Aradhana Khandekar Strategic Human Resource Management. Response Books, New Delhi. 2006
7. Beer et al, Managing Human Assets, The Free Press: Maxwell Mac Millan Inc, New York. 1984

**COURSE OBJECTIVE:**

- To understand the basics of market, marketing, marketing environment and business environment and its domain knowledge.
- To understand the core concepts in marketing concepts, critical thinking, problem solving an analysis

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Relate the corporate function of marketing.
- CO – 2 : Outline the macro and micro environment in moulding the company marketing function.
- CO – 3 : Differentiate the consumer and institutional buyer behaviour.
- CO – 4 : Compare and contrast goods and services.
- CO – 5 : Define the target segments for the products
- CO – 6 : Employ the positioning strategies used by the companies for their products.
- CO – 7 : Label the importance of products, branding and new product development.
- CO – 8 : Classify the importance of integrated marketing communications.
- CO – 9 : Dramatise the importance of marketing research in decision making.
- CO – 10 : Choose plan for the future demand based on prediction.

**UNIT I INTRODUCTION 12**

Understanding the term Marketing-Importance of Marketing-Scope of Marketing-Core Concepts-Company Orientation toward marketplace-Marketing and Customer Value-Marketing Environment-Micro and Macro Environment.

**UNIT II CONSUMER MARKETS 12**

Consumer Markets: Model of Consumer Behavior, Seven Os Structure, Factors Affecting Consumer Behavior, Stages in the Adoption Process, Industrial Markets -Characteristics, Industrial Buyer Behavior, Service Marketing-Characteristics-Marketing Strategy.

**UNIT III MARKET SEGMENTATION 12**

Market Segmentation: Levels and Bases for Segmentation, Segmenting Consumer Markets, Business Markets, Market Targeting -Evaluating Market Segments -Product Positioning for

competitive advantage, Positioning Strategies.

**UNIT IV                      MARKETING PROGRAMME                      12**

Marketing Programme: Decisions Involved in Product, Branding, Packaging, Product Extension Strategies - Product Line and Product Mix Decisions, New Product Development, Product Life Cycle. Pricing Products, Strategies, Distribution -Channels, Channel Management Decisions, Promotion Mix - Advertising, Sales Promotion, Public Relations, Personal Selling, Promotion Decisions, Place.

**UNIT V                      MARKETING RESEARCH                      12**

Marketing Research and Control: Marketing Research – Course Objectives: & Scope – Research designs – research procedure – data types & sources, sampling techniques, analysis & reporting. Demand Measurement and Sales Forecasting Methods, Estimating Current and Future Demand. Annual Plan Control, Efficiency Control, Profitability Control and Strategic Control, Marketing Audit, Online Marketing. Ethics in marketing.

**Case study:** Marketing strategy Implementation; Market Segmentation / Targeting / Positioning; Product Levels, Pricing

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Philip Kotler and Kevin Lane Keller, Marketing Management, PHI 14th Edition, 2010. 2. KS Chandrasekar, “Marketing management-Text and Cases”, Tata McGraw-Hill-Vijaynicole, First edition, 2010.
2. Lamb, Hair and McDaniel, Marketing, 8th Edition, Thomson Learning, 2005, Rajan Saxena, Marketing management, TMH, 2006.

**REFERENCE BOOKS:**

1. Keith Blois, Marketing, Oxford University Press, 2005.
2. Ramaswamy V.S. Namakumari S, Marketing Management - The Indian Context, Macmillan India Ltd, 2006.

## **COURSE OBJECTIVE:**

- To provide foundational knowledge associated with the operations management
- To describe the various techniques for implementation of operations management based on the forecasting, planning, quality and inventory

## **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the fundamental concepts of operations and production.
- CO – 2 : Understand the types of production systems and layout.
- CO – 3 : Explain the fundamental concepts of forecasting.
- CO – 4 : Predict the demand using the different forecasting techniques.
- CO – 5 : Explain the fundamental concepts of various planning.
- CO – 6 : Explain the different types of planning techniques.
- CO – 7 : Illustrate the quality definition based on the gurus.
- CO – 8 : Explain the different types of quality tools and techniques.
- CO – 9 : Explain the concepts of pull and push system.
- CO – 10 : Identify the different types of inventory models.

## **UNIT I INTRODUCTION 12**

History – Production Vs. Operations – Production Systems – Types of Production Systems – Plant Location – Factors influencing location – Site selection – Plant Layout – Types of Layout – Assembly Line Balancing

## **UNIT II FORECASTING 12**

Introduction – Forecasting technique: Qualitative and Quantitative – Delphi Method – Regression Analysis – Time series analysis – Application – Forecasting Error

## **UNIT III PLANNING 12**

Capacity Planning – Aggregate Production Planning (APP) – Disaggregation: Master Production Scheduling (MPS) – Material Requirement Planning (MRP) – Production Planning and Control (PPC)

## **UNIT IV QUALITY 12**

Evolution of Quality – Quality Definition and Contributions by Deming, Juran, Crosby, Feigenbaum, Ishikawa and Taguchi – Process Quality Vs. Product Quality – Statistical Quality

Control – Statistical Process Control

**UNIT V INVENTORY MANAGEMENT**

**12**

Inventory Management – Types of Inventory Models – Basic EOQ Model – Analysis: ABC, VED, FSN – Push Vs. Pull system – Just-In-Time (JIT) Vs. Material Requirement Planning (MRP)

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Ajay Garg. Production and Operations Management, Tata McGraw-Hill Education, 2017.
2. Stevenson J. William, Operations Management, 9th Edition, TMH, 2007.

**REFERENCE BOOKS:**

1. Roger Schroeder, Susan Goldstein, M. Johnny Rungtusanatham. Operations Management, McGraw-Hill Education, 2010.
2. Lee J. Krajewski and Larry P. Ritzman, 2007, Operations Management strategy and analysis, 9th Edition, Pearson Education / Prentice Hall of India, 2007.

**ELECTIVE COURSES – SUPPLY CHAIN**



**COURSE OBJECTIVE:**

- To explain the various technological aspects that are described in the different logistical background
- To explain the real time description updated technologies in the logistics sector and supply chain industry

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain about eSCM, benefits and communication networks.
- CO – 2 : Explain about data security in communication networks.
- CO – 3 : Explain about the various e-commerce models.
- CO – 4 : Explain about the various enterprise information systems and their benefits.
- CO – 5 : Explain the classification of enterprise information systems.
- CO – 6 : Explain about information architecture.
- CO – 7 : Explain the framework for managing supply chain information.
- CO – 8 : Explain about the various information systems development methodologies.
- CO – 9 : Explain about the various enterprise architectures.
- CO – 10 : Explain the various information system deployment methods.

**UNIT I ELECTRONICSCM,COMMUNICATIONNETWORKS 12**

Introduction eSCM - eSCM framework - Key success factors for eSCM - Benefits of eSCM- Positioning information in Logistics - Strategic information linkage - Supply chain communication networks - Role of communication networks in supplychains - Overview of telecommunication networks –EDI - Data security in supply chain networks - Overview of internet able models

**UNIT II ENTERPRISE INFORMATION SYSTEMS 12**

Overview of enterprise information systems - Information functionality and principles - Introduction enterprise information systems -Classification of enterprise information systems - Information architecture -Framework for managing supply chain information - Describe ion on popular enterprise application packages -Benefits of enterprise information systems

**UNIT III SCM SYSTEMS DEVELOPMENT 12**

Stakeholders in supply chain information systems - Stakeholders in SCM - Stakeholders in supply chain information systems - Information systems development- Logistics information systems design- Defining enterprise architecture - Choosing appropriate system development methodologies - Adopting relevant systems development model

**UNIT IV                  DEPLOYMENT AND MANAGEMENT                  12**

Information systems deployment - IT Operations and infrastructure management - Portfolio, programme and project management - Management of risk - Management of value

**UNIT V                  INFORMATION INTEGRATION                  12**

Enterprise application integration and supply chain visibility - Enterprise application integration - Supply chain visibility - Supply chain event management -Supply chain performance -Planning and design methodology - Problem definition and planning - Data collection and analysis - Recommendations and implementation -Decision support systems

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Donald Bowersox, DavidCloss,& Bixbycooper Supply chain Logistical Management
2. R.H. Ballou, and Samir Business Logistics Management,5th Edition 2014

**REFERENCE BOOKS:**

1. Strauss, Alexa & Frost E-Marketing, Routledge; 8th New edition edition 2018
2. Statistics for Managers Using MS Excel, 8th Edition Levine & David Pearson Education 2017
3. David B. Grant & Chee Yew Wong Sustainable Logistics and Supply Chain Management: Principles and Practices for Sustainable Operations and Management Kogan Page; 2 edition April 3, 2017

**COURSE OBJECTIVE:**

- To describe the various streams of the supply chain
- To describe the drivers of the supply chain
- To describe the concepts employed in the supply chain
- To explain about the strategies employed in the supply chain

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Identify the concepts of supply chain.
- CO – 2 : Classify logistics and supply chain management
- CO – 3 : Identify the difference between service and manufacturing supply chains.
- CO – 4 : Analyze supply chain dynamics and various issues of supply chain performance.
- CO – 5 : Relate the supply chain processes.
- CO – 6 : Develop the supply chain strategies.
- CO – 7 : Plan about supply chain outsourcing.
- CO – 8 : Select the various drivers of supply chain performance.
- CO – 9 : Identify about demand forecasting and learn about the various forecasting techniques.
- CO – 10 : Design about sales and operations planning process

**UNIT I CONCEPTS OF SUPPLY CHAIN 12**

Service and manufacturing supply chain dynamics - Evolution of supply chain management - Multiple views and flows - Service supply chains - Manufacturing supply chains - Measures of supply chain performance - Bullwhip effect

**UNIT II SUPPLY CHAIN PROCESSES AND STRATEGIES 12**

Integrated supply chains design - Customer relationship process - Order fulfillment process - Supplier relationship process - Supply chain strategies - Strategic focus - Mass customization - Lean supply chains - Outsourcing and offshoring - Virtual supply chains.

**UNIT III SUPPLY CHAIN PERFORMANCE DRIVERS 12**

Drivers of supply chain performance - Logistics drivers (Location, inventory and transportation) - Cross functional drivers (Pricing, information and sourcing) – Forecasting introduction - Framework for a forecast system - Choosing right forecasting technique - Judgment methods

(Composite Forecasts, Surveys, Delphi Method, Scenario Building, Technology Forecasting, Forecast by Analogy) - Causal methods (Regression Analysis -Linear & Non-Linear Regression, Econometrics) - Time series analysis (Autoregressive Moving Average (ARMA), Exponential Smoothing, Extrapolation, Linear Prediction, Trend Estimation, Growth Curve, Box-Jenkins Approach) – CPFR

**UNIT IV SALES AND OPERATIONS PLANNING 12**

Introduction to Sales and operations planning - Purpose of sales and operations plans - Decision context - Sales and operations planning as a process - Overview of decision support tools

**UNIT V RESOURCE PLANNING AND SCHEDULING 12**

Enterprise resource planning - Planning and control systems for manufacturers - Materials requirement planning - Drum – Buffer – Rope system – Scheduling - Scheduling service and manufacturing processes - Scheduling customer demand - Scheduling employees - Operations scheduling.

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Sunil Chopra, Peter Meindl, Supply Chain Management: Strategy, Planning, and Operation, Pearson 6th Edition, 2016.
2. Janat Shah, Supply Chain Management, Pearson Education India, 2nd Edition 2016
3. Li tong group announces global framework agreement with VEON. 2018

**REFERENCE BOOKS:**

1. Paul Schönsleben, Integral Logistics Management: Planning and Control of Comprehensive Supply, ACRC Press Company, 2016.
2. David Frederick Ross, Distribution Planning and Control: Managing in the Era of Supply Chain last edition, Springer, 2015.

**COURSE OBJECTIVE:**

- To gain knowledge in global logistics and risk management and to do logistics management globally.
- To understand the requirements and regulations involved in doing logistics globally.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : State the factors influencing global market forces.
- CO – 2 : Identify the factors influencing technological forces.
- CO – 3 : Enumerate the sources of risks.
- CO – 4 : Outline the management of global risks.
- CO – 5 : List the issues in international supply chain management.
- CO – 6 : Clarify the regional and cultural differences in logistics.
- CO – 7 : Elaborate the requirements of global strategy.
- CO – 8 : Explain the global strategy implementation.
- CO – 9 : State the role of human resource in global strategy.
- CO – 10 : Analyze the cultural risks during implementation.

**UNIT I GLOBAL LOGISTICS 9**

Introduction – Global Logistics Meaning and Definition – Global market forces – Factors Influencing Global Market Forces – Factors Influencing Technological Forces – Technological Forces – Global Cost Forces – Political and Economic Forces

**UNIT II RISK MANAGEMENT 9**

Introduction – Risk Management – Meaning and Definition – Many Sources of Risks – Managing the Unknown Factors – Introduction to Global Risks-Global Risks – Managing Global Risks.

**UNIT III INTERNATIONAL SUPPLY CHAIN MANAGEMENT 9**

Introduction to International Supply chain – Issues in International Supply Chain Management International versus Regional Product- International versus Regional Products.

**UNIT IV PERFORMANCE EXPECTATION AND EVALUATION 9**

Regional differences in Logistics – Cultural differences in different places – Geographic information Systems- Infrastructure – Performance Expectation and Evaluation.

**UNIT V                    GLOBAL STRATEGY IMPLEMENTATION**

**9**

Requirements for Global Strategy – Global Strategy implementation – Miscellaneous Dangers  
Information system Availability – Human Resources – role – significance.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Pierre David, International Logistics: The Management of International Trade Operations  
Paperback – Import, 1 Dec 2013.
2. John Mangan, Chandra Lalwani, “Global Logistics and Supply Chain Management”, Tim  
Butcher John Wiley & Sons, 2nd Edition, 2011.

**REFERENCE BOOKS:**

1. David Simchi, Levi, Philip Kaminsky, Ravi Shankar, “Designing & Managing the Supply  
Chain”, Tata McGraw Hill, 14th Edition, 2010.
2. Ross.D.F, “Competing through Supply Chain Management”, Chapman & Hall, 6th Edition,  
2009.
3. Woods.D,A. Barone,P.Murphy, D.Wardlow, “International logistics”, Chapman & Hall,  
1998.

**COURSE OBJECTIVE:**

- To provide a mutually explaining of how the customer uses its goods over the course of a year. Vendor managed inventory (VMI) implementations can be challenging. They not only require collaboration between the retailer and manufacturer;
- To integrate with technology and operations platforms.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Survey and analyse cooperation between different parts of an organisation
- CO – 2 : Explain the impact that the type of demand for goods and services
- CO – 3 : Explain the inventory management models that help plan the inventory orders
- CO – 4 : Evaluate the efficiency of Vendor Managed Inventory.
- CO – 5 : Describe operational procurement processes and be able to explain procurement
- CO – 6 : Describe the role of information technology in managing inventories
- CO – 7 : Describe the rationale behind the application of vendor based inventory.
- CO – 8 : Demonstrate how inventory control fits into the logistics organization.
- CO – 9 : Learn how to use physical inventories and cycle counting
- CO – 10 : Incorporate the concepts of supply chain integration in real time business

**UNIT I SCM****9**

What is SCM- Logistics Network Configuration-Model development-Model validation-Impact of aggregating customer & products on model accuracy-Number of required distribution centers-Inventory Management & Risk Pooling- Centralized versus decentralized systems-Managing inventory in the supply chain-Practical issues. Approaches forecast future demand-Inventory Management & Risk Pooling-The Value of Information

**UNIT II SUPPLY CHAIN COORDINATION STRUCTURES****9**

The bullwhip effect - Information sharing & decision rights-Centralized and decentralized decision-making and performance impact-The Value of Information-Effective forecasts-Information for the coordination of systems-Locating desired products-Lead-time reduction-Information and supply chain trade-offs-the Value of Information-Supply Chain Integration Implications of Demand and Supply Uncertainty

**UNIT III                    SUPPLY CHAIN INTEGRATION                    9**

Push, pull, and push-pull systems-Demand-driven strategies-Impact of the Internet on supply chain strategies-Distribution strategies-Centralized versus decentralized control-Central versus local facilities-strategic Alliances-Framework for strategic alliances-Third-party logistics-Retailer-Supplier Partnerships-Distributor integration-Procurement and Outsourcing Strategies-Outsourcing benefits and risks-A Framework for Buy/Make Decisions-E-Procurement-A Framework for E-Procurement-Online Marketplaces

**UNIT IV                    SUPPLY CHAIN DESIGN                    9**

Design for logistics-Supplier integration in new product development-Mass customization-Coordinated Product and Supply Chain Design-Customer Value and Supply Chain Management-Dimensions of customer value-Strategic pricing-Customer value measures

**UNIT V                    INFORMATION TECHNOLOGY                    9**

IT and customer value- Information Technology for SCM-Goals of IT for SCM-Standardization-IT infrastructure-SCM system components-Integrating IT for SCM-decision Support Systems for SCM

International Issues in Supply Chain Management-Introduction global SCM-Risks and advantages of international supply chains-Issues in international supply chain management-Regional differences in Logistics

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. S Jaya Krishna, Business transformation outsourcing: An Introduction Paperback, ICFAI press 2017
2. Dominika Spsychalska, Vendor Managed Inventory: Exploring objectives, benefits and shortcomings of the business concept, Lap Lambert Academic Publishing, 2010

**REFERENCE BOOKS:**

1. SilaÇetinkaya& Chung-Yee Lee, Stock Replenishment and Shipment Scheduling for Vendor-Managed Inventory Systems, Management Science, 2008
2. Tempelmeier, Inventory Management in Supply Networks—Problems, Models, Solutions, Norderstedt, 2<sup>nd</sup> edition 2011.



**COURSE OBJECTIVE:**

- To relate the strategy in supply chain management for a seamless integration of the distribution channels.
- To explain how technology can ease the cost and efficiency of the SCM of services.
- To realize the importance of distribution in the services marketing.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Differentiate the difference between goods and services.
- CO – 2 : Plan the SCM aspects with reference to non- profit organization and profit organization.
- CO – 3 : Explain the importance of channel members.
- CO – 4 : Explain the logistical and facilitating functions of the intermediaries.
- CO – 5 : Eliminate the vertical and horizontal conflicts in channel.
- CO – 6 : Explain the reach the consumers effectively.
- CO – 7 : Explain the use of technology in the distribution chain.
- CO – 8 : Create a cost effective integration of channel partners.
- CO – 9 : Make use of the contemporary techniques in service marketing.
- CO – 10 : Explain the trends in service marketing.

**UNIT I SERVICES MARKETING AND SCM 9**

Services Marketing, Channels & Supply Chain Management: The Difference Between Services and Goods-Services Marketing: The Difference Between Services and Goods- How Non-Profit Marketing Differs from For-Profit Marketing

**UNIT II MARKETING CHANNEL 9**

Definition and Function in the Marketplace- Channel Intermediaries: Definition and Function in Business Channel Intermediaries: Definition and Function in Business- physical distribution strategy, logistical and facilitating functions.

**UNIT III CHANNEL CONFLICT 9**

Horizontal & Vertical Conflict- pricing, distribution and logistical operations. The channel members: goal- comprehensive channel partnership-Eliminate conflict-drive product efficiently



## **ELECTIVE COURSES – LOGISTICS**

**18EMBS23**

**LOGISTICS CONCEPTS AND PLANNING**

**4 0 0 4**

### **COURSE OBJECTIVE:**

- To get clear view about the concepts employed in the different logistical background a
- To explain the process related the logistical industry
- To explain the different drivers of logistics.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the scope of logistics in business.
- CO – 2 : Explain logistics and supply chain management
- CO – 3 : Explain the core and support activities in logistics.
- CO – 4 : Explain about the logistical integration hierarchy
- CO – 5 : Explain the various issues in logistics integration.
- CO – 6 : Explain about the logistical performance cycles.
- CO – 7 : Explain about the logistics channel participants and supply chain relationships.
- CO – 8 : Explain about the various risks involved in logistics.
- CO – 9 : Explain about logistics re-engineering.
- CO – 10 : Explain about logistical environmental assessment and other logistics systems.

### **UNIT I INTRODUCTION LOGISTICS**

**12**

Introduction – Scope of logistics in business, Logistics and Supply Chain Management, Core and support activities of logistics; Logistical integration hierarchy; Integrated Logistics; Operating objectives; Barriers internal integration; Logistical performance cycles; Supply chain relationships – Channel participants, Channel structure, Basic functions, Risk, power and leadership.

### **UNIT II LOGISTICS SYSTEM DESIGN**

**12**

Logistics reengineering, Logistical environmental assessment, Time based logistics, Anticipatory and Response based strategies, Alternative strategies, Logistical operational arrangements, Time based control techniques; Integration theory – Location structure, Transportation economies, Inventory economies, Formulating logistics strategy.

### **UNIT III LOGISTICS STRATEGY AND PLANNING**

**12**

Logistics planning triangle, Network appraisal; Guidelines for strategy formulation – total cost concept, Setting customer service level, Setting number of warehouses in logistics system, Setting safety stock levels, Differential distribution, Postponement, Consolidation, Selecting proper channel strategy.

**UNIT IV INVENTORY AND PURCHASING 12**

Review – Inventory and purchasing decisions; Multi facility location problems – Exact method, Heuristic methods, other methods; Logistics planning and design – Feasibility analysis, Project planning, Assumptions and data collection, Analysis, Development of recommendation, Implementation.

**UNIT V LOCATION DECISIONS 12**

Planning and design techniques – Logistics adhoc analysis, Location analysis, Inventory analysis, Transportation analysis

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Pierre A. David International Logistics: the Management of International Trade Operations 5th Edition 2017.
2. R.H.Ballou, Business Logistics Management, Prentice-Hall, 2004

**REFERENCE BOOKS:**

1. Richard Lloyd Successful Integrated Planning for the Supply Chain: Key Organizational and Human Dynamics Kogan Page; 1 edition March 2018
2. John J. Coyle, Edward J. Bardi and C. John Langley Jr., The Management of Business Logistics - A supply chain Perspective, Thomson Business Information, 10<sup>th</sup> edition 2016.
3. Vinod V. Sople, Logistics Management, Pearson Education, 2<sup>nd</sup> edition 2009

**COURSE OBJECTIVE:**

- To explore the fundamental concepts of transportation and distribution management
- To gain knowledge in network planning, routing and scheduling and application of IT in transportation and distribution management.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Design well versed in distribution techniques in the supply chain.
- CO – 2 : Develop the various distribution network models
- CO – 3 : Make use of the advantages and disadvantages of the various models.
- CO – 4 : Plan for the different distribution networks
- CO – 5 : Gain knowledge about the distribution requirements planning.
- CO – 6 : Rewrite the role of transportation in logistics and business.
- CO – 7 : Predict the scope and relationship of transportation with other business functions
- CO – 8 : Illustrate on the various modes of transportation and the selection decisions.
- CO – 9 : Gain well verse knowledge on vehicle routing and scheduling.
- CO – 10 : Identify the issues involved in international transportation.

**UNIT I DISTRIBUTION 9**

Role of Distribution in Supply chain, Distribution channels – Functions, resources, Operations in Distribution, Designing Distribution network models - its features - advantages and disadvantages

**UNIT II PLANNING 9**

Distribution network planning, Distribution network decisions, Distribution requirement planning (DRP)

**UNIT III TRANSPORTATION 9**

Role of Transportation in Logistics and Business, Principle and Participants-Scope and relationship with other business functions, Modes of Transportation - Mode and Carrier selection, Routing and scheduling.

**UNIT IV TRANSPORTATION 9**

International transportation, Carrier, Freight and Fleet management, Transportation management

systems-Administration, Rate negotiation, Trends in Transportation.

**UNIT V INFORMATION TECHNOLOGY (IT) 9**

Usage of IT applications -E commerce – ITMS, Communication systems-Automatic vehicle location systems, Geographic information Systems.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. David Lowe, Lowe's Transport Manager's and Operator's Handbook 2019
2. Janat Shah, Supply Chain Management, Pearson Education India, 2nd edition 2016
3. Raghuram and N. Rangaraj, Logistics and Supply chain Management - Leveraging Mathematical and Analytical Models: Cases and Concepts, New Delhi: Macmillan, 2000.

**REFERENCE BOOKS:**

1. Sunil Chopra, Peter Meindl, Supply Chain Management: Strategy, Planning, and Operation, Pearson, 6th edition 2014.
2. Michael B Stroh, Practical Guide to Transportation and Logistics, Logistics Network, 2006.
3. Alan Rushton, John Oxley, Handbook of Logistics & Distribution Management, Kogan Page Publishers, 2006.

**COURSE OBJECTIVE:**

- To provide the participants with a good knowledge of airfreight operations, services and management that can support them in various business functions and roles such as operations, customer service, account management and sales.
- To create awareness about the Air Cargo management.
- To provide general information or a framework on the setup of air cargo processes, for business.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Learn about the airports and aircrafts.
- CO – 2 : Explain the basic air cargo terminologies and phonetic alphabets.
- CO – 3 : Explain about the various participants in air cargo transportation.
- CO – 4 : Explain the role of a custodian in air cargo.
- CO – 5 : Explain the role of freight forwarders and customs brokers.
- CO – 6 : Know about the various IATA and ICAO airport and airline codes.
- CO – 7 : Explain about the air transport and IATA.
- CO – 8 : Explain the roles of GSSA and the GHA.
- CO – 9 : Explain about air mode of transportation.
- CO – 10 : Learn about the various aspects air cargo transport.

**UNIT I AIR PORTS AND SHIPMENT 9**

Ground Handling Agencies - Air Craft - Advantage of Air shipment - Economics of Air Shipment - Sensitive Cargo by Air shipment - Do's and Don'ts in Air Cargo Business

**UNIT II AIR CARGO 9**

Air Cargo Console - Freight of Air Cargo - Volume based Calculation of Freight - Weight based Calculation of Freight - Import Documentation - Export Documentation

**UNIT III AIRWAY BILLS 9**

Airway Bills - FIATA - IATA - History of IATA - Mission of IATA - Price setting by IATA - Licensing of Agencies - Sub Leasing of Agencies - freight carriers by scheduled freight tonne kilometers flown





**COURSE OBJECTIVE:**

- To describe the introduction of Multimodal Transportation management and its various distribution models
- To discuss in detail through understanding of various tariffs applicable in sea/air/rail/road/pipeline transportation.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Describe the various issues in multimodal transportation.
- CO – 2 : Describe the various participants in multimodal transportation.
- CO – 3 : Describe the various modes of international multimodal transportation.
- CO – 4 : Describe about the multimodal and intermodal transportation.
- CO – 5 : Describe about the freight costing and pricing.
- CO – 6 : Describe various issues involved in the rail mode of transportation.
- CO – 7 : Describe about the air transport and IATA.
- CO – 8 : Describe about maritime transportation.
- CO – 9 : Describe about air modes of transportation.
- CO – 10 : Discuss about the various aspects air cargo transport.

**UNIT I MULTI MODAL TRANSPORTATION 9**

Multimodal transportation - Introduction, growth and components, Physical multi modal operations – Interrelationship of transport mode, Specialised container equipments – FCL, LCL and Customs facilitation.

**UNIT II MULTIMODAL TRADE ROUTES 9**

Multimodal trade routes – factors affecting Mode and Route choices, Multimodal transport operators – Types of Vessel Operators –Other provisions through Transport services.

**UNIT III CORPORATE STRUCTURES AND PRICING 9**

Corporate structures in Multimodal Transport, System required by the Transport Operar, Transport Pricing-Modern Freight Tariffs, Meeting the Demand-Tracking the Container Fleet.

**UNIT IV RAIL AND AIR 9**

Rail Transport- Railway networks, Air Transport- Airline Schedule Planning, IATA, Maritime

industries.

**UNIT V                    CONTRACT**

**9**

International contract of sale-Bill of Lading-Clauses-Way bills-Identity of Carrier-Liability and Insurance-Paperless Trading, Indian Multimodal Act- 1993,Conventions related Multi modal transport-Cargo liability conventions, Conventions relating Dangerous Goods-Cusms conventions-Statutory Regulations and Restrictions-National and International restrictions on the movement of goods-W.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. K. V. Hariharan, Containerisation, Multimodal Transport & Infrastructure Development In India, Shroff Publishers and Distributors Pvt. Ltd, 6thEdition, 2014
2. Hariharan K. V., A Textbook on Container & Multimodal Transport Management, Shroff Publishers and Distributors Pvt. Ltd, 1st edition, 2002.
3. K. V. Hariharan, Text Book On Container & Multimodal Transport Management, Pearson Education, 2002.

**REFERENCE BOOKS:**

1. JotinKhisty C and Kent Lall B, Transportation Engineering: An Introduction, Prentice Hall International, 3<sup>rd</sup> edition 2002.
2. Hutchinson B.G, Principles of Urban Transport Systems Planning, McGraw-Hill Book Company (latest edition), 2013.

**COURSE OBJECTIVE:**

- To discuss about the inland transportation and the logistic avenues in inland transportation management at sea.
- To explain in safety aspects in the inland transportation management, Cost benefit analysis on using inland waterways & latest trends
- To explain about the use of technology to support inland waterways for transportation.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Identify the mode of transportation.
- CO – 2 : Describe the implementation of inland waterways in India
- CO – 3 : Describe the Bridges & Tunnel system for logistics.
- CO – 4 : Describe the National regulations for logistics in India.
- CO – 5 : Explain on the concepts of boating safety.
- CO – 6 : Identify the special risks that are involved in safety
- CO – 7 : Analyze the loading and weight distribution.
- CO – 8 : Describe the various concepts of risk based on the implementation of safety.
- CO – 9 : Explain on the latest trends and technologies support inland waterways for logistics.
- CO – 10 : Evaluate the Cost benefit analysis using inland waterways.

**UNIT I MODES OF TRANSPORTS 9**

Sea trade-Role of ocean transport-various modes of transports and its merits and demerits-Introduction inland waterways in India-development of coastal shipping-nature and scope –inland waterways - Importance in India- waterways for logistics and supply chain management-vessel safely on the Inland Waterways.

**UNIT II BRIDGE AND TUNNEL 9**

Bridges & Tunnels-Bridge operations and Use of tunnels -The Rules of the Road-By-laws and local traffic regulations -National regulations

**UNIT III SAFETY 9**

Boat safety-Use of fire extinguishers-Watertight integrity -Fire hazards, particularly gas and petrol-Refloating after grounding - Personal Safety-Risks involved in the water, including cold shock-



# **SEMESTER III**

**COURSE OBJECTIVE:**

- To make student able to build an understanding of the fundamental concepts of ERP systems, their architecture, and working of different modules in ERP. Students will also be develop and design the modules used in ERP systems, and can customize the existing modules of ERP systems.
- To understand and able to build an understanding of the fundamental concepts of ERP system.
- To learn ERP architecture, and working of different modules in ERP.
- To comprehend to create and plan the modules utilized in ERP frameworks, and can redo the current modules of ERP frameworks.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Describe how an integrated information system can support effective.
- CO – 2 : Comprehend the technical aspects of ERP systems.
- CO – 3 : Describe the module in distinguishing the characteristics of ERP software.
- CO – 4 : Map business processes using process mapping techniques.
- CO – 5 : Explain the concepts of reengineering and how they relate to ERP system.
- CO – 6 : Explain the advancement of ERP frameworks.
- CO – 7 : Elaborate the steps and activities in the ERP life cycle.
- CO – 8 : Run of the mill usefulness in an ERP framework.
- CO – 9 : Describe typical functionality in an ERP system.
- CO – 10 : Critically evaluate the ERP implementation packages.

**UNIT I INTRODUCTION 12**

Introduction to ERP, Evolution of ERP, Reasons for the growth of ERP, Scenario and Justification of ERP in India, Evaluation of ERP, Various Modules of ERP, Advantage of ERP.

**UNIT II OVERVIEW OF ENTERPRISE 12**

An overview of Enterprise, Integrated modules, Business Process Mapping for ERP Module Design, Organizational Environment and its selection for ERP Implementation.

**UNIT III ERP AND RELATED TECHNOLOGIES 12**

ERP and Related Technologies, Business Process Reengineering (BPR), Management Information System (MIS), Executive Information System (EIS), Decision support System (DSS), Supply Chain Management (SCM)

**UNIT IV ERP MODULES 12**

ERP Modules, Introduction, Finance, Plant Maintenance, Quality Management, Materials Management, ERP Market. A Comparative Assessment and Selection of ERP Packages and Modules – Case Study

**UNIT V ERP IMPLEMENTATION 12**

ERP implementation lifecycle, issues in implementing ERP packages, pre-evaluation screening, package evaluation, project planning phase, gap analysis, reengineering, configuration, implementation, team training, testing, going live, end-user training, post implementation (Maintenance mode).

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

1. Alexis Leon, ERP demystified, second Edition Tata McGraw-Hill, 2007.
2. Jagan Nathan Vaman, ERP in Practice, Tata McGraw-Hill, 2008.

**REFERENCE BOOKS:**

1. Alexis Leon, Enterprise Resource Planning, second edition, Tata McGraw-Hill, 2008. 3.
2. Mahadeo Jaiswal and Ganesh Vanapalli, ERP Macmillan India, 2009.
3. Vinod Kumar Grag and N.K. Venkitakrishnan, ERP- Concepts and Practice, Prentice Hall of India, 2<sup>nd</sup> edition, 2006.
4. Summer, ERP, Pearson Education, 2008.

**COURSE OBJECTIVE:**

- To develop a research orientation among the students and acquaint them with fundamentals of research methods.
- To have a knowledge about research and how research is conducted.
- To understand the data collection methods the sampling methods and the data analysis method.
- To create awareness about the importance of research in all fields.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Obtain knowledge on various kinds of research questions and research design
- CO – 2 : Describe qualitative, quantitative and mixed methods research
- CO – 3 : Design a good quantitative purpose statement and hypotheses
- CO – 4 : Describe the good practices in conducting a qualitative interview and observation.
- CO – 5 : Determine the sample size
- CO – 6 : Explain the various types of quantitative sampling techniques and conditions use.
- CO – 7 : Describe the various steps involved in coding qualitative data.
- CO – 8 : Apply the various statistical tools to test the hypothesis & drawing inferences
- CO – 9 : Obtain knowledge on writing different types of report
- CO – 10 : Develop independent thinking for critically analyzing research reports

**UNIT I INTRODUCTION****12**

Introduction to Research – Business & Management Research – Research Characteristics – Research Approaches – Types of Research - Significance – Research process – characteristics of good research – Types of Research – Problems in research – identifying research Problem-Theoretical-Framework / 'Literature Survey- Exploratory Descriptive Studies – Cross Sectional & longitudinal studies.

**UNIT II RESEARCH DESIGN AND MEASUREMENT****12**

Research design – Definition – types of research design – Exploratory, Descriptive, Causal, and Formulation of hypothesis – different types of experimental design-. Scaling techniques meaning, types of scales–Hypothesis testing Statistical significance, statistical test procedure.



**UNIT III                    SAMPLING AND DATA COLLECTION                    12**

Sampling Techniques – Probability and Non–probability sampling methods- Data Collection – Types of data –Primary and Secondary data – Methods of primary data collection –Observation, Interview, Questionnaire and Schedule – Construction of questionnaire – pilot study – case study

**UNIT IV                    DATA PREPARATION AND ANALYSIS                    12**

Data Preparation – editing – Coding –Data entry-Test of significance – Assumptions about Parametric and nonparametric tests. Parametric tests -Introduction ANOVA- Application of Statistical software for data analysis.

**UNIT V                    REPORT DESIGN AND WRITING                    12**

Introduction - Research Report - Research Proposal – Different types – Contents of report – Important Parts – Title, Table of Contents – Synopsis, bibliography - Introductory Section – Research Design - Result Section – Recommendation & Implementation Section

**TOTAL: 60 HOURS**

**TEXT BOOKS:**

3. Kothari, C.R., Research Methodology”, Methods and Techniques, New Age International, 6th Edition, 2010.

**REFERENCE BOOKS:**

5. Panneerselvam, R., “Research Methodology”, Prentice-Hall of India, New Delhi, 7<sup>th</sup> Edition, 2004.
6. Donald R. Cooper, Pamela S. Schindler and J K Sharma, Business Research methods,11<sup>th</sup> Edition, Tata McGraw Hill, New Delhi, 20 .

## **ELECTIVE COURSES – LOGISTICS & SUPPLY CHAIN**

**18EMBS31**

**INTERNATIONAL LOGISTICS**

**3 0 0 3**

### **COURSE OBJECTIVE:**

- To explain the movement of cargo from vendor to end user across the globe
- To increase the value in product.
- To add value that includes improved quality and product accessibility across the world at optimal cost

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the various basic issues in international transportation.
- CO – 2 : Explain the various participants in international transportation.
- CO – 3 : Explain the various modes of international transportation and selection of the modes.
- CO – 4 : Explain about the multimodal and intermodal transportation.
- CO – 5 : Explain about the freight costing and pricing.
- CO – 6 : Explain various issues involved in ocean mode of transportation.
- CO – 7 : Explain about the various classifications of ships and shipping methods.
- CO – 8 : Explain about risks and insurance in ocean transportation.
- CO – 9 : Explain about air mode of transportation.
- CO – 10 : Explain the advantages and disadvantages of air cargo transport.

### **UNIT I TRANSPORTATION**

**9**

Meaning and Significance of International Transportation- Role of transportation in integrated logistics process, Basic principles of international transportation, Parties involved in international transportation, Significance of Transportation, Modes of International Transportation- Criteria for Selection of different modes of transportation, Multi Modal Transportation. Freight costing and pricing- Classification of Costs associated with Transportation process, Cost Strategies, Factors affecting, Transportation rate

### **UNIT II OCEAN MODE OF TRANSPORTATION**

**9**

Features, Types and Terminology- Features, Advantages and Disadvantages of using sea mode, Classification of ships, Shipping Methods, S wage in Ship, Major Sea-routes around the world,

Important Terminology, Freight, Parties and Perils Associated with Sea Mode- Parties involved in sea mode of transportation- Ocean Freight- Types of Sea Freight, Calculation of Freight; Maritime Risks, Marine Insurance.

**UNIT III                    AIR AND FREIGHT TRANSPORTATION                    9**

Features, Types and Terminology- Significant Features, Advantages and Constraints of Air transportation, Types of Carriers, Air Cargo Chain Operators, Legal Aspect of Carriage of Goods by Air; Freight Structure and \ organizational set up- ULD Concept, Air Cargo Tariff Structure- Air Freight Classification, Air Freight Calculation, Factors Affecting Air Freight Rates, Air Freight Consolidation, Role of IATA and TIACA in Air Cargo Industry.

**UNIT IV                    LAND MODE                    9**

Transportation by Rail and Road, Meaning of Land mode of transportation, International Road Transportation, International Road Network, Advantages and Constraints of International Road Transport, International Rail Transportation, Advantages and Constraints of International Rail Transport; Pipeline as a Mode of Transportation and Concept of Multi-modalism, Concept of Containerization.

**UNIT V                    EXIM PROCEDURE AND DOCUMENTATION                    9**

Export procedure in India, Import Procedure in India, Transport Documents, Mate Receipt, Bill of Lading – features and types, Air-way Bill, Lorry Receipt; INCOTERMS 2013; Packaging and Labeling for Exports- What is packaging? Functions of Packaging, Labeling the export packages, Packaging for different modes of transportation, Rail Receipt.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Ewan Roy, what is global supply chain management? by Trade Ready, ,2017
2. Altekar, supply chain management,and concepts PHI 2013.

**REFERENCE BOOKS:**

1. R.B. Handfield and E.L. Nochols, Jr. Introduction Supply Chain Management. Prentice Hall, 2<sup>nd</sup> edition (November 30, 2014)
2. Sunil Chopra and Peter Meindel. Supply Chain Management: Strategy, Planning, and Operation, Prentice Hall of India, 6<sup>th</sup> Edition 2013.

**COURSE OBJECTIVE:**

- To explore the fundamental concepts of Global Procurement Management.
- To gain knowledge in Strategic Sourcing.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the basics of purchasing operations.
- CO – 2 : Summarize the Purchasing policies.
- CO – 3 : Understand the Methods of Supplier evaluation and selection.
- CO – 4 : Analyze the Supplier evaluation and selection.
- CO – 5 : Discuss about Value analysis.
- CO – 6 : Identify the types of Process mapping tools.
- CO – 7 : Discuss about Price analysis.
- CO – 8 : Describe about Cost analysis techniques.
- CO – 9 : Discuss about Negotiation
- CO – 10 : Explain the Contract management.

**UNIT I PURCHASING OPERATIONS AND STRUCTURE 9**

The purchasing and supply process - Introduction to purchasing and SCM - Strategic supply management roles and responsibilities - Improving the procure to pay process - Approval, contract and purchase order preparation - Types of purchases - Purchasing policy and procedures -Policy overview - Purchasing policies - Purchasing procedures.

**UNIT II SUPPLY MANAGEMENT INTEGRATION AND STRATEGIC SOURCING 9**

Internal integration - External integration - The critical role of cross functional scouring teams - Integrating supply management, engineering, and suppliers to develop new products and services – purchasing/supply management organizational structure - Purchasing position within the organizational structure - Supply management and commodity strategy development - Aligning supply management and enterprise objectives - Category strategy management - Types of supply management strategies - E-reverse auctions - Evolving sourcing strategies - Supplier evaluation and selection - Supplier evaluation and selection process - Key supplier evaluation criteria - Developing

a supplier evaluation and selection survey - Reducing supplier evaluation and selection cycle time.

**UNIT III TOOLS AND TECHNIQUES FOR PURCHASING ANALYSIS 9**

Project management - Learning – curve analysis - Value analysis / value engineering - Quantity discount analysis - Process mapping - Supplier quality management Supplier management and development - Supplier performance measurement - Rationalization and optimization: Creating a manageable supply base - Supplier development: A strategy for improvement - Overcoming the barriers to supplier development - Managing supply base risk - Managing sustainability in the supply base.

**UNIT IV STRATEGIC COST MANAGEMENT 9**

A structured approach to cost reduction - Price analysis - Cost analysis techniques - Total cost of ownership - Collaborative approaches to cost management

**UNIT V NEGOTIATION AND CONTRACTING 9**

Negotiation - The negotiation framework in supply management - Negotiation planning - Power in negotiation - Concessions, negotiation tactics, win-win negotiation - Internal negotiation - Impact of electronic media on negotiations - Contract management - Elements of contract - How to negotiate and write contract - Types of contract - Long-term contracts in alliances and partnerships - Nontraditional contracting - Settling contractual disputes.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Parasram, “In Cotermis Exports Coartind and Pricing with Practical Guide to in Co-Terms, 1s Edition, Jain Book, 6th Edition, 2010.
2. M I Mahaian, “Impart Do It Yourself”, Jain Book, 7th Edition, 2007.

**REFERENCE BOOKS:**

1. John Wiley, “Global Operations & Logistics:Text & Cases-Dornier”, Pearson Education, 2nc Edition 2013.
2. David Simchi-Levi, “Designing & Managing Supply Chain-Concepts, Strategies”, Tata McGraw- Hill, 8th Edition, 2000.

**COURSE OBJECTIVE:**

- To help the students in explaining the significance of Warehousing.
- To provide timely customer service,
- To keep track of items so they can be found readily & correctly
- To minimize the total physical effort and minimize the cost of moving goods.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the basics of warehousing.
- CO – 2 : Explain about the various warehouse operations.
- CO – 3 : Explain the various warehousing decisions.
- CO – 4 : Explain about the various types of warehouses.
- CO – 5 : Explain the various costs involved in a warehouse.
- CO – 6 : Explain about the storage systems used in a warehouse.
- CO – 7 : Explain about the various types of warehouses.
- CO – 8 : Explain about inventory management in the supply chain.
- CO – 9 : Explain the various inventory control techniques.
- CO – 10 : Explain the use of warehouse management systems manage warehouse operations.

**UNIT I INTRODUCTION WAREHOUSING 9**

Introduction – Warehousing – Warehousing Decisions – Warehouse Operations – WMS –Types of Warehouses – Warehouse Layout – Functions - Equipment and components – Centralized & Decentralized – Warehouse operations and Storage Systems – Warehousing Cost Analysis

**UNIT II INVENTORY MANAGEMENT 9**

Concepts – Role in Supply Chain – Role in Competitive Strategy – Independent Demand Systems – Dependent Demand Systems – Functions – Types – Cost – Need for Inventory – Just in Time- Inventory Control – ABC Inventory Control – Bull Whip Effect

**UNIT III MANAGING WAREHOUSE EFFICIENCY 9**

Order picking – Picking methods-pick path – Measuring Warehouse Efficiency – Warehouse Workforce design and development – cross docking

**UNIT IV                    UNITIZATION, SHIPPING AND PACKAGING                    9**

Container optimization-Container loading and void fill-Weigh checking-Automated loading-Dock management-packaging-types-cost- and labelling functions and design

**UNIT V                    DISTRIBUTION FACILITIES MANAGEMENT                    9**

Material Handling Systems–Types of Material Handling Equipment – Modern Warehousing – ASRS & their Operations – Bar Coding-Technology & Applications in Logistics Industry – RFID Technology & Applications – Types of Conveyors – Refrigerated Warehouses

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Frazelle, World Class Warehousing & Material Handling, Tata McGraw-Hill, 2<sup>nd</sup> edition 2015.
2. Vinod.V.Sople, Logistics Management, Pearson Education, 3<sup>rd</sup> edition 2012.
3. Arnold, Introduction Materials Management, Pearson Education, 7<sup>th</sup> edition 2011.

**REFERENCE BOOKS:**

1. Frazelle, World Class Warehousing & Material Handling, Tata McGraw-Hill, 2<sup>nd</sup> edition 2015.
2. Satish K. Kapoor and PurvaKansal, Basics of Distribution Management - A Logistical Approach, Prentice Hall, 1<sup>st</sup> Edition 2004
3. Satish K. Kapoor and PurvaKansalMarketing, Logistics - A Supply Chain Approach ,
4. Pearson Education, 2003

**COURSE OBJECTIVE:**

- To prepare students successfully implement a contract logistics and closed supply chain in Retail, FMCG and Automobile sectors.
- To explain the concept and principle of contract logistics and closed supply chain

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the basics of contract logistics.
- CO – 2 : Explain about the third party logistics industry
- CO – 3 : Explain contract logistics.
- CO – 4 : Explain about the third party logistics providers.
- CO – 5 : Explain about closed loop supply chains.
- CO – 6 : Explain and learn the closed loop supply chain models.
- CO – 7 : Explain strategic issues involved in closed loop supply chains.
- CO – 8 : Explain about the business and markets for closed loop supply chains.
- CO – 9 : Explain the reasons for using reverse logistics.
- CO – 10 : Explain the emerging trends in closed loop supply chains.

**UNIT I CONTRACT LOGISTICS 9**

Third party logistics industry overview - A framework for strategic alliances - Evolution of contract logistics - Types of third party logistics providers – Auto, FMCG and Retail-Third party services and integration

**UNIT II CLOSED LOOP SUPPLY CHAINS AND LOGISTICS 9**

Introduction closed loop supply chains and logistics – Logistics and closed loop supply chain service - Overview of return logistics and closed loop supply chain models – Introduction product returns - Product Vs Parts returns - Strategic issues in closed loop supply chains

**UNIT III BUSINESS AND MARKET 9**

Overview - Introduction life cycle management - Trends and opportunities – Au Warranty management, return process and benchmarks - Market overview - Reasons for using reverse logistics - General characteristics - Consumer goods Depot repair and value added services -





**COURSE OBJECTIVE:**

- To understand the performances of each individual driver are monitored.
- To understand the reason for the performance, drop at every stage of the supply chain is monitored and briefed.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Learn about the planning of logistics and supply chain management.
- CO – 2 : Evaluate performance of logistics.
- CO – 3 : Reproduce knowledge on measurement of logistics
- CO – 4 : Design the various measurement systems.
- CO – 5 : Name of control system of logistics.
- CO – 6 : Operate and implementation of control system.
- CO – 7 : Organize the implementation of lean logistics.
- CO – 8 : Design the mapping for supply chain management.
- CO – 9 : Evaluate the performance of supply chain management.
- CO – 10 : Measure performance of supply chain management

<b>UNIT I</b>	<b>STRATEGIES, PLANNING AND PERFORMANCE</b>	<b>9</b>
	Principles and strategies of Logistics and supply chain management, Logistics and supply chain operations planning, Approaches to develop metrics	
<b>UNIT II</b>	<b>LOGISTICS MEASUREMENTS SYSTEMS</b>	<b>9</b>
	Logistical and supply chain measurement, Measurements in integration context	
<b>UNIT III</b>	<b>LOGISTICS CONTROL SYSTEMS</b>	<b>9</b>
	Logistics / supply chain control, Characteristics of an ideal measurement system	
<b>UNIT IV</b>	<b>UNDERSTANDING PERFORMANCE FRAMEWORKS</b>	<b>9</b>
	Mapping for supply chain management, Lean thinking and supply chain management	
<b>UNIT V</b>	<b>SUPPLY CHAIN PERFORMANCE MEASUREMENT</b>	<b>9</b>
	Measurement of supply chain performance.	

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Bowersox & Closs, Logistical Management, McGraw-Hill Companies, 2017.
2. Martin Christopher, Logistics & Supply chain management, 2016.

**REFERENCE BOOKS:**

1. Sunil Chopra and Peter Meindl, Supply Chain management - Strategy, Planning and Operation, Pearson Education 2018.
2. Mohanty, Essentials of Supply Chain Management, Jaico 2018. Publishing House, 2018

**COURSE OBJECTIVE:**

- To provide foundational knowledge associated with the green supply chain.
- To teach the implication of today's most pressing environmental issues
- To describe how the various green supply chain practices can actually save money, increases efficiency and reduce delivery time.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the fundamental concepts of Green Supply Chain.
- CO – 2 : Understand the Closed-loop Supply Chain.
- CO – 3 : Explain the fundamental concepts of Eco-Design.
- CO – 4 : Understand the various tools of Product Eco-Design.
- CO – 5 : Explain the Green Procurement and Purchasing
- CO – 6 : Identify the Green Supplier Development.
- CO – 7 : Illustrate the 4Re's.
- CO – 8 : Explain the Lean Manufacturing for Green Manufacturing.
- CO – 9 : Illustrate the Closing the Loop: Reverse Logistics.
- CO – 10 : Explain the applications of Green Logistics and Transportation

**UNIT I INTRODUCTION 9**

Introduction – Traditional Supply Chain and Green Supply Chain – Environmental Concern and Supply Chain – Closed-loop Supply Chain – Corporate Environmental Management – Green Supply Chain (GSCM): Definition, Basic Concepts – GSCM Practices

**UNIT II ECO-DESIGN 9**

Design for the Environment (DFE) or Eco-Design – Eco-Design and Supplier Relationships – Definitions of Eco-Design – Tools of Product Eco-Design – Involving suppliers in product eco-design: Drivers, Challenges and Successful factors

**UNIT III GREEN PURCHASING 9**

Green Procurement and Purchasing – Definitions of green purchasing – Drivers of green purchasing – Green purchasing strategies – Green purchasing performance measurement –Green Supplier Development and Collaboration.

**UNIT IV GREEN MANUFACTURING 9**

Green Manufacturing or Production: Evolution, Definitions – 4Re’s: recycling, remanufacturing, reuse and reduction – Closed-loop Manufacturing – ISO 14000 systems – Life Cycle Analysis (LCA) – Lean Manufacturing for Green Manufacturing or Production.

**UNIT V GREEN LOGISTICS AND TRANSPORTATION 9**

Green Logistics and Transportation – Definitions of Green Logistics – Critical drivers of Green Logistics – Green transportation and logistics practices – Environmental impacts of transportation and logistics – Closing the Loop: Reverse Logistics

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Joseph Sarkis, Yijie Dou. Green Supply Chain Management: A Concise Introduction, Routledge, 2017.
2. Charisios Achillas, Dionysis D. Bochtis, Dimitrios Aidonis, Dimitris Folinas. Green Supply Chain Management, Routledge, 2018.

**REFERENCE BOOKS:**

1. Hsiao-Fan Wang, Surendra M. Gupta. Green Supply Chain Management: Product Life Cycle Approach, McGraw Hill publishing, 2011
2. Stuart Emmett, Vivek Sood. Green Supply Chains: An Action Manifesto by Stuart Emmett, Wiley publications, 2010

**COURSE OBJECTIVE:**

- To provide foundational knowledge associated with the supply chain analytics
- To describe the various tools and techniques for implementation of analytics based on the supply chain drivers such as location, logistics and inventory
- To describe the various techniques for analytics based on the Multi Attribute Decision Making (MADM) and risk
- To provide the applications of analytics in supply chain

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the fundamental concepts of Optimization.
- CO – 2 : Understand on the Operations Research Techniques for Analytics.
- CO – 3 : Understand on the implementation of analytics in location and layout.
- CO – 4 : Analyze the inventory using aggregate production model.
- CO – 5 : Identify the different quality models.
- CO – 6 : Illustrate the quality problems for analytics.
- CO – 7 : Explain the different dimensions using Analytic Hierarchy Process.
- CO – 8 : Explain the different dimensions for Aggregate Production Planning (APP)
- CO – 9 : Identify the type of analytics for Simulation in supply chain.
- CO – 10 : Design the type of analytics for Simulation in supply chain.

**UNIT I INTRODUCTION 9**

Introduction – Overview on Supply Chain, Analytics and Supply Chain Analytics – Dashboards with relevant KPIs for Supply Chain – Optimization – Classification of optimization problems – Optimization for Analytics – Operations Research Techniques for Analytics

**UNIT II LOCATION AND LAYOUT 9**

Plant/Warehousing Decisions – Location Methods – Location Models – Network Models – Layout Methods – Line Balancing: KPIs (Cycle time, Idle time) – Inventory Management

**UNIT III TOTAL QUALITY MANAGEMENT 9**

Introduction – Statistical Quality Control (SQC) – Statistical Process Control (SPC) – Pareto Analysis – Histogram – Scatter Diagram – Control Charts – Process Capability Analysis: KPIs ( $C_p$ )

and  $C_{pk}$ )

**UNIT IV                    PLANNING & MULTI ATTRIBUTE DECISION MAKING                    9**

Capacity Planning – Measurement of Capacity: KPIs (Efficiency and Utilization) – Aggregate Production Planning (APP): Model, Techniques – Multi Attribute Decision Making (MADM) – Analytic Hierarchy Process

**UNIT V                    SIMULATION & DOE                    9**

Introduction to simulation – Type: Discrete and Continuous simulation – Simulation models – Steps in Simulation study – Simulation for Analytics – Experimental Designs (Taguchi, RSD, Mixture Design)

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. James R. Evans., Business Analytics – Methods, Models and Decisions, Pearson Publications, 1st Edition, 2012.
2. G.V.Shenoy,U.K.Srivastava,S.C.Sharma, Operations Research for Management, New Age International,Revised 2nd Ed, 2005.

**REFERENCE BOOKS:**

3. Gerad Feigin, Supply Chain planning and analytics – The right product in the right place at the right time, Business Expert Press, 2011
4. Peter Bolstorff, Robert G. Rosenbaum, Supply Chain Excellence: A Handbook for Dramatic Improvement Using the SCOR Model, AMACOM Div American Mgmt Assn, 2007
5. Robert Penn Burrows, Lora Cecere, Gregory P. Hackett, The Market-Driven Supply Chain: A Revolutionary Model for Sales and Operations Planning in the New On-Demand Economy, AMACOM Div American Mgmt Assn, 2011

**COURSE OBJECTIVE:**

- To explain the strategic role of sourcing management in creating and enhancing a firm's competitive advantages
- To understand the sourcing activities, supplier management
- To learn about the global sourcing management.
- To learn about the latest trends in sourcing.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain about the fundamental Sourcing concepts.
- CO – 2 : Evaluate the selection of supplier.
- CO – 3 : Explain the Global Sourcing.
- CO – 4 : Explain the various Performance Measurement and Evaluation.
- CO – 5 : Explain the Sourcing in Supply Chain.
- CO – 6 : Explain the Components of Sourcing.
- CO – 7 : Explain the Analytical Tools in Sourcing.
- CO – 8 : Explain the Pricing Analyses.
- CO – 9 : Explain the Sourcing Risk.
- CO – 10 : Explain the new trends.

**UNIT I INTRODUCTION 9**

Sourcing – Sourcing management: Concept, Functions, Application – Supplier Evaluation and Selection (Concepts): Supplier Rating – Rating criteria – Factors

**UNIT II GLOBAL SOURCING 9**

Introduction to Global Sourcing – Trends in Global Sourcing – Global Sourcing – Negotiation – Performance Measurement and Evaluation (Concepts and Metalcraft Case)

**UNIT III SUPPLY CHAIN 9**

Supply Chain: The Role of Sourcing – Components – Key Process – Outsource: Various Mechanism – Third-party logistics (3PL): Service

**UNIT IV ANALYTICAL TOOLS 9**

Analytical Tools in Sourcing (Total Cost of Ownership (Wire Harness case), Pricing Analyses



(Plastic Shield case)) – Analytical Tools in Sourcing (Foreign Exchange Currency Management, Learning Curve, Quantity Discount Models) – Integrative Pacific Systems Case (Supplier Scorecard, Sourcing Risk, Supplier Financial Analysis)

**UNIT V                    RISKS & TRENDS**

**9**

Sourcing Risk Management (Concepts) – Electronic Sourcing – Sustainability and Sourcing (Green Sourcing; Walmart-China Case)

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Sunil Chopra and Peter Meindi, Supply Chain Management – Strategy Planning and Operation, Pearson Education, Third Indian Reprint, 2004.
2. Monczka et al., Purchasing and Supply Chain Management, Thomson Learning, Second edition, Second Reprint, 2002.

**REFERENCE BOOKS:**

1. Lee J. Krajewski and Larry P. Ritzman, 2007, Operations Management strategy and analysis, 9th Edition, Pearson Education / Prentice Hall of India, 2007.
2. Altekar Rahul V, Supply Chain Management – Concept and cases, Prentice Hall India, 2005.
3. Olivier Bruel, Strategic Sourcing Management: Structural and Operational Decision-making Kogan Page; 1 edition, 2016.

## **ELECTIVE COURSES – OPERATIONS**

**18EMBS39**

**LEAN SIX SIGMA**

**3 0 0 3**

### **COURSE OBJECTIVE:**

- To introduce the fundamental Lean manufacturing and Six Sigma principles.
- To explain the tools and technique for the implementation of Lean manufacturing and Six Sigma.
- To explain the synergy of Lean manufacturing and Six Sigma.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the principle and wastages of lean.
- CO – 2 : Explain the implementation of lean tools.
- CO – 3 : Design the current and future state mapping of Value Stream Mapping (VSM)
- CO – 4 : Explain the lean concepts based on the Value Stream Mapping (VSM).
- CO – 5 : Record knowledge of the concepts of TQM and Six Sigma.
- CO – 6 : Explain the Six Sigma methodologies based on the implementation and tools.
- CO – 7 : Explain the implementation of SPC tools using Six Sigma methodologies.
- CO – 8 : Explain the DMAIC based on the implementation of tools and techniques.
- CO – 9 : Record knowledge on the lean six sigma for successful implementation.
- CO – 10 : Explain the implementation of tools based on the lean and six sigma.

### **UNIT I LEAN MANUFACTURING: PRINCIPLE AND TOOLS 9**

Evolution of Just-In-Time and Lean Manufacturing – Principle – Seven wastes – Just-In-Time (JIT) – One-Piece or Continuous Flow – Kanban or Pull System – Basic tools such as 5S, Kaizen, Poka-Yoke and Single-Minute Exchange of Dies (SMED)

### **UNIT II TECHNIQUE: VALUE STREAM MAPPING 9**

Value Stream Mapping (VSM) – Material and Information Flow – VSM symbols – Identification of Product or Product Family – Current-State Mapping – Future-State Mapping by key questions – Plan and Implementation.

### **UNIT III SIX SIGMA 9**

Evolution – TQM vs. Six Sigma – What is Six Sigma – Six Sigma methodologies Such as DMAIC,

DFSS – Six Sigma Belts.

**UNIT IV DMAIC: TOOLS**

**9**

Define – Measure – Analyze – Improve – Control – SIPOC model – VOC – CTQ – Seven Quality or SPC tools such as Pareto Analysis, Cause and Effect Diagram, Control Charts etc. – Process Capability Analysis such as  $C_p$ ,  $C_{pk}$  – Design of Experiments (DoE).

**UNIT V LEAN SIX SIGMA**

**9**

The Synergy of Six Sigma and Lean – Lean Six Sigma – Principle – Lean tools in DMAIC – Implementation of Lean Six Sigma.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Feld, W. M., Lean Manufacturing tools, Techniques and How to Use Them, St. Lucie Press, Florida, 2000.
2. Michael L. George, et al., The Lean Six Sigma Pocket tool book: A Quick REFERENCES Guide Nearly 100 tools for Improving Process Quality, Speed, and Complexity, McGraw-Hill, 2005.

**REFERENCE BOOKS:**

1. Rother, M. and Shook, J., Learning see: Value stream mapping create value and eliminate muda, The lean enterprises institute Brookline, Massachusetts, USA, 1999.
2. Liker, J., The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer, McGraw-Hill Education, 2004.
3. Pyzdek, T. and Keller, P. A., The Six Sigma Handbook, Fourth Edition, McGraw-Hill Professional, 2014.

**COURSE OBJECTIVE:**

- To explain the Project Management based on the Project Management Body of Knowledge (PMBOK®)
- To explain the tools and techniques for identification, planning and analysis of Project.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain about the fundamental project and operations concepts.
- CO – 2 : Identify the project parameters based on the Project Management Process.
- CO – 3 : Construct the project charter.
- CO – 4 : Formulate the Work Breakdown Structure (WBS).
- CO – 5 : Identify the Network technique for Project Management.
- CO – 6 : Analysis the time using CPM.
- CO – 7 : Identify the project cost.
- CO – 8 : Evaluate the cost control using Earned Value Analysis (EVA).
- CO – 9 : Identify the basic tools of quality control.
- CO – 10 : Evaluate the quality using Pareto Analysis.

**UNIT I INTRODUCTION****9**

Project Vs. Operations – Project: Definition – Characteristics of Projects – Project Management Body of Knowledge (PMBOK®) – Project Life Cycle – Project Management Process or Process Groups – Project Knowledge Areas – Mapping of the Project Management Processes to the Project Management Process Groups and the Knowledge Areas – Project Management Software.

**UNIT II INTEGRATION & SCOPE MANAGEMENT****9**

Project Integration Management – Process of Project Integration Management – Project Initiation: Project Selection, Project charter and Project Scope Statement; Project Scope Management – Process of Project Scope Management – Project Planning: Scope Planning, Work Breakdown Structure (WBS)

**UNIT III TIME MANAGEMENT****9**

Project Time Management – Process of Project Time Management – Project Planning: Precedence Diagramming Method (PDM) – Project Scheduling: Critical Path Method (CPM), Program

Evaluation and Review Technique (PERT), Gantt Chart

**UNIT IV COST MANAGEMENT 9**

Project Cost Management – Process of Project Cost Management: Cost Estimating, Cost Budgeting and Cost Control – Earned Value Analysis (EVA) or Earned Value Management (EVM)

**UNIT V QUALITY MANAGEMENT 9**

Project Quality Management – Process of Project Quality Management: Quality Planning, Quality Assurance and Quality Control – Seven Basic Tools of Quality: Pareto Analysis, Cause and Effect Diagram, Checklist or Checksheet, Process Flow Chart, Histogram, Scatter Diagram and Control Charts

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Project Management Institute. Guide to the Project Management Body of Knowledge (PMBOK® Guide), Sixth Edition, 2017.
2. Cynthia Snyder Stackpole. A Project Manager's Book of Tools and Techniques – A Companion to the PMBOK® Guide, Wiley Publications, 6th edition, 2018.

**REFERENCE BOOKS:**

1. James W. Marion. Project Management: A Common-Sense Guide to the Pmbok Program, Part Two-Plan and Execution, MOMENTUM Press, 2018.
2. George T. Edwards. Project Management Fundamentals: A practical overview of the PMBOK, Blue Crystal Press, 2012.
3. Cynthia Snyder Stackpole. A User's Manual to the PMBOK Guide, Wiley Publications, 5th edition, 2013.

**COURSE OBJECTIVE:**

- To acquaint the student with the applications of Operations Research to business and industry
- To help them to grasp the significance of analytical techniques in decision making.
- To test on the application of Operations Research to business related problems.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Evaluate Dynamic programming.
- CO – 2 : Analyze the applications of Dynamic programming.
- CO – 3 : Evaluate Flow shop in Two Machines.
- CO – 4 : Evaluate Job shop in Two Machines.
- CO – 5 : Analyze the applications of Project scheduling by PERT
- CO – 6 : Analyze the applications of Project scheduling by CPM.
- CO – 7 : Evaluate the Queuing System.
- CO – 8 : Explain the Simulation models.
- CO – 9 : Explain the Branch and bound method.
- CO – 10 : Explain the Vehicle Routing Problems.

**UNIT I DYNAMIC PROGRAMMING 9**

Dynamic programming – Type – Forward and Backward Recursion – Application: Shortest-Route Problem, Knapsack Model, Work-Force size problem

**UNIT II SCHEDULING SYSTEMS 9**

Flow shop: Johnson 's Method – Two Machines, Three Machines, More than three Machines  
Graphical Method – Only Two Jobs – Job shop

**UNIT III PROJECT SCHEDULING 9**

PERT & CPM – Project scheduling by PERT/CPM – Cost considerations in PERT/CPM

**UNIT IV QUEUING & SIMULATION 9**

Queuing System – Four elements – Kendall's Notation – Queuing models – Birth and Death Model  
– Simulation – Type: Discrete and Continuous simulation – Simulation models

**UNIT V ADVANCED 9**

Branch and bound method – Vehicle Routing Problems – Quadratic Programming – Staff transfer problem – Two-stage supply chain distribution problem

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Hamdy A. Taha, Operation Research, Pearson Prentice Hall, 2003.
2. Singh & Kumar, Operation Research, UDH Publisher, 2013.

**REFERENCE BOOKS:**

1. S.R. Yadav, A.K. Malik, Operations Research, Oxford University Press; First edition, 2014.
2. G.V.Shenoy,U.K.Srivastava, S.C.Sharma, Operations Research for Management, New Age International,Revised 2nd Ed, 2005.

**COURSE OBJECTIVE:**

- To explain the Quality concept, principles and its various tools.
- To explain the statistical process control for the implementation of quality management.
- To create an awareness about the ISO certification process and its need for the industries.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Define the quality based on the quality gurus.
- CO – 2 : Analyze the implementation of quality management.
- CO – 3 : Record knowledge of the standards of ISO.
- CO – 4 : Explain the ISO system based on the implementation.
- CO – 5 : Explain the implementation of SPC tools.
- CO – 6 : Calculate the Process Capability.
- CO – 7 : Record knowledge on the various techniques of quality management.
- CO – 8 : Explain the implementation of PDCA cycle based on the problem solving method.
- CO – 9 : Explain the Six Sigma methodologies based on the implementation and tools.
- CO – 10 : Explain the implementation of SPC tools using Six Sigma methodologies.

**UNIT I INTRODUCTION 9**

Evolution of Quality – Quality Definition and Contributions by Deming, Juran, Crosby, Feiganbaum, Ishikawa and Taguchi – Definition of quality management – Quality management Framework – Barriers or Obstacles for implementation of quality management – Cost of Quality

**UNIT II QUALITY MANAGEMENT SYSTEMS 9**

Introduction – Benefits of ISO Registration – ISO 9000 series of Standards – ISO 9001 Requirements – Implementation – Documentation – Writing the Documents – Quality Auditing

**UNIT III STATISTICAL PROCESS CONTROL 9**

Introduction – Pareto Analysis – Cause and Effect Diagram – Checklist or Checksheet – Process Flow Chart – Histogram – Scatter Diagram – Statistical Fundamentals such as Mean and Standard deviation – Chance and Assignable Causes – Control Charts for Variables – Process Capability Analysis such as  $C_p$  and  $C_{pk}$  – Control Charts for Attributes.



**UNIT IV TOOLS AND TECHNIQUES 9**

Plan-Do-Check-Act (PDCA) Cycle – Quality Circles – Seven Management tools – Benchmarking – Quality Function Deployment (QFD) – Failure Mode and Effect Analysis (FMEA) – Taguchi Method

**UNIT V SIX SIGMA 9**

Evolution – TQM vs. Six Sigma – What is Six Sigma – Six Sigma methodologies Such as DMAIC, DFSS – Six Sigma Belts.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Besterfield, et al., Total Quality Management, Pearson Education Asia, 3rd Edition, 2006.
2. Suganthi, L. and Samuel, A., Total Quality Management, Prentice Hall (India) Pvt. Ltd., 2006.

**REFERENCE BOOKS:**

1. Evans, J.R. and Lindsay, W. M., The Management and Control of Quality, 6th Edition, South-Western (Thomson Learning), 2005.
2. Oakland, J.S., TQM – Text with Cases, Butterworth – Heinemann Ltd., Oxford, 3rd Edition, 2006.

**COURSE OBJECTIVE:**

- To explain for satisfaction of the customer who wants. Every commercial organization is to focus on making profit.
- To explain the world class manufacturing strategy within these enterprises because they make their products themselves.x

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Describe on the concepts of World Class Manufacturing.
- CO – 2 : Identify the layout based on the Strategic decisions and Choice of technology
- CO – 3 : Explain the principle and wastages of JIT
- CO – 4 : Explain the Kanban system.
- CO – 5 : Describe on the concepts of quality definition based on the TQM and ISO system.
- CO – 6 : Explain the implementation of quality tools.
- CO – 7 : Analyze the failure for maintenance using reliability.
- CO – 8 : Explain the various principles of Total productive Maintenance (TPM).
- CO – 9 : Describe on the Flexible Manufacturing System (FMS) and Group Technology (GT).
- CO – 10 : Evaluate the layout based on cellular manufacturing.

**UNIT I INTRODUCTION 9**

World Class Manufacturing Environment, Imperatives for success, System approach and change in mindset, Strategic decisions in Manufacturing Management, Choice of technology, Capacity and layouts, Automation in Materials handling system

**UNIT II JIT 9**

Principles advocated in Just-in-Time System, JIT Manufacturing System, JIT Pull System, Use of Kanban System, JIT Purchase, Source development, Supply chain Management.

**UNIT III TQM 9**

Total Quality Management Philosophy, TQM Principles, TQM Tools, Quality through design, Quality Management System and ISO 9000, QS 9000.

**UNIT IV TPM 9**



**COURSE OBJECTIVE:**

- To understand the Behavioural concepts in Operations Management
- To learn about the Behavioural concepts in production and service context.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain about the fundamental production in Behavioural concepts.
- CO – 2 : Explain the Behavioural Operations
- CO – 3 : Explain the Process Constraints and Variability
- CO – 4 : Explain the Process and Perception.
- CO – 5 : Explain the Group Behavior.
- CO – 6 : Explain the Designed to Game.
- CO – 7 : Explain the implementation of Supply Chain.
- CO – 8 : Explain the various risk of Supply Chain.
- CO – 9 : Evaluate the Dynamic Pricing.
- CO – 10 : Evaluate the Impulsiveness and Emotions.

**UNIT I INTRODUCTION 9**

Behavioural Operations Management – Definition – The study of Behavioural Operations – History and the Contemporary Knowledge Base – Virtuous Cycles of Experimental Learning

**UNIT II PRODUCTION AND SERVICE CONTEXTS – I 9**

Synch and Swim: Managing and Mismanaging Process Constraints and Variability – Process and Perception: Kristen's Cookie Company from a Behavioral Point of View

**UNIT III PRODUCTION AND SERVICE CONTEXTS – II 9**

The Wait or Buy Game: How to Game the System That's Designed to Game You Back – Sharing the Load: Group Behavior and Insights into Simulating Real-World Dynamics

**UNIT IV SUPPLY CHAINS 9**

Sharing the Risk: Understanding Risk – Sharing Contracts from the Supplier's Perspective – Supply Chain Negotiator: A Game of Gains, Losses, and Equity

**UNIT V INTEGRATIVE/ENABLING TECHNOLOGY 9**

Dynamic Pricing in Revenue Management – Intertemporal choices in Project based organisations –

Impulsiveness and Emotions – Behaviour Assessment Test on Conflict Management – Kicking the mean Habit – A chain of hands

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Elliot Bendoly, Wout van Wezel, and Daniel G. Bachrach, The Handbook of Behavioral Operations Management, Oxford University Press, 2015.

**REFERENCE BOOKS:**

1. Christoph H. Loch, Yaozhong Wu, Behavioral Operations Management, Now Publishers Inc, 2007.

**COURSE OBJECTIVE:**

- To explain for satisfaction of the customer who wants. Every commercial organization is to focus on making profit.
- To explain the world class manufacturing strategy within these enterprises because they make their products themselves.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Describe the types of Manufacturing system.
- CO – 2 : Identify the Various methodologies
- CO – 3 : Describe the Group Technology (GT).
- CO – 4 : Explain the layout based on cellular manufacturing.
- CO – 5 : Explain the principle and wastages of JIT.
- CO – 6 : Explain the Kanban system.
- CO – 7 : Explain the Theory of Constraints.
- CO – 8 : Explain the various principles of Synchronous Manufacturing.
- CO – 9 : Describe the Flexible Manufacturing System (FMS).
- CO – 10 : Describe the Flexibility.

**UNIT I INTRODUCTION 9**

Management of Manufacturing Systems: An Overview – Manufacturing Systems: Type – Challenges – Evolution of Manufacturing Systems – Nine laws in Manufacturing – Various methodologies

**UNIT II CELLULAR MANUFACTURING SYSTEMS 9**

Principle – Group Technology (GT) – Cellular Manufacturing Systems – Layout – Cell Design: formation, operator allocation, sequencing and scheduling – Part Classification and Coding – Production flow analysis

**UNIT III JUST-IN-TIME 9**

Evolution of Just-In-Time – Principle – Seven wastes – Just-In-Time (JIT) – Kanban or Pull System – CONWIP – Tools and Techniques

**UNIT IV SYNCHRONOUS MANUFACTURING 9**

Synchronous Manufacturing or Theory of Constraints – Principle – Definition of Goal by Goldratt – Role of a constraint – Types of resources: bottlenecks and capacity constrained resource – Drum Buffer Rope System

**UNIT V                      FLEXIBLE MANUFACTURING SYSTEMS (FMS)                      9**

Concept of Flexible Manufacturing System (MS) – Flexibility – Types: Single machine cell, Flexible manufacturing cell, Flexible manufacturing system – Components – Applications – Benefits – Implementation issues

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Mikell P. Groover, Automation, Production Systems and Computer-Integrated Manufacturing, Pearson Education; Fourth edition, 2016.
2. Richard J. Schonberger, World Class Manufacturing, Free Press Publication, 2008.
3. Feld, W. M., Lean Manufacturing Tools, Techniques and How Use Them, St. Lucie Press, Florida, 2000.

**REFERENCE BOOKS:**

1. Richard J. Schonberger, World Class Manufacturing: The Next Decade: Building Power, Strength, and Value, Free Press Publication, 2013.
2. R.P.Mohanty & S.G.Deshmukh, Advanced operations management, Pearson education (Singapore) P.Ltd

**COURSE OBJECTIVE:**

- To provide foundational knowledge associated with the operations strategy
- To describe the various Performance Objectives for implementation of operations strategy
- To describe the decision areas for strategy

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the fundamental concepts of strategy.
- CO – 2 : Understand the process of operations strategy.
- CO – 3 : Explain the fundamental concepts of Performance Objectives.
- CO – 4 : Understand the Product/Service Life Cycle on Performance Objectives.
- CO – 5 : Explain how the Total Quality Management (TQM) fit into Operations Strategy.
- CO – 6 : Explain how the lean manufacturing fit into Operations Strategy.
- CO – 7 : Explain the decision areas of Capacity Strategy.
- CO – 8 : Explain the decision areas of Purchasing and Supply Strategy.
- CO – 9 : Explain the decision areas of Process Technology.
- CO – 10 : Explain the decision areas of Improvement Strategy.

**UNIT I INTRODUCTION 9**

Introduction – Strategy: Definition, Levels – Operations and Strategy – Operations Management Vs. Operations Strategy – Four perspectives on Operations Strategy – Decision areas: Structural and Infrastructural – The Process of Operations Strategy

**UNIT II PERFORMANCE OBJECTIVES 9**

Introduction – Quality: Hard, Soft – Speed: Time – Dependability: Time – Flexibility: Type – Internal and external benefits – The Operations Strategy Matrix – Performance Objectives and Competitive Factors – Product/Service Life Cycle on Performance Objectives

**UNIT III NEW APPROACHES 9**

Total Quality Management (TQM): Fit into Operations Strategy – Lean Manufacturing: Fit into Operations Strategy – Business Process Reengineering (BPR): Fit into Operations Strategy – Six Sigma: Fit into Operations Strategy.

**UNIT IV DECISION AREAS – I 9**



Capacity Strategy: Levels of capacity decision, Factors influencing the overall level of capacity, Location of capacity – Purchasing and Supply Strategy: Supply Networks, Do (Make) or Buy? the vertical integration decision.

**UNIT V                          DECISION AREAS – II    9**

Process Technology Strategy: Classification, Three dimensions of process technology – Improvement Strategy: Breakthrough Improvement and Continuous Improvement, The Importance – Performance Matrix

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Nigel Slack, Michael Lewis, Mohita Gangwar Sharma. Operations Strategy, Pearson Education Limited, England, 5th edition, 2018.

**REFERENCE BOOKS:**

1. David Walters. Operations Strategy, Palgrave Macmillan Publisher, 2015.
2. JA Van Mieghem and Gad Allon. Operations Strategy: Practices and Principles, Dynamic Ideas LLC 2nd edition, 2015.

**COURSE OBJECTIVE:**

- To provide foundational knowledge associated with the services operations management
- To describe the various elements of services operations management
- To describe the various decision areas such as design quality, demand and capacity for services

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the fundamental concepts of services operations management.
- CO – 2 : Understand the Classification of services.
- CO – 3 : Explain the Design elements of services.
- CO – 4 : Understand the Service Quality Life Cycle.
- CO – 5 : Explain how the Total Quality Management (TQM) fit into service management.
- CO – 6 : Understand the Service Quality.
- CO – 7 : Explain the Process Analysis of Service Facility.
- CO – 8 : Explain the Techniques of Facility Location.
- CO – 9 : Explain the Techniques of Forecasting Demand.
- CO – 10 : Explain the Service Inventory Management.

**UNIT I INTRODUCTION 9**

Introduction – Goods Vs. Services – Definition of Services – Nature and characteristics of services – Classification of services – Services in Manufacturing Sector – The service-process matrix – Service Strategy – Competitive Service Strategies – Strategic Service Vision

**UNIT II SERVICE DESIGN 9**

Introduction – New service design and development – Design elements – Service system design and delivery process: Classification of Service Processes, Process Structure – Technology in Services – Product/Service Life Cycle on Performance Objectives

**UNIT III SERVICE QUALITY 9**

Defining Service Quality – Measuring Service Quality: SERVQUAL – Quality Service by Design – Service process control – Quality philosophy and performance excellence – Total Quality Management (TQM) tools: Seven Quality Control (QC) tools



## **ELECTIVE COURSES – ENTREPRENEURSHIP**

**18EMBS48**

**ENVIRONMENTAL STUDIES**

**3 0 0 3**

### **COURSE OBJECTIVE:**

- To enable the students, acquire knowledge of Environmental studies and their use, structure and function of an ecosystem, threats, bio-diversity, solid waste management, population explosion, disaster management, value management.

### **COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Explain the natural environment and its relationships with human activities.
- CO – 2 : Analyze the renewable and non-renewable sources.
- CO – 3 : Evaluate strategies, technologies, and methods for sustainable of environmental systems.
- CO – 4 : Describe and analyze human impacts on the environment and conservation.
- CO – 5 : Demonstrate an awareness, knowledge, and appreciation of ecological processes.
- CO – 6 : Recall core concepts and methods from ecological and physical sciences.
- CO – 7 : Explain the effects of pollution and its prevention.
- CO – 8 : Determine a general explaining of the disaster management.
- CO – 9 : Explain the human rights, human health and current environmental challenges.
- CO – 10 : Analyze the role of Information Technology in Environment.

### **UNIT I MULTIDISCIPLINARY NATURE 9**

Definition, scope and importance, Need for public awareness. Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems. Role of an individual in conservation of natural resources, equitable use of resources for sustainable lifestyles.

### **UNIT II ECOSYSTEMS 9**

Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids

### **UNIT III BIODIVERSITY AND ITS CONSERVATION 9**

Introduction – Definition: genetic, species and ecosystem diversity, Biogeographically classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels. Hot-spots of biodiversity. Threats biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

**UNIT IV ENVIRONMENTAL POLLUTION 9**

Definition, Cause, effects and control measures of several pollutions, Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslides

**UNIT V HUMAN POPULATION AND THE ENVIRONMENT 9**

Population growth, variation among nations. Population explosion – Family Welfare Programme. Environment and human health, Human Rights. Value Education. HIV/AIDS. Women and Child Welfare. Role of Information Technology in Environment and human health. Case Studies

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. Mahua Basu and Xavier Savarimuthu SJ, Fundamentals of Environmental Studies, 8 Nov 2017
2. Gowri Suresh, Tata McGraw- A Textbook of Environmental Studies-Hill Education,2012

**REFERENCE BOOKS:**

1. Joni Adamson , William A. Gleason , David N. Pellow, Keywords for Environmental Studies Paperback – February 26, 2016.
2. Gowri Suresh, Environmental Studies and Ethics-K. International, 2010.
3. Chary, Environmental Studies, Macmillan, 2008.

**COURSE OBJECTIVE:**

- To create a mindset of value system among the students.
- To understand the concept of transformation from existing state to higher state.
- To understand the enterprise skills such as experience intuition and wisdom.
- To identify the strategies to tackle the problem when it comes to directing human resources

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Discuss about the need for holistic and ethical approach to management.
- CO – 2 : Analyze the ‘Qualitative sincerity’ which is considered as the guiding motto.
- CO – 3 : Analyze the moral obligations of individuals and groups in organizations.
- CO – 4 : Understand the individual development as the most relevant work-philosophy.
- CO – 5 : Analyze the teams and organizations, evaluating ethical approach.
- CO – 6 : Compare and contrast power and influence of leadership.
- CO – 7 : Assess the knowledge about the organization structure and its types.
- CO – 8 : Describe about the line and staff authority.
- CO – 9 : Demonstrate the dynamics of organizational change.
- CO – 10 : Identify the major issues in business ethics and corporate social responsibility.

**UNIT I INTRODUCTION****9**

Business Ethics: Introduction, Business Ethics and Management, Business Ethics and Moral Obligations; Corporate Social Responsibility; Corporate Governance; Report of the Kumar Mangalam Birla Committee on Corporate Governance; Role of Media in Ensuring Corporate Governance; Environmental Concerns and Corporations.

**UNIT II ETHOS & VALUES IN MODERN MANAGEMENT****9**

Ethical Issues related with Advertisement and Marketing; Secular versus Spiritual Values in Management, Work Ethics, Stress at Workplace

**UNIT III PROCESS OF ETHICAL DECISION-MAKING****9**

Approaches: Consequentialist theories, Deontological theories, and Virtue ethics approach ñ  
 Process of ethical decision-making in business ñ Individual differences and ethical judgement -  
 Cognitive barriers to a good ethical judgement and Whistle Blowing.

**UNIT IV ETHICS MANAGEMENT****9**

Role of organizational culture in ethics ñ Structure of ethics management: Ethics Committee, Ethics Officers, and the CEO ñ Communicating ethics: Communication Principles, Channels, Training programmes, and evaluation ñ Ethical Audit ñ Corporate Governance and ethical responsibility ñ Transparency International and other ethical bodies

**UNIT V HOLISTIC MANAGEMENT SYSTEM****9**

A Holistic Management System; Management in Indian Perspective; Basic principles of Indian Ethos for Management Mental entity, enriching sentiment, perception, mind and will power by life balancing techniques, Social entity, building quality communication with others by the techniques of professional and working development and social integrity.

**TOTAL: 45 HOURS****TEXT BOOKS:**

1. S.A. Sherlekar, Ethics in Management, Himalaya Publishing House, 2009.
2. William B. Werther and David B. Chandler, Strategic corporate social responsibility, Sage Publications Inc., 2011
3. Robert A.G. Monks and Nell Minnow, Corporate governance, John Wiley and Sons, 2011

**REFERENCE BOOKS:**

1. W.H. Shaw, Business Ethics, Cen gage Learning, 2007.
2. Beeslory, Michel and Evens, Corporate Social Responsibility, Taylor and Francis, 1978.
3. Philip Kotler and Nancy Lee, Corporate social responsibility: doing the most good for company and your cause, Wiley, 2005.
4. Subhabrata Bobby Banerjee, Corporate social responsibility: the good, the bad and the ugly, Edward Elgar Publishing, 2007.

**COURSE OBJECTIVE:**

- To explain the conceptual framework for business policy and strategic, find the objectives and goals, its vision, Mission and purpose.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Analyze the main structural features of an industry and develop strategies.
- CO – 2 : Recognize the different stages of industry evolution and recommend strategies.
- CO – 3 : Appraise the resources and capabilities of the firm in terms of their ability.
- CO – 4 : Demonstrate explaining of the concept of competitive advantage and its sources.
- CO – 5 : Distinguish the two primary types of competitive advantage.
- CO – 6 : Analyze dynamics in competitive rivalry, including competitive action.
- CO – 7 : Formulate strategies for exploiting international business opportunities.
- CO – 8 : Explain how to formulate strategies that leverage a firm's core competencies.
- CO – 9 : Demonstrate the ability to think critically in relation to a particular problem.
- CO – 10 : Recognize strategic decisions that present ethical challenges.

**UNIT I STRATEGY AND POLICY 9**

Introduction, Fundamentals of Strategy, Conceptual Evolution of Strategy, Scope and Importance of Strategies, Purpose of Business, Objectives and goals - Difference between Goals and Objectives of Business – Strategic Intent through Vision and Mission, Policy Statements –Introduction to Business policy – Importance of Business policy.

**UNIT II COMPETITIVE ADVANTAGE 9**

External Environment - Porter's Five Forces Model-Strategic Groups Competitive Changes during Industry Evolution- Globalisation and Industry Structure - National Context and Competitive advantage Resources- Capabilities and competencies–core competencies - Resources and Capabilities durability of competitive Advantage - Generic Building Blocks of Competitive Advantage- Distinctive - Avoiding failures and sustaining competitive advantage

**UNIT III STRATEGIES 9**

The generic strategic alternatives – Stability, Expansion, Retrenchment and Combination strategies - Business level strategy- Strategy in the Global Environment-Corporate Strategy - Vertical



Integration-Diversification and Strategic Alliances- Building and Restructuring the corporation- Strategic analysis and choice - Environmental Threat and Opportunity Profile (EP) - Organizational Capability Profile - Strategic Advantage Profile - Corporate Portfolio Analysis - SWOT Analysis - GAP Analysis - Mc Kinsey's 7s Framework - GE 9 Cell Model - Distinctive competitiveness - Selection of matrix - Balance Score Card-case study.

**UNIT IV STRATEGY IMPLEMENTATION & EVALUATION 9**

The implementation process, Resource allocation, Designing Organizational structure-Designing Strategic Control Systems- Matching structure and control strategy-Implementing Strategic change-Politics-Power and Conflict-Techniques of strategic evaluation & control-case study.

**UNIT V BUSINESS POLICY AND DECISION MAKING 9**

Factors Considered Before Framing Business Policies-Steps Involved in Framing Business Policies- Policy Cycle and its Stages- Implementation of Policy Change - Role of Policies in Strategic Management.

**TOTAL: 45 HOURS**

**TEXT BOOKS:**

1. G.U. Satya Sekhar, Business policy and Strategic Management, I K Publishing House, 2009.
2. Tony Morden, Principles of strategic management, Ash gate publishing, 2007.
3. Kim warren, Strategic management dynamics, John wiley & sons, 2008.

**REFERENCE BOOKS:**

1. Thomas L. Wheelen, J.David Hunger and KrishRangarajan, Strategic Management and Business policy, Pearson Education., 2006.
2. Charles W.L.Hill& Gareth R.Jones, Strategic Management Theory, An Integrated approach, Biztantra, Wiley India, 2007.
3. AzharKazmi, Strategic Management & Business Policy, Tata McGraw Hill, Third Edition, 2008.

**COURSE OBJECTIVE:**

- To recognize the impact of Information and Communication technologies, especially of the Internet in business operations in the role of Management with the context of e-Business and e-Commerce.

**COURSE OUTCOMES:**

At the end of the course, the students will be able to:

- CO – 1 : Recognize the impact of Information and Communication technologies
- CO – 2 : Recognize the fundamental principles of e-Business and e-Commerce.
- CO – 3 : Distinguish the role of Management in the context of e-Business and e-Commerce
- CO – 4 : Explain the added value, risks and barriers in the adoption of e-Business.
- CO – 5 : Examine applications of e-Commerce in relation to the applied strategic.
- CO – 6 : Employ tools and services of the internet in the development of a virtual e-commerce.
- CO – 7 : Describe the various characteristics of electronic payment systems.
- CO – 8 : Explain the security protocols and the issues in internet security.
- CO – 9 : Discuss various legal and ethical issues specific to E-Business.
- CO – 10 : Explain the privacy issues specific to e-business.

**UNIT I INTRODUCTION TO E-BUSINESS 9**

Overview of E-Business; Fundamentals, E-Business framework; E-Business application; Major requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

**UNIT II TECHNOLOGY INFRASTRUCTURE 9**

Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.

**UNIT III BUSINESS APPLICATIONS 9**

Consumer oriented e-business – e-tailing and models - Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet.

**UNIT IV E-BUSINESS PAYMENTS AND SECURITY 9**

E-payments - Characteristics of payment of systems, protocols, e-cash, e-cheque and Micro

payment systems- internet security – cryptography – security protocols – network security.

## **UNIT V LEGAL AND PRIVACY ISSUES**

**9**

Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.

**TOTAL: 45 HOURS**

### **TEXT BOOKS:**

1. Harvey M.Deitel, Paul J.Deitel, Kate Steinbuhler, e-business and e-commerce for managers, Pearson, 2011
2. ParagKulkarni, SunitaJahirabadkao, PradeepChande, e business, Oxford University Press, 2012.
3. Hentry Chan & el , E-Commerce – fundamentals and Applications, Wiley India Pvt Ltd, 2007.

### **REFERENCE BOOKS:**

1. Gary P. Schneider, Electronic commerce, Thomson course technology, Fourth annual edition, 2007
2. Bharat Bhasker, Electronic Commerce – Frame work technologies and Applications, 3rd Edition. Tata McGrawHill Publications, 2009
3. KamleshK.Bajaj and Debjani Nag, Ecommerce- the cutting edge of Business, Tata McGrawHill Publications, 7th reprint, 2009

# **SEMESTER IV**

**18RMBS41****PROJECT WORK****PROJECT OUTCOMES:**

At the end of the project, the students will be able to:

- CO – 1 : Relate in-depth understanding of the business/management environment
- CO – 2 : Create and develop deep understanding of the interaction.
- CO – 3 : Analyze and solve problems on an executive level and demonstrating critical.
- CO – 4 : Design the general (core) management skills in the chosen area of specialisation.
- CO – 5 : Match in-depth knowledge of the management issues characteristic of the area.
- CO – 6 : Manage business problem in new and unfamiliar circumstances.
- CO – 7 : Design strategies to solve business problems and pursue opportunities.
- CO – 8 : Relate the ability to communicate formulated strategies in a clear and concise manner.
- CO – 9 : Conclude the knowledge and skills acquired in the classroom to a professional context.
- CO – 10 : Interpret a variety of ways to engage in experiential learning.