



MBA Programme Structure

First Semester					
Theory					
Sl. No.	Category	Course Code	Course Title	L-T-P	Credit
1	Core	19MB101	Marketing Management	3-0-0	3
2	Core	19MB102	Financial Accounting & Analysis	3-0-0	3
3	Core	19MB103	Human Resources Management	3-0-0	3
4	Core	19MB104	Statistics for Management	3-0-0	3
5	Core	19MB105	Business Economics	3-0-0	3
6	Core	19MB106	Management Principles and Practice	3-0-0	3
7	Core	19MB107	Managerial Communication	3-0-0	3
Total Credit (Theory)					21
Practical					
1	Sessional	19MB108	Computer Application in Business Lab	0-0-3	3
2	Sessional	19MB109	PD Lab-1	0-0-2	2
Total Credit (Practical)					5
Total Semester Credit					26



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Second Semester					
Theory					
Sl. No.	Category	Course Code	Course Title	L-T-P	Credit
1	Core	19MB201	Production & Operation Management	3-0-0	3
2	Core	19MB202	Financial Management	3-0-0	3
3	Core	19MB203	Business Law	3-0-0	3
4	Core	19MB204	Organisational Behaviour	3-0-0	3
5	Core	19MB205	Business Analytics	3-0-0	3
6	Core	19MB206	Entrepreneurship and Business Incubation	3-0-0	3
7	Core	19MB207	Business Research Methods	3-0-0	3
Total Credit (Theory)					21
Practical					
1	Sessional	19MB208	BA Lab-2(Business Analytics)	0-0-2	2
2	Sessional	19MB209	SPSS Lab	0-0-2	2
3	Sessional	19MB210	PD Lab-2	0-0-2	2
Total Credit (Practical)					6
Total Semester Credit					27



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Third Semester					
Theory					
Sl. No.	Category	Course Code	Course Title	L-T-P	Credit
1	Core	19MB301	Cost & Management Accounting	3-0-0	3
2	Electives		Elective-1	3-1-0	4
3	Electives		Elective-1	3-1-0	4
3	Electives		Elective-1	3-1-0	4
4	Electives		Elective-2	3-1-0	4
5	Electives		Elective-2	3-1-0	4
6	Electives		Elective-2	3-1-0	4
Total Credit (Theory)					27
Practical					
1	Field Trips/Internship	19MB301	Summer Internship Viva	0-0-2	2
Total Credit (Practical)					2
Total Semester Credit					29



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Fourth Semester					
Theory					
Sl. No	Category	Course Code	Course Title	L-T-P	Credit
1	Electives		Elective-1	3-1-0	4
2	Electives		Elective-1/ MOOCs	3-1-0	4
3	Electives		Elective-2	3-1-0	4
4	Electives		Elective-2 / MOOCs	3-1-0	4
Total Credit (Theory)					16
Practical					
2	Field Trips/Internship	19MB 401	Comprehensive Viva	0-0-2	2
1	Field Trips/Internship	19MB402	Dissertation / Internship	0-0-2	2
Total Credit (Practical)					4
Total Semester Credit					20



Electives

Specialization/ Category	Course Code	Course Title
Marketing	19MBM01	Consumer Behavior
	19MBM02	Sales and Distribution Management
	19MBM03	Digital and Social Media Marketing
	19MBM04	Retail Management
	19MBM05	Service Marketing
Finance	19MBF01	Financial Market and Services
	19MBF02	Financial Derivatives
	19MBF03	Security Analysis and Portfolio Management
	19MBF04	Direct Taxation
	19MBF05	Project Appraisal
HR	19MBH01	Human Resource Management Analytics
	19MBH02	Industrial Relations
	19MBH03	Human Resource Development
	19MBH04	Compensation Management
	19MBH05	Strategic HRM
Operations	19MBP01	Supply Chain and Logistics Management
	19MBP03	Quality Toolkit for Managers
	19MBP02	Project Management
	19MBP04	Supply Chain Analytics
	19MBP05	Management of Manufacturing System

Note: A student can select any 2 elective from Marketing, HR, Finance, and Operation. Any three subjects from the above specified electives are assigned for 3rd semester and two subjects from the above specified electives are assigned for 4th semester after discussion in departmental forum.



SYLLABUS FOR MBA (2 YEAR FULL TIME COURSE)

SEMESTER – III (CORE SUBJECT)

Subject Code: 19MB301	Subject Name: COST & MANAGEMENT ACCOUNTING	L-T-P-3-0-0	Credit-3
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Course Objective:

Students are expected to get exposure to various cost concepts and their applications. Various cost factors like standard, materials and marginal costs play important role in decision making so students are expected to understand it.

Module-1- Introduction to Cost and Management; (6 Hours)

Scope of Cost and Management Accounting, Types of cost, Cost Accounting and Financial Accounting ,Methods of Costing, Techniques of Costing, Classification of costs, Cost centre, Cost Units, Profit Centre, Investment Centre, Preparation of Cost Sheets, Total Costs, Unit Cost.

Module-II Cost Accounting systems; (8 Hours)

Material Costs, Valuing material issues and stock, Overheads: Meaning and importance, production overheads, primary and secondary distribution, allocation, apportionment of cost, absorption by production units, Methods of over and under absorption of overhead.

Module-III Methods and Techniques: (10 Hours)

Job Costing, Batch costing, Contract costing, Process Costing, Process losses and Inter-process profits, Simple Equivalent Production, Joint Products and By products, Service Costing, Transport, Hospital, Canteen, Marginal Costing: Nature and scope, Marginal cost equation, Profit and Volume ratio, Break Even Chart, Impact on profits due to changes in various factors, use of probabilities and application of marginal costing and marginal cost decisions.

Module-IV Cost Management Tools: Budgetary Control: (12 Hours)

Functional Budgets, Cost Budget, Master Budget, Performance Budgeting, and Zero Based Budgeting, Flexible Budgets, **Standard Costing**: Standard Cost and Standard Costing, Standard Costing and Budgetary Control, Analysis of variances(material, labour, and overhead and sales) Disposal of variances, **Cost reduction and Productivity(Only Concepts)**: Cost reduction, value analysis, productivity, value added and Learning curves, Activity based costing.

Learning Outcomes:

1. To impart the students calculation of unit cost of job, process, contract
2. To guide the students in preparing budgets and technique of cost control
3. To acquaint the students in finding out break-even point for decision making.

Text Book:

[1] Arora M.N (2012), A Text book on Cost and Management Accounting, 10th edition, Vikas Publishing house.

Reference Books:

[2] Jain, Narang & Simmi Agrawal (2019), Cost and Management Accounting, Kalyani publisher.



(ELECTIVE SUBJECTS)

MARKETING

Subject Code: 19MBM01	Subject Name: CONSUMER BEHAVIOUR	L-T-P-3-1-0	Credit-4
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Course Objectives:

At the end of the course it is expected that the students will be Proficient and knowledgeable about the various disciplines contribution in understanding buyer behavior in a holistic manner. Familiar with the advances in consumer research in deciphering buyer motivation, and behaviour (pre-purchase, purchase and post purchase), impact of social and cultural variables on consumption decisions equipped with frameworks to analyze consumers behavior and use them in designing marketing strategies and in enhancing the effectiveness of marketing programmers.

Module I Introduction (10 Hours)

What Is Consumer Behavior? Why Study Consumer Behavior? Evolution of Consumer Behavior, How Do You Study Consumers? The Underlying Principles of Consumer Behavior, Challenges for the Future. The role played by Digital media and Internet.

Module II Consumer Decision Process (10 Hours)

The Consumer Decision Process Model, Variables that Shape the Decision Process, Types of Decision Process, Factors Influencing the Extent of Problem Solving Diagnosing Consumer Behavior. Need Recognition, Search, Pre-Purchase Evaluation,. Quality and satisfaction, Purchase Behavior in the E-Commerce Revolution, Consumer Resources: What People Spend When They Purchase, Communicating with Consumers: Integrated Marketing Communications, Post-purchase Processes, Measuring satisfaction and value, Value/Satisfaction delivery process and programs. Retention of customers through CRM.

Module III Individual Determinants (10 Hours)

Self Concept, Needs & Brand Choice Need recognition process, gaps in self image and ideal image, why certain attributes are used for evaluating brands, importance of attributes and need strength, identifying need areas. VALS and grouping consumers. Segmentation, targeting and positioning based on self and brand images. Consumer Personality and Consumer Motivation, Need identification and classification

Module IV External Influences on Consumer Behaviour (10 Hours)

Family Influences on Buyer Behavior, Joint Decision making process, influences, roles of different members, needs perceived and evaluation rules. Factors affecting the need of the family, family life cycle stage and size. Social Class, Reference Groups, Cultural Influences on Consumer Behaviour Impact of selling techniques on consumer behavior. Impact of selling cost on production.

Homogeneity of needs in social class, product usage norms and evaluation rules within class. Social Class stratification in India SEC, NCAER, BBDO, NRS, IRS classification of society etc. Changes in Gender perspectives.

Cultural Influences on Consumer Behaviour

Understanding cultural and sub-cultural influences on individual, norms and their role, customs, traditions and value system.

Consumer Beliefs, Feelings, Attitudes, and Intentions: Consumer Beliefs, Changing consumer Attitudes. Opinion Formation, Opinion Change, How Businesses Shape Consumers' Opinions.

Learning Outcomes:

1. Students will understand the significance of consumer behavior in purchasing process.
2. Students will explore the various components of consumer decision process.
3. Students will understand the role of culture and external influencing factors.



Text Book:

- [1] Blackwell, *Miniard, Engel & Rahman* (2017), *Consumer behaviour*, 10th edition, Cengage

Reference Books:

2. Loudon & Bitta(1992) *Consumer Behavior concepts and Applications* ,McGraw Hill.
3. Mukherjee Srabani (2011) *Consumer Behaviour* ,Cengage.



Subject Code: 19MBM02	Subject Name: SALES AND DISTRIBUTION MANAGEMENT	L-T-P-3-1-0	Credit-4
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Course Objective:

To apprise students about the various dimension of sales and their related placement activities of the finished products. While knowing it students will understand various inventory systems and its operations.

Module I Introduction; (10 Hours)

Sales, Meaning and Importance of Sales in Revenue generation and Profitability in connection to the Strategic Business Unit (SBU) and its Sustainability. Selling Process, Key factors affecting Sales development at a given market, contribution of different products at different stages of PLC and their management. Strategy, BCG Matrix & GE 9 Cell, Market Share and Market Potential, Product – Market Grid. Role of Promotion Mix in Sales development, IMC.

Module II (10 Hours)

Market scenario – Macro & Micro economic factors affecting Sales, Competition and competitor analysis –Competitor Array & profiling, Business Intelligence, Sales Forecasting – Importance and Techniques – Long Term (Time Series Analysis and Econometrics methods), Short Term (Moving Average and Exponential Smoothing), Qualitative Tools: Buying Intention Survey, Sales Force Opinion and Delphi Techniques. Products – Strategy, PLC, NPD, Brands and Branding Strategy, STP, Brand Equity.

Module III (10 Hours)

Pricing – Objectives and Factors affecting pricing, Pricing methods and Strategies, Penetration and Skimming Pricing, Cost Leadership concept and applications, Concept of Chinese Business Model. Distribution – Channels – Flows – Levels –Role of Intermediaries, Physical Distribution, Indenting and Ordering, Catering, Role of C & F Agent, Inventory Management & Control.



Module IV (10 Hours)

Sales Organization, Sales Force Management & Control, Deployment of Sales Force and Target Setting (Sales Quota), Direct Selling – Scouting, Routing and Scheduling – Logistics & SCM. Performance Evaluation – Target vs. Achievement, Calculation of variance, Compensation of Sales Force. Sales Conference.

Learning Objectives:

1. Understand various models of sales and their advantages.
2. Understand the market scenario and its optimization techniques.
3. Get to know manpower handling for an effective sales force.

Text Book:

- [1] Panda & Sahadev (2011), Sales and Distribution Management , 2nd edition, Oxford

Reference Books:

- [2] Havaldar (2011), Sales and distribution Management , 2nd edition, TMH
[3] Panda Tapan (2019) , Marketing Management , 2nd edition, Oxford.



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Subject Code: 19MBM03	Subject Name: Digital and Social Media Marketing	L-T-P-3-1-0	Credit-4
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Course Objectives:

- [1] This course will deliver industry background knowledge to navigate Internet Marketing topics including online advertising, search, social media, and online privacy.
- [2] It will give a brief understanding to quantitatively and qualitatively evaluate an experiment to measure the effectiveness of business decisions and online advertising effectiveness in particular.
- [3] Students will also gain knowledge to design and implement an experiment.

MODULE 1: (10 Hours)

Introduction to Digital Marketing: Key Concepts of Digital Marketing, Traditional vs. Digital Marketing, The Opportunity of Digital Marketing, Characteristics of Digital Marketing, Implications of Digital Marketing, Market ,Role of Internet; Current trends, Info-graphics, implications for business & society; Emergence of digital marketing as a tool; Drivers of the new marketing environment; Digital marketing strategy; P.O.E.M. framework, Digital landscape.

MODULE 2: (10 Hours)

Internet Marketing and Digital Marketing Mix: Internet Marketing, opportunities and challenges; Digital marketing framework; Digital Marketing mix, Impact of digital channels on IMC; Digital marketing plan, Digital marketing models. Search Engine Advertising, Display marketing .

MODULE 3: (10 Hours)

Social Media Marketing: Introduction to social media platforms, penetration & characteristics; Building a successful social media marketing strategy: Facebook

Marketing, LinkedIn Marketing, Twitter Marketing, Instagram and Snapchat, Mobile Marketing & E-mail Marketing.

MODULE 4: (10 Hours)

Trends in Digital Advertising: Introduction and need for SEO, How to use internet & search engines; search engine and its working pattern, On-page and off-page optimization, SEO Tactics. Introduction to SEM ,
Web Analytics:- Google Analytics & Google AdWords; data collection for web analytics, multichannel attribution, Universal analytics.

Learning Outcome

- [1] Students will get firsthand knowledge about social media and their use.
- [2] Impact of social media over marketing and promoting the product can be understood.
- [3] Challenges to deal with digital media and marketing can be discussed and techniques can be developed.

Text Book

- [1] Gupta ,(2017) Digital Marketing , 2nd edition,Mc-Graw Hill
- [2] Bhatia(2017) Fundamentals of Digital Marketing, Pearson

Reference Books:

- [1] Kotler (2016) Marketing 4.0: – Moving from Traditional to Digital, Wiley
- [2] Barker, Barker, Nicholas (2016) Social Media Marketing: A Strategic Approach , 2nd edition, South western publishing house.



Subject Code: 19MBM04	Subject Name: RETAIL MANAGEMENT	L-T-P-3-1-0	Credit-4
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Course Objectives:

Students will be apprised about various functions of retail markets. They will explore various channels of it and understand how it influences their life.

Module - I : Overview of Retailing : (10 Hours)

Introduction to Retailing - Role & Functions of a retail, Evolution of Retailing in India, The Evolution of Retail formats, Retail Marketing Mix, Retail consumer behavior.

Module - II : Retail Planning: (10 Hours)

Store Layout – Retail Location Decision , Retail Store Design, Space Management, Visual Merchandising - Merchandise Presentation Techniques, Retail Aesthetics, Retail Atmospherics.

Module -III : Retail Mix: (10 Hours)

Product Merchandise, Product Assortment, Retail Pricing: Price Setting, Pricing Strategies, Retail Communication Mix, Selection of promotion mix, Managing Retail Brands- Branding strategies in retail, brand equity, Retail brand extension, Creating brand value.

Module – IV: Retail Operations: (10 Hours)

Organization Structure and Management of Human Resources, Relationship marketing in retailing, Retail Supply chain management, Technology in Retailing, Future of Retailing, E-Retailing. Issues impacting retail business in India .

Learning Outcomes:

1. To understand retailing and its different formats.
2. To learn significance of different aspects of retail merchandising.
3. To learn the importance of human values in retail operations and their styles of decision making.

Text Book:

- [1]** Bajaj, Tuli, &. Srivastava (2016) Retail Management, 3rd edition, Oxford

Reference Books:

- [2]** Dunne & Lusch (2014) Retail Management, , 8th edition, Cengage Learning
- [3]** Levy & Weitz (2007), Retailing Management ,8th edition, The McGraw Hill Companies
- [4]** Pradhan (2014), Retailing Management Text & Cases, 4th edition, The McGraw Hill Companies
- [5]** Berman & Evans (2000) Retail Management A Strategic Approach ,7th edition, The Prentice Hall of India, New Delhi



Subject Code: 19MBM05	Subject Name: SERVICES MARKETING	L-T-P-3-1-0	Credit-4
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Course Objectives:

This course aims to help participants appreciate the ever increasing significance of services in the economies worldwide and specifically, in the marketers' scheme of things. Creating and marketing value in today's increasingly service and knowledge-intensive economy requires an understanding of the powerful design and packaging of 'intangible' benefits and products, high-quality service operations and customer information management processes, motivated and competent front-line employees, a loyal and profitable customer base, and the development and implementation of a coherent service strategy to transform these assets into improved business performance..

Module -1 - Understanding services products, consumers and Markets:

(10 Hours)

Introduction, services in the modern economy, Classification of services, marketing services Vs. Physical services, services as a system. Positioning services in a competitive.

Module -2 - Service Products: (8 Hours)

`Developing Services products-core and supplementary, Distribution through physical and digital channels, Setting Prices and revenue management, Service promotion and educating customers.

Module-3 - Managing Customer Interface: (10 Hours)

Designing and managing services processes, Balancing demand and supply/capacity, Service environment-services cape, managing service people for competitive advantage.

Module – 4 Customer Relationship Management (12 Hours)

Managing relationship and building service loyalty, handling of customer complaints and service recovery, Improving service quality-SERVQUAL-service productivity, Achieving Service Leadership position.

Learning Outcomes:

1. The Students will understand the challenges of Marketing Services and relevance of Marketing mix of 7ps.
2. To make the students analyze the difficulties of service position, core and supplementary products.
3. To make students understand significance of Services processes, how to balance supply and demand for the physical capacity.
4. The students will analyze how to build loyal employees for service quality and pricing.

Text Book:

- [1] Lovelock, Wirtz & Chattarjee(2017), Services Marketing People, Technology, Strategy, 8th Edition, Pearson Education.

Reference Book:

- [2] .Zeithaml & Bitner(2010) Services Marketing-Integrating Customer Focus Across the Firm, 5th edition,TMH.



FINANCE

Subject	Code:	Subject Name:	L-T-P-3-1-0	Credit-4
19MBMF01		FINANCIAL MARKETS AND SERVICES		

Course Objective:

To impart the students about the structure of Indian financial systems and services.

Module-I: Introduction

(10 Hours)

Indian Financial System, Introduction, Components and Functions of Indian Financial System, Reforms in Indian Financial systems.

Indian Banking and Insurance Systems: Definition of Banks, Structure and Types of Banks in India, Roles and Functions of Banks in India, Different Banking services, Banking Products-Deposit and Loan Products, Recent trends in banking system in India, Definition & Principles of insurance, Types of insurance: Life and Nonlife Insurance, Re-Insurance & Micro Insurance, IRDA: Role, Functions and powers, Different Insurance Product & their Applicability(Pension plans, Banc-assurance, ULIPS, Endowment Plan, and Money back plan)

Module-II: Money Market and Capital Market

(10 Hours)

Features of Money Market, Composition of Money Market: Players, Instruments and Institutions in Money Market, Primary Market: Functions of Primary Market, IPO, SEBI guidelines for IPO, Methods of issuing IPO, Secondary Market: Functions of Secondary Market, Instruments traded in Secondary Market, Trading mechanism in Secondary



Market, Online trading, De-Materialization Account, Brokers, Kinds of Brokers, Registration of Brokers.

Module-III Mutual funds

(10 Hours)

Introduction, Classification of funds, Organisation structure of Mutual Fund company(Powers & Functions),Mutual fund Investment vs. Stock Market Investment, Venture Capital: Meaning, Types of Venture Capital, Stages of Venture Capital financing, exit routes.

Module-IV Leasing

(10 Hours)

Leasing: Concept and classification, financial evaluation of leasing, Hire Purchase: Conceptual framework, financial evaluation of hire purchase, leasing vs. hire purchase.

Course Outcomes:

1. To provide knowledge about the financial markets and its mechanisms
2. To acquaint the students about financial procedures involved in raising finance and intermediaries involved for promotion, participation, liaison, research and development.
3. To guide the students about various financial services.

Text Book:

[1] Gordon &Natarajan (2011),Financial Markets and Services,11th edition,Himalaya Publishing House.

Reference Books:

- [2] Gupta &Agrawal (2010),Financial Services, Kalyani Publications
- [3] Khan (2010),Financial Services, 8th edition,TMH
- [4] Gurusamy (2009),Indian financial System,2nd edition TMH



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Subject Code: 19MBF02	Subject Name: FINANCIAL DERIVATIVES	L-T-P-3-1-0	Credit-4
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Course Objective:

This paper will enable students to understand the nuances involved in derivatives and understand the basic operational mechanisms in derivatives

Module-I Financial Derivatives – An overview; (10 Hours)

Introduction , Definition of Financial Derivative , Features, Types of Derivatives, Basic Financial Derivatives, History, development and growth of Derivatives Market, Use of Derivatives, Traders in Derivative Markets, Factors contributing to the growth of Derivatives, Forward contract, Features of Forward Contract, Classification of Forward Contracts.

Module-II Future Market (10 Hours)

Introduction, Financial Futures contracts, Types of Financial Futures, Basic hedging practices, continuous compounding, cost of carry, margin requirement for futures, convenience yield, stock futures, use and application of stock index futures, arbitrage with stock futures, Beta and the optimal hedge ratio, Currency Futures Market.

Module-III: Options Market; (12 Hours)

Types of options, payoff of long and short put, payoff of long and short call, covered call writing, protective put strategy, straddle, strangle, bull spreads, bear spread, butterfly spread, box spread.

Principles of option pricing- put-call parity, binomial model for pricing options, Black-Scholes model, volatility and implied volatility from the Black-Scholes model, options Greeks and basic delta hedging.

Module-IV: Swap Market and Risk Management: (8 Hours)

SWAP: Introduction, concept, Nature, Evolution, Features, Types of Swaps: plain vanilla swaps, interest rate swaps, currency swaps; Delta-Gamma hedging, hedging policy-financial distress, cash flow hedges and value hedges.

Learning Outcomes:

1. To possess good skills in hedging risks using derivatives
2. To guide the students to mitigate risk or assumed risk.
3. To provide learning about insurable risk of various trade contracts.

Text Book:

1. Gupta (2005) Financial Derivatives-Theory, concepts and problems, PHI

Reference Books:

2. Srivastava(2014) Derivatives and Risk Management, 2nd edition Oxford
3. Hull & Basu (2018) Options, Futures and other Derivatives, 10th edition, Pearson
4. Verma J.R (2008), Derivatives and Risk Management, TMH



Subject Code: 19MBF03	Subject Name: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	L-T-P-3-1-0	Credit-4
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Course Objectives:

Enables student to understand the nuances of stock market operations understand the techniques involved in deciding upon purchase or sale of securities.

Module-I: Investment: (10 Hours)

Meaning, Features and objectives, Alternative forms of investment, Valuation of Shares, Concepts of risk and return, how risk is measured in terms of standard deviation and variance, the relationship between risk and return, Evolution of portfolio management, phases of portfolio management

Module-II: Fundamental Analysis, (8 Hours)

Economic, Industry and Company Analysis, Technical Analysis, Charting tools, Volume and price trends, technical indicators, Efficient Market Hypothesis.

Module-III: Portfolio Analysis: (12 Hours)

Risk & Return on investment measuring risk and return on 2 Asset on 'n' asset portfolio, Markowitz Efficient function. Portfolio Selection: feasible set portfolios, efficient set, utility theory, selection of optional portfolio using utility concept, Markowitz portfolio optimization, efficient frontier with risk free lending and borrowing capital, CAPM, pricing of securities with CAPM, Arbitrage pricing theory.

Module-IV: Risk Analysis (10 Hours)

Sharpe's Single Index model, Computation of Risk and Return on a portfolio, Interpretation of portfolio, Alpha, Beta, Sharpe portfolio optimization. Portfolio Revision, Performance Evaluation of portfolio, portfolio management strategies.



Learning Outcomes:

1. To become a good investment analyst
2. To get an idea about stock market and its operations.
3. Financial modeling on share prices

Text Book:

- [1] V.K.Bhalla (2019) Security Analysis & Portfolio Management, 19th edition , S.Chand

Reference Books:

- [2] Kevin (2006) Security Analysis & Portfolio Management, PHI
[3] Singh(2010) Investment Management(SAPM), 10th edition , Himalaya Publishing House
[4] Sasidharan, Mathews(2010) SAPM, 10th edition, Tata McGraw Hill



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Subject Code: 19MBF04	Subject Name: DIRECT TAXATION	L-T-P-3-1-0	Credit-4
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Course Objectives:

The subject aims at apprising students about latest changes in Income Tax with market implications.

Module-I Basic Concepts: (10 Hours)

Definition of important terms e.g. Income Assesses, Person, and assessment year. Agricultural Income: Partial integration of Agricultural income in total income.

Module II Tax Liability: (10 Hours)

Residential Status of Assess and scope of total income. Exempted Income U/S 10 of income tax Act.

Module III Assessment (10 Hours)

Income from salary, Income from house property. Income from business and Profession, Income from Capital Gains, Income from other sources.

Module 4 - Deemed Income, (10 Hours)

Clubbing of Incomes and set off and carry forward of losses, computation of total income of individual Assesses and deductions. U/S 80 relating to individual Assesses.

Learning Outcomes:

1. To provide knowledge about residential status of assesses and their exempted incomes.
2. Students will be familiarized about the calculation of tax liability.
3. To be aware of set up and carry forward of losses.



Text Book:

iii Gaur & Narang (2020)Income Tax Law & Practice ,35th edition,Kalyani publication.

Reference Books:

1. Lal(2013),Income Tax Law & Practice, 33th edition, I K International Publishing House Pvt. Ld.



Subject Code: 19MBF05	Subject Name: PROJECT APPRAISAL	L-T-P-3-1-0	Credit-4
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Course Objective:

To explain identification of a project, feasibility analysis including market, technical and financial appraisal of a project. Understand the relevance of alternative project appraisal techniques, financial structuring and financing alternatives. This course intends to involve students to apply appraisal techniques for evaluating live projects

Module I: Appraisal (10 Hours)

An introduction, Project appraisal and evaluation , Project cycle, Project cycle management , Private and Public sector Projects/commercial / National probability; Identification of investment opportunities – industry analysis review of project profiles, – feasibility study , Project identification and formulation , Generation of Project ideas, Basic Principals of Project Analysis Entrepreneurship – concept, Theory and perspective

Module II: Market Analysis: (10 Hours)

Market analysis of a project, Need for market analysis, Demand and supply analysis, Collection analysis, primary /secondary data, Forecasting techniques Technical appraisal of a project, Business and Technology Acquisition and management of technology

Module III: Investment appraisal (10 Hours)

Introduction and techniques, DCF and non DCF methods, Sensitivity Analysis, Financial needs of a Project, Investment criteria, Project Appraisal parameters of select Financial Institutions. Social cost benefit analysis – value added concept, social surplus indirect impact of projects, rationale of SCBA, Efficiency and Equity in Project Appraisal, UNIDO approach, Little Mirlees Approach, Project Appraisal of Indian Plans

Module IV: Project risk assessment (10 Hours)

Risk and Sensitivity Analysis, Taxonomy of Risks, probabilistic cash flow approaches – application of simulation techniques; Monitoring and Evaluation of a Project - PERT / CPM, Monitoring mechanism, Evaluation ad Lessons, Preparation of project report, Financial structuring – innovative financing alternatives, collaboration, lease financing, equity participation – project finance vis-à-vis corporate finance, Managing joint venture projects.

Learning Objectives:

1. To apprise the projects for identification of investment opportunities
2. To provide knowledge about analysis of market for demand and supply and techniques of forecasting.
3. To acquaint about the social cost benefit analysis and application of simulation techniques.

Text Book:

- [1] Machiraju(2001) , Introduction to Project Finance, Vikas Publishing House

Reference Book:

- [2] Chandra (1987) Project Preparation Appraisal Budgeting and Implementation, 3rd edition, Tata McGraw Hill.



HUMAN RESOURCE MANAGEMENT

Subject Code: 19MBH01	Subject Name: Human Resource Management Analytics	L-T-P-3-1-0	Credit-4
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Course Objectives:

To identify each phase of the HR Analytics Process Model (APM) and its purpose and to describe best practices using HR analytics to support data-driven decision making.

Module-I-HR Analytics , Process Model (10 Hours)

Meaning and Conceptual framework, Overview of HR Analytics. Decision Making Process, The Analytics Process Model (APM) and Its Phases, HR Analytics in the Workplace and the Human Capital Framework, Human Resource's Value Proposition

Module – II HR Quantitative Metrics /Techniques(12 Hours)

Key Systems of Record for HR Data, Software Tools, Metrics, Benchmarks, and Other Indicators, Using software for HR Analytics, Visualization, Analytic Techniques,

Module-III HR Regulations and Reporting Requirements (10 Hours)

HR Policies, Procedures, and Guidelines, Key Regulations and Reporting Requirements, Connecting Missions or Goals to HR Benchmarks and Metrics

Module- IV Presenting HR Data (8 Hours)

Assessing audience, Crafting the Message, Effectively Presenting HR Data

Learning Objectives:

1. To identify HR benchmarks and metrics relevant to agency mission and goals
2. To analyze workforce and talent data using Excel to identify trends and other actionable performance information
3. To give a short briefing to present analysis results

Text Book:

- [1] L Sundmark(2017), Doing HR Analytics.



Subject Code: 19MBH02	Subject INDUSTRIAL RELATIONS	Name: L-T-P-3-1-0	Credit-4
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Course Objective:

After studying the subject students will learn about the concept of Industrial Relation and their importance in today's work environment. The main aim of this course is to introduce students to the theories, institutions and practices of Industrial Relations, trade union, learn the concept of Industrial disputes and different mechanisms to settle it. Understand the concept of collective bargaining and emerging trends in the field of collective bargaining.

Module-I: Industrial Relations (10 Hours)

Concept, Approaches to IR, Parties to IR, System Model of IR Industrial Worker in India: Rise of Industrial Workers, Profile of Industrial Workers in India, Problems of Industrial Workers (absenteeism, commitment, Work Ethics), New actors and the emerging dynamic, Competition on the basis of cheap labor.

Module-II: Trade Unionism in India (10 Hours)

Introduction, Reasons for Joining Trade Unions, Functions of Trade Unions, Types of Trade Unions, Emerging role of trade Unions in India, Trade Union Act 1926.

Module-III: Industrial dispute and resolution (10 Hours)

Concept, nature & causes of industrial disputes machinery for solving industrial disputes under Industrial Disputes Act, 1947 at national and state level .Collective Bargaining, process, and stages of bargaining, Grievance Management. Workers participation in Management in India.

Module-IV Acts and Legislations: (10 Hours)

Factories Act 1948, Contract Labor Act 1970, Industrial Employment (Standing orders) Act, 1946.

Learning Outcomes:

1. Develop an understanding of industrial relations institutions such as employer associations, trade unions and industrial tribunals; principles of employment law.
2. Learn how to resolve industrial relations and human relations problems and promote welfare of industrial labor.
3. Design mechanisms to settle down industrial disputes and minimize the level of employee unrest by suggesting positive measures.
4. Learn how to implement different acts and legislations for carrying out different industrial activities

Text Books:

- [1] Ratnam, Dhal(2017) Industrial relations, 2nd edition,Oxford University Press.
- [2] Padhi (2012)Labor Laws, 2nd edition, PHI

Reference Books:

- [3] Sinha, Sinha & Shekhar(2017) Industrial Relations, Trade Unions & Labor Legislation,3rd edition, Pearson.
- [4] Monappa (2003)Industrial Relations, TMH, New Delhi
- [5] Mamoria, Gankar (2010) Dynamics of Industrial Relations,2nd edition,HPH



Subject Code: 19MBH03	Subject Name: HUMAN RESOURCE DEVELOPMENT	L-T-P-3-1-0	Credit-4
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Course Objective:

To make the students aware about the concepts, techniques & practices of Human Resource Development.

Module 1: Introduction to Human Resource Development: (10 Hours)

Concept; Relationship between human resource management and human resource development; HRD mechanisms, processes and outcomes; HRD matrix; HRD interventions; Roles and competencies of HRD professionals; Challenges in HRD.

Module 2: HRD Process: (10 Hours)

Assessing need for HRD; Designing and developing effective HRD programs; Implementing HRD programs; Evaluating effectiveness of HRD Programs; HRD audit; HRD culture and climate. Coaching and Mentoring, Counseling.

Module 3: HRD Activities: (10 Hours)

Employee development activities- Approaches to employee development, leadership development, action learning, assessment and development centres; HRD mechanisms for workers; Influence of motivation on development activities.

Module 4: HRD Applications and Trends: (10 Hours)

HRD in Organisations: Selected cases covering HRD practices in government organizations, manufacturing and service industries and MNCs; International experiences of human resource development.

Learning Outcomes:

1. To equip the students for applying the principles and techniques as professional for developing human resources in an organization

2. To understand the training process
3. To know various techniques to evaluate the human resource of organization to increase productivity.

Text Book:

[1] Werner & DeSimone (2010) Human resource development, 6th edition, South Western publishing.

Reference Books:

- [2] Nadler (1980) corporate human resources development, American Society for training and development.
- [3] Mankin (2009) Human resource development, 2nd edition, Oxford University Press India.
- [4] Haldar (2009) Human resource development, 2nd edition, Oxford University Press India.
- [5] Rao (2003) Future of HRD, Macmillan Publishers India.



Subject Code: 19MBH04	Subject Name	L-T-P-3-1-0	Credit-4
	COMPENSATION MANAGEMENT		

Course Objective:

Students will understand various dimensions of Compensation Management and different methods of payment with wages and different theories to determine wages. Understand the concept of job evaluation and emerging trends in the field of wage policy. Compensation strategies and emerging trend in expatriate compensation will also be learned. concept of incentive plans, pre-requisites for designing effective incentive schemes will be discussed in class.

Module-1: Compensation management: (10 Hours)

An Introduction: Compensation Management, Compensation and Non compensation Dimensions, 3-P Concept in Compensation Management, Compensation as Retention Strategy, and Compensation for Special Groups, Salary Progression, Methods of Payment, Limitations of Job Related Compensation, and Competency based Compensation (Broad pay bands and 360 degree feedback).

Module-2: Wage and Salary Administration: (10 Hours)

Concept, wage structure, wage fixation, wage and salary administration. Definition of Job Evaluation, Job evaluation process, Job evaluation methods.

Module-3: Compensation Strategy: (10 Hours)

New thinking for the New Millennium, Reward Excellence, Individualizing the Pay System, Organizational and External Factors Affecting Compensation Strategies, Compensation Strategies as an Integral Part of HRM, Expatriate Compensation and its Objectives, Elements of Expatriate's Compensation Package.

Module-4 Incentive Schemes: (10 Hours)

Concept, features, types of Incentive Schemes, Wage Incentive Plans, Pre-requisites of Effective Incentive Schemes, Merits and Demerits of Incentives, performance based pay system, Executives compensation plan and packages. Concept of Voluntary

Retirement Scheme (VRS) Approaches to Deal with Workforce Redundancy, Costs and Benefits to the Company, VRS for Public Sector Employees.

Learning Outcomes:

1. Apply the concepts of compensation management in order to smooth function of the organization and to analyze the role of reward in order to create a work environment.
2. Learn to apply the policies for determining of Wages and reward strategies and design a pay plan based on market conditions and competitors strategies.
3. Utilize the concept of Expatriate compensation, strategies, and design pay band based on emerging trends and mobilize the resources of an organization for optimum result.
4. Designing different types of Incentive plans for motivating employees work performance and create a competitive environment which can lead to develop the creativity and innovation in the organization.

Text Book:

- [1] Dessler(2009) Strategic Compensation Management, 2nd edition, Pearson.

Reference Books:

- [2] Singh(2012) Compensation and reward management, 2nd edition, Excel Books.
[3] Bhatia (2012) Compensation Management, Himalaya Publishing House
[4] Bhattacharya(2014) Compensation Management, 2nd edition, Oxford University Press.



Subject Code: 19MBH05	Subject Name Strategic Human Resource Management	L-T-P-3-1-0	Credit-4
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Course Objectives:

Students will understand the strategic nature of HR and its use at the policy making stage. Students will know how to control and manage their emotions and apply as and when required for organisational benefits. Recruitment and selection will be of strategic nature cutting the organisational resources.

Module-I. Introduction to Strategic Human Resource Management:

(10 Hours)

Nature of strategies and strategic management process; Environmental Scanning, Strategy formulation, implementation evaluation. Role of HRM in Strategic management.

Module-II. Planning, Training. (12 Hours)

Strategic Human resource planning, recruitment, selection, induction, training and development, Needs assessment, Methods of training and techniques, Management Development, Evaluating training effort. Managing organizational change and development, Strategic Performance Management and appraisal, Steps in appraising performance, & types of appraisal.

Module - III International SHRM. (10 Hours)

Perspective of SHRM, Managing international HR activities: implementation of global HR System, Staffing the global organisation, improving productivity through HRIS, Major issues and challenges of SHRM: outsourcing HR activities, balancing work and life, Managing cross cultural diversity, changing demographics of work force and changed employee expectations-loss of joy and pleasure.

Module- IV Emotional Intelligence (8 Hours)

Emotional intelligence, the five domains of E.I. as identified by Golman, the ability model, the & trait model of Emotional Self-awareness, increasing self awareness, & tools for Self-assessment Transaction Analysis.

Learning Outcomes:

1. Strategic nature of HR operation can be easily distinguished.
2. To know the mechanism to control emotion of people and align them to organizational goals and objectives.
3. To know the strategic stage of planning and its role to organisational vision.

Text Book:

[1] Sharma(2019),Strategic Human Resource Development ,1st edition, Pearson Publications.

Reference Books:

- [2] Ashwathaappa(1999) HR and Personnel Management-, Mc.Graw Hill Publication
- [3] Sheetharam & Prasad(2015) Human Resources Management, Scitech
- [4] Desseler (2017) Human Resources Management, PHI Publication.



PRODUCTION & OPERATIONS

Subject Code: 19MBP01	Subject SUPPLY CHAIN AND LOGISTICS MANAGEMENT	L-T-P-3-1-0	Credit-4
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Course Objective:

Students will be acquainted with supply chain and logistics management aspects. The relationship between the manufacturing process and supply chain and logistics will be explored.

Module I : Supply Chain Foundations: (10 Hours)

Fundamentals of Supply Chain and Importance, concepts and Definitions Strategic Supply Chain, Management and Key components. Drivers of Supply Chain Performance, Supply Chain as a network of entities: Role and interactions between the entities. Value Chain Focus of Supply Chain. Centralized and Decentralized Supply Chains: their coordination and aligning business activities.

Module II : Customer Orientation: (10 Hours)

Customer Satisfaction oriented Supply Chain Management strategy, Customer segmentation, Customer requirements analysis, Aligning supply chain to customer needs: Quick response logistics, Vendor Managed Inventory, Cross docking, Packaging Innovations, Third Party Logistic and Service concepts and applications.

Module III : Manufacturing Logistics Management: (10 Hours)

Lean and Agile Manufacturing, Virtual Manufacturing, Just in Time Manufacturing, Lead time Components and their Compression, Lot Streaming. Third party and fourth party logistics - Reverse Logistics - Global Logistics. Source Identification: Global vs. Domestic Sourcing, Landed Cost Computation, Contract Negotiation, Consolidation, Vendor Development and Vendor Relationship Management, Vendor Performance Monitoring, Vendor Rating.

Module IV: Distribution Management: (10 Hours)

Distribution Channels: Structure and Operation, Distribution Cost Components, Pipe line Inventory and Response Considerations, Hub and Spoke Models, Cross docking, Carrier Selection, Vendor Consolidation, Vehicle Loading and Vehicle Routing Methods.

Learning Outcomes:

1. Students will learn about fundamentals of supply chain and significance on value chain.
2. Students will learn about customer relation between different entities of supply chain and orientation towards customers.
3. Students will explore the basics of manufacturing and distribution logistics.

Text Book:

- [1] Coyle et.al (2013) Managing Supply Chains-A Logistic Approach, 9th Edition, Cengage Learning.

Reference Books:

- [2] Sahay B S(2012) Supply Chain Management for Global Competitiveness, Macmillan India Ltd., New Delhi.
- [3] Reguram G, Rangaraj N, (1999) Logistics and Supply Chain Management Cases and Concepts, Macmillan India Ltd., New Delhi,
- [4] Bowersox (2000) Logistical Management, Mc-Graw Hill.



Subject Code: 19MBP02	Subject Name: PROJECT MANAGEMENT	L-T-P-3-1-0	Credit-4
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Course Objective:

Students will be acquainted with the overview of business related project management and develop analytical skill to apply project management theories and practices to the management of real life projects

Module – I: (8 Hours)

Modern project management: Meaning, Nature and importance of project, Project life cycle, Determinants of project's success, Project Management- Defining Project Management, Project Manager- Project managements Skills& Leadership traits, Project management process: Project selection, project planning, project implementation, project completion & audit. Environment Clearance and related legislations. Land Acquisition and R&R policies.

Module –II: (10 Hours)

Project selection process: Project identification, Attributes of a Project, SWOT analysis, Project selection based on financial and non-financial criteria, NPV, IRR, Payback period. Project selection with multiple criteria, Checklist models

Project Appraisal: Market feasibility, Demand forecasting, Technical feasibility, Commercial and financial feasibility, Estimating project times and costs, Environment Analysis.

Module –III: (12 Hours)

Project Planning: Elements of Project Plan, Project management structure, Work breakdown structure, Work package, Process breakdown structure, Project Organization Structure, Planning and analysis of Project Risks,

Project Implementation: Estimating Project Budgets, Process of cost estimation, Scheduling: Gantt Charts – Constructing Gantt charts, Network Techniques (PERT / CPM), Crashing and Resource allocation, Risk analysis

Module –IV: (10 Hours)

Project Monitoring: Design of monitoring system; Computerized PMIS (Project Management Information System), Earned value analysis, Project Control: Scope/Progress control, Performance control, Schedule control, Cost control, Project Audit, Construction and use of audit report, Project audit life cycle.

Project Termination – Types of termination, The Closeout process: Handing over, gaining acceptance, harvest benefit, Review, record and disbanding team, Hindrance to effective close out. Emotional issues, Claims disputes and protections available to organizations.

Learning Outcomes:

1. To know the basics of Project Management
2. To know about different aspects of project feasibility
3. To understand the stages of project management and their challenges.

Text Book:

- [1] Chandra (2008) Project Planning, Analysis, Selection, Financing, Tata McGraw Hill

Reference Books:

- [2] Gray(2009) Project Management, 4th edition, Tata McGraw Hill
[3] Richman (2008) Project Management, 4th edition Prentice Hall of India.
[4] Desai (2016) Project Management, Himalaya Publishing House
[5] Patel(2010) Project Management, 2nd edition, Vikash Publishing House



Subject Code: 19MBP03	Subject Name: QUALITY TOOLKIT FOR MANAGERS	L-T-P-3-1-0	Credit-4
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Course Objective:

Students will be acquainted with various aspects of quality management and learn statistical quality control as tools for decision making in their corporate life.

Module I: Introduction to Quality Management, its Philosophies and TQM (10 Hours)

Defining Quality, Quality as a Management Framework, Quality and Competitive Advantage, Three Levels of Quality, The Deming, Juran Philosophy and Crosby Philosophy, Ishikawa, Taguchi techniques – introduction, loss function, parameter and tolerance design, signal to noise ratio, TQM framework, benefits, awareness and obstacles. Concepts of Quality circle..

Module II Principles and Design for Six Sigma (10 Hours)

Kaizen, Total Productive Maintenance (TPM), Meaning, Seven Magnificent Quality Tools, Application, Poke Yoke, Process capability – meaning, significance and measurement – Six sigma concepts of process capability. Six Sigma Problem Solving, Six Sigma in Services and Small Organizations. Reliability concepts – definitions, reliability in series and parallel.

Module – III Statistical Process Control (10 Hours)

Meaning and significance of statistical process control (SPC) Specification & Limits, construction of control charts for variables and attribute, Process Control (X, R & P chart), Summary of Control Chart Construction, Business process re-engineering (BPR) – principles, applications, reengineering process, benefits and limitations.

Module- IV: Quality Systems (10 Hours)

Quality functions development (QFD) – Benefits, Voice of customer, information organization, House of quality (HOQ), building a HOQ, QFD process. Failure mode effect analysis (FMEA) – requirements of reliability, failure rate, FMEA stages, design, process and documentation. ISO Systems, ISO Certification Schemes, Preparing an Organization for ISO Certification.



Learning Outcomes:

1. Students will learn about quality management philosophies, benefits.
2. Application of six sigma in industry.
3. To know various quality systems and their applications.

Text Book:

- [1]** Raju(2014), Total Quality Management, , 1st edition , Cengage Learning

Reference Books:

- [2] Shridhara Bhat K(2002), Total Quality Management Text and Cases, 1st Edition Himalaya Publishing House.
- [3] Dale H. Besterfield et al(2004) ,Total Quality Management, 3rd edition,Pearson Education.



Subject Code: 19MBP04	Subject Name: SUPPLY CHAIN ANALYTICS	L-T-P-3-1-0	Credit-4
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Course Objectives:

Students will understand the role of analytics in supply chain and learn about different analytical approaches.

Module I: Understanding and defining the supply chain analytics. (10 Hours)

Role of analytics in Supply Chain. Different types of analytical approaches and how these approaches can help in supply chain, , Revisions of Basic Lessons of Supply Chain Management, Relating Operations Management with Supply chain concepts with SC Analytics, The importance of supply chain analytics in the flows involving material, money, Information and ownership.

Module II: Key issues in supply chain analytics (8 Hours)

Concept of Descriptive Analytics in a Supply Chain, Supply Chains Analytics applications in India. Decision Domains in supply chain analytics, Supply Chain (SC) Decisions that requires mathematical or interpretative modeling.

Module III: Foundation of Business Analytics (12 Hours)

Understanding of Data and its role in Analytics of a Transportation problem in a Supply Chain Managerial implication of results of analytics. Introduction to Modeling, Approaches for Optimization and Simulation, Predictive modeling for forecasting in the supply chain. Network designing in an uncertain environment. A Case study of Supply Chain Analytics.

Module IV: Foundation of Prescriptive Analytics in Network Planning in a Supply Chain Network (10 Hours)

Network planning in a Supply Chain, Importance of Network Planning, Concept of 3PL/4PL in a Supply Chain, Foundation of Modeling Coordination decisions in Supply Chain Management, Foundation of Performance Management in Supply Chain Management. Role of ICT in Supply chains.

Learning Outcomes:

1. To learn the relation between operation and supply chain management
2. To know about the key issues in supply chain analytics.
3. To learn how to develop analytical models in supply chain.

Text Book:

- [1] Muthu et.al(2016) Analytics in Operations/Supply Chain Management, I K International Publishing House Pvt. Ltd, New Delhi

Reference Books:

- [2] Blokdyk (2017)Supply Chain Analytics: Beginner's Guide,2nd Edition , Create Space Independent Publishing Platform;
- [3] Levi et.al(2008), Designing and Managing the Supply Chain concepts, Strategies and Case studies, 3rd Edition, Tata McGraw Hill, New Delhi
- [4] Gerald Feigin (2011) Supply Chain Planning and Analytics: The Right Product in the Right Place at the Right Time, Business Expert Press.



Subject Code: 19MBP05	Subject MANAGEMENT OF MANUFACTURING SYSTEMS	Name:	L-T-P-3-1-0	Credit-4
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Course Objective:

Students will be trained to understand various manufacturing systems and its implications. They will also learn about synchronous and flexible manufacturing system

Module I: Introduction to Manufacturing Systems (10 Hours)

Introduction: Different types of manufacturing systems, Introduction to cellular manufacturing, unidirectional flow, capacity planning, layout, cellular manufacturing application, production flow analysis, Rank Order Clustering. , Introduction. Similarity coefficient based methods.

Module II: Cell formation algorithms (8 Hours)

Optimization based algorithm, Assignment based algorithm, Assignment model, Algorithm considering sequence of visit of machines, Reducing intercell moves, Part subcontracting, Incremental cell formation.

Module III: Scheduling and Sequencing (12 hours)

Product based cell formation. Operator Allocation, Rabbit chasing, Static and dynamic operator allocation, Multiple products and incremental cells, Cell scheduling and sequencing, Single piece transportation, Cell layout, Just In Time Manufacturing: Concepts and definitions. Implementation issues, Models in JIT, Kanban, CONWIP and Kanban.

Module IV: Synchronous manufacturing and Flexible Manufacturing Systems (10 Hours)

Synchronous manufacturing. The Goal, Principles of Synchronous manufacturing. Scheduling in Synchronous manufacturing, Drum buffer rope system, Flexible Manufacturing Systems, Part selection problem, FMS loading problems, FMS scheduling problems.

Learning Outcomes:

1. To understand various types of manufacturing systems
2. To know how to form cell formation algorithms.
3. To understand the value and rules of sequencing and scheduling processes.

Text Book:

[1] Askin R G & Strandridge (1993) C R, Modelling and Analysis of Manufacturing, Vikas publishing.

Reference Books:

[2] Askin R G and Goldberg (2002), Design and Analysis of Lean Production Systems, 2nd edition, John Wiley and sons.