



ST. JOSEPH'S INSTITUTE OF MANAGEMENT (JIM)  
*A Jesuit Business School*

# MASTER OF BUSINESS ADMINISTRATION

Syllabus: 2022 – 2024

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# Course Structure for the Two-Year MBA Programme @ JIM -Batch of 2022-2024

With significant changes happening in industry due to a variety of factors ranging from covid to digitization of business to geopolitics, JIM knew its responsibility of reconstructing its syllabus. The objective was to reframe the syllabus keeping in mind with the employment opportunities on one hand and the holistic development of our students on the other.

An academic advisory committee was put in place for the first time in JIM to study our past syllabi, the teaching-learning process, the key takeaways for the students and how it engineered for placements and entrepreneurial vocation. Simultaneously, our faculty and two external experts (Board of Studies) worked as a team for the past two months, examined the syllabi/contents, teaching - learning process and how it led to holistic growth of the students on all parameters.

Based on a through discussion of the two – Academic Advisory Committee and Board of Studies, we have evolved the following course structure which is found below.

## **Core courses**

1. All core courses in the first year and second year carrying 3 credits are mandatory including Shepherd, Business Communication (Workshop) and Outbound training. Grade Certificates will be given for the non-credit courses based on the merit of the students. Grades will be highly satisfactory, satisfactory and not satisfactory. Students who are found not satisfactory in any non-credit course will have to repeat the non-credit course in the following semester.

## **Specialization courses**

1. The students will have to specialize in two (dual) functional areas of their choice, in the second year.
2. Students will take 3 courses of 3 credits and 1 course of 1.5 credits from the two functional (specialization) areas. Thus, in the third semester and fourth semester, a student will have to earn 21 credits in each semester totaling 42 credits in the specialization area.



## COURSE STRUCTURE FOR TWO - YEAR MBA PROGRAMME

2022 – 2024

	<b>Title</b>	<b>Credits</b>
<b>I Semester</b>	Personal Growth Lab (To be offered before the start the Programme)	
	22PBA1101 Business, Government & Society	3
	22PBA1102 Managerial Economics	3
	22PBA1103 Financial Statement Analysis	3
	22PBA1104 Organizational Behaviour	3
	22PBA1105 Quantitative Techniques	3
	22PBA1106 Business Communication	3
	22PBA1107 Spreadsheet for Managers	3
	22PBA1108 Introduction to Business Analytics	3
	Shepherd	
	<b>Total</b>	<b>24</b>
<b>II Semester</b>	22PBA2109 Financial Management	3
	22PBA2110 Marketing Management	3
	22PBA2111 Human Resource Management	3
	22PBA2112 Management Information Systems	3
	22PBA2113 Operations and Decision Making	3
	22PBA2114 Business Statistics	3
	22PBA2115 Innovation and Entrepreneurship	3
	22PBA2116 Corporate Ethics and Legal Aspects of Business	3
	Business Communication (Workshop)	
	Out Bound Training (3 Days)	
	<b>Total</b>	<b>24</b>
<b>III Semester</b>	22PBA3117 Global Strategy	3
	22PBA3118 Business Research	3
	22PBA3119 Summer Internship Placement (8 Weeks)	5
	Electives	21
	<b>Total</b>	<b>32</b>
<b>IV Semester</b>	22PBA4120 Project & Dissertation (3 Weeks)	5
	22PBA4121 Comprehensive Examination	2
	Electives	21
	<b>Total</b>	<b>28</b>

## Finance

		Title	Credits
III Semester	22PBA3101	Security Analysis	3
	22PBA3102	Derivatives Management – I	3
	22PBA3103	Banking & Financial Services	3
	22PBA3104	Accounting Analytics	3
	22PBA3105	Financial Modelling using Spreadsheet - I	1.5
	22PBA3106	Mutual Funds	1.5
IV Semester	22PBA4101	Portfolio Management	3
	22PBA4102	Derivatives Management – II	3
	22PBA4103	Financial Modelling using Spreadsheet - II	3
	22PBA4104	Business Valuation	3
	22PBA4105	Personal Finance	1.5
	22PBA4106	Enterprise Risk Management	1.5

## Marketing

		Title	Credits
III Semester	22PBA3201	Product and Brand Management	3
	22PBA3202	Services Marketing	3
	22PBA3203	Digital Marketing	3
	22PBA3204	Business to Business Marketing	3
	22PBA3205	Marketing of Financial Products & Services	1.5
	22PBA3206	Influencer Marketing	1.5
IV Semester	22PBA4201	Sales and Distribution Management	3
	22PBA4202	Retail Management	3
	22PBA4203	Marketing Analytics	3
	22PBA4204	International Marketing	3
	22PBA4205	Rural Marketing	1.5
	22PBA4206	Direct to Consumer Marketing	1.5

## HR

		Title	Credits
III Semester	22PBA3301	Talent Acquisition	3
	22PBA3302	Learning and Development	3
	22PBA3303	Labour Codes I	3
	22PBA3304	Learning Organizations	3
	22PBA3305	People Analytics	1.5
	22PBA3306	Team Management	1.5
IV Semester	22PBA4301	Performance & Compensation Management	3
	22PBA4302	Organizational Change & Development	3
	22PBA4303	Labour Codes II	3
	22PBA4304	Cross Cultural Management	3
	22PBA4305	Negotiation Management	1.5
	22PBA4306	Talent Management	1.5

## IT & Analytics

		Title	Credits
III Semester	22PBA3401	Machine Learning using Python	3
	22PBA3402	Data Mining and Data Warehousing	3
	22PBA3403	Big Data Analytics	3
	22PBA3404	Software Engineering	3
	22PBA3405	Structured Query Language (SQL)	1.5
	22PBA3406	Digital Commerce	1.5
IV Semester	22PBA4401	Deep Learning & Artificial Intelligence	3
	22PBA4402	Digital Analytics	3
	22PBA4403	Block Chain and Business Applications	3
	22PBA4404	Cyber Security	3
	22PBA4405	Data Visualization	1.5
	22PBA4406	Emerging Technologies	1.5

## Supply Chain Management

		Title	Credits
III Semester	22PBA3501	Principles of Supply Chain Management	3
	22PBA3502	Supply Chain Data Management Analysis	3
	22PBA3503	Statistical Quality Control	3
	22PBA3504	Advanced Mathematical Techniques for Supply Chain Management	3
	22PBA3505	Lean Six Sigma	1.5
	22PBA3506	Digital Supply Chain Management	1.5
IV Semester	22PBA4501	Global Supply Chain Management	3
	22PBA4502	Service Process Management	3
	22PBA4503	Project Management	3
	22PBA4504	Python Programming	3
	22PBA4505	Tora Package	1.5
	22PBA4506	Introduction to Data Envelopment Analysis	1.5

## Credit Distribution

S.NO.	Semester	Core	Electives	Total
1	I	24	-	24
2	II	24	-	24
3	III	6 + 5 (SIP)	21	32
4	IV	5 (Project)+ 2 (Comprehensive Viva)	21	28
TOTAL		66	42	108

# CORE COURSES

Semester I



## **Core Course**

**Course Code: 22PBA1101 | Title: Business, Government and Society | Credits: 3**

### **I. Course Description**

The course aims to have an in-depth understanding of how business, government and society relate with each other. It also helps the students to understand various business formats and its suitability in various business sectors. The students will also appreciate the governments - central and state influence in business and its effect on the society.

### **II. Course Outcomes**

At the end of the course students will be able to

1. Understand evolution of business to its current transition and the influence of the government in business and industry through programmes and policies.
2. Understand the complex relationship between business, government and society.
3. Analyze the changing scenarios in the external business environment.
4. Compare the various forms of business organizations and decide on the formats and also understand business power in totality.

### **III. Course Content**

#### **1. Business Evolution in India and Governments**

- a. Study of business evolution in India- sectoral preference/ preferences based on geography, religion etc.
- b. Governments' role in assisting growth of Indian business.
- c. Study of sectoral models in major domains such as textiles, consumer goods and IT etc.

#### **2. External Environment of Business**

- a. Political
- b. Economical
- c. Social
- d. Technological
- e. Legal
- f. Environment

#### **3. Forms of Business Organization**

- a. Sole Proprietorship, Partnership, LLP, Joint Stock Companies – Public and Private.
- b. Government regulations relating to business formats.
- c. Regulating businesses and its effect on society.

#### **4. Corporates and the Natural Environment**

- a. Industrial pollution and environmental regulations.
- b. Managing environmental quality.
- c. Legal framework and ESG.

#### **5. Business Power**

- a. Nature of Business power and Levels
- b. Spheres of Corporate power
- c. Perspectives of Business power- national and global.
- d. Corporate Governance.

#### **IV. Course Materials**

##### **a. Mandatory**

Steiner, J.F., & Steiner, G.A. (2012). *Business, Government and Society: A managerial perspective - Text and cases*. (13th ed.). The Mc Graw Hill Companies.

##### **b. Additional**

Materials to be given by course coordinator.



## Core Course

**Course Code: 22PBA1102 | Title: Managerial Economics | Credits: 3**

### I. Course Description

The course combines macro and micro economics and its application in business. Under macroeconomics, the students will learn concepts relating to a country's income, growth, employment, prices and a broad framework of how fiscal and monetary policies are developed. The course introduces the students to firm level economics such as demand, supply, cost and production and integrates macroeconomics influences in market structures.

### II. Course Outcomes

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

1. Acquire knowledge on national income estimates along with key macro-economic variables such as inflation, employment etc. It includes the design and development of monetary and fiscal policies and understand how it aids in the economic growth of the country.
2. Understand the nature of Managerial Economics and its linkage with other domains.
3. Understand and apply knowledge of demand and supply concepts in an organization/s.
4. Understand and apply knowledge of the basic concepts in production and cost function.
5. Gain knowledge about the market structure and apply them in business.

### III. Course Content

#### a. Introduction to Macroeconomics - Concepts and Theory

- a. Introduction to Macro Economics
- b. Concept and Measurement of National Income
- c. Business Cycle
- d. Fiscal and Monetary Policies
- e. Role of Market and Government

#### b. Theories of firms

- a. Theories of Profit Maximization
- b. Managerial theories of firm
- c. Behavioral theories of firm

#### c. Concept of Demand & Supply

- a. Law of Demand & Supply
- b. Elasticity of Demand & Supply
- c. Market Equilibrium

#### d. Production Theories and Cost Concepts

- a. Types of inputs and factors of production
- b. Production with one variable input and two variable inputs
- c. ISO cost lines
- d. Returns to Scale
- e. Cost in short-run and long run

**e. Market Structure**

- a. Perfect Competition
- b. Imperfect Competition
- c. Monopoly
- d. Monopolistic Competition
- e. Oligopoly

**IV. Course Materials**

**a. Mandatory**

Geetika, P. G. (2013). *Managerial Economics*. Tata McGraw Hill Education.

**b. Additional**

Salvatore, D. (2011). *Managerial Economics*. Oxford University Press.

Jhingan, M. L. (2014). *Managerial Economics*. Vrinda Publications.

Varshney, R. L., & Maheshwari, K. L. (1972). *Managerial Economics*. Chand.



## Core Course

**Course Code: 22PBA1103 | Title: Financial Statement Analysis | Credits: 3**

### I. Course Description

The objective of this course is to familiarize the students with the accounting process carried out in an organization. This course will give the students an understanding of the concepts in financial accounting and components of financial statements. The course will develop the skills in analyzing and interpreting the income statements, balance sheets and cash flow statements of the organizations.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the key concepts of financial accounting and preparation of financial statements.
2. Demonstrate understanding of concepts relevant to financial statement analysis.
3. Demonstrate ability to analyze, diagnose and interpret financial health of companies.
4. Evaluate, report and present effectively financial results of companies.

### III. Course Content

#### 1. Introduction to Accounting

- a. The accounting information system
- b. Accounting transactions and the accounting equation
- c. Double Entry accounting system
- d. Recording transactions in the accounting system
- e. Generally Accepted Accounting Principles

#### 2. Corporate Financial Statements

- a. Business Forms
- b. Journal entries to financial statements
- c. Multi – step income statement
- d. Classification of Balance sheet
- e. Information beyond the financial statements
  - i) Notes to financial statements
  - ii) Auditors report
  - iii) Management's Discussion and analysis

### **3. Internal Controls**

- a. Cash Controls
  - Need of Bank reconciliations
  - Petty cash funds
- b. Accounts Receivables
  - Uncollectible – Direct write off and provision method
  - Estimating Bad debt – Percentage of sales & receivables approaches
- c. Inventory Costing Methods
  - FIFO, LIFO and Weighted average method
- d. Depreciation Methods
  - Straight Line Method
  - Reducing Balance Method

### **4. Analysis of Financial Statements**

- a. Horizontal and Vertical Analysis
- b. Profitability Analysis
- c. Liquidity Analysis
- d. Solvency Analysis
- e. Dupont Analysis

### **5. Statement of Cash Flows**

- a. Statement of cash flows indirect method
- b. Reporting cash flows from operating, investing and financing activities
- c. Analyzing a company's statement of cash flows
  - i) Free cash flow
  - ii) Cash flow adequacy ratio

## **IV. Course Materials**

### **a. Mandatory**

Godwin, N., Alderman, W., & Sanyal, D. (2016). *Financial ACCT: A South-Asian perspective*. (2nd ed.). Cengage.

### **b. Additional**

Narayanaswamy, R. (2017). *Financial Accounting: A managerial perspective*. (6th ed.). PHI Learning.



## **Core Course**

**Course Code: 22PBA1104 | Title : Organizational Behaviour | Credits: 3**

### **I. Course Description**

This course provides fundamental theories and concepts of individual behavior (intrapersonal), group behavior(interpersonal) and organizational systems. Group behavior facilitates experiential learning of approaches to decision making, leadership, negotiation, power and politics. In organizational system the focus is on structure, culture, climate and change management to improve organizational effectiveness.

### **II. Course Outcomes**

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

1. Understand the differences between individual and group dynamics in an organization.
2. Illustrate the importance of job satisfaction and job involvement.
3. Understand the various factors that contribute to work motivation.
4. Emphasize the relevance of working in teams in modern day organizations'.
5. Analyze various leadership theories and identify them with the real world.

### **III. Course Content**

#### **1. Introduction to Organizational Behavior**

- a. Nature and Discipline of OB
- b. Managing Diversity in the workplace
- c. Challenges and Opportunities for OB

#### **2. Intrapersonal Dynamics**

- a. Attitudes at the Workplace
- b. Importance of Job satisfaction
- c. Emotions and moods
- d. Personality and Traits
- e. Perception
- f. Judgements and Decision making
- g. Motivation Theories

### **3. Interpersonal Dynamics**

- a. Foundations of Group behaviour
- b. Understanding work teams
- c. Leadership Theories
- d. Trust and Mentoring
- e. Power and Politics
- f. Conflict and Negotiation Management

### **4. The Organisation as a System**

- a. Organization Culture
- b. Creating and sustaining culture
- c. Organizational Change
- d. Creating a culture for Change

## **IV. Course Materials**

### **a. Mandatory**

Robbins, S. P. (2018). *Organizational behaviour*. (18th ed.). Pearson.

Luthans, F. (2011). *Organizational Behaviour-An evidence-based approach*. (12th ed.). McGraw-Hill.

### **b. Additional**

Quick, J. C., Nelson, D. L., & Khandelwal, P. (2014). *Organizational behaviour* (7th ed.). Cengage Learning.



## Core Course

Course Code : 22PBA1105 | Title: Quantitative Techniques | Credit: 3

### I. Course Description

This curriculum Quantitative Technique is designed to catch the needs of young budding business students to know the importance of mathematical concepts and modeling with respect to the implication of managerial decision making.

### II. Course Outcomes

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

1. Identify the art of using the concept of matrix idea in decision-making.
2. Use the application of calculus in decision-making.
3. Apply the art of mathematical modeling in decision-making.
4. Analyse the use of modeling in transportation.
5. Extend the use of assignment modeling in decision-making.

### III. Course Content

#### 1. Matrix Application to Business

- a. Basics of Matrix
- b. Concept of Linear System of Equations
- c. Formulation of Business Problems
- d. Solving using TORA

#### 2. Functions and their Applications to Business

- a. Introduction
- b. Functions related to Management
- c. Optimizing Functions using differential calculus

#### 3. Introduction to Operations Research

- a. Mathematical Formulation of LPP
- b. TORA Application

#### 4. Transportation & Assignment Problem

- a. Introduction to Transportation model
- b. Decision making using Transportation model

- c. Introduction to Assignment model
- d. Decision making using Assignment model

#### **IV. Course Materials**

##### **a. Mandatory**

Mariappan, P. (2015). *Business Mathematics*. (1st ed.). Pearson India Education Services Pvt.Ltd.

Mariappan, P. (2013). *Operations Research – An Introduction*, (1st ed.). Darling Kindersley (India) Pvt.Ltd.

##### **b. Additional**

Mariappan, P. (2004). *Mathematics for modern management*. (1st ed.). New Century Book House.



## **Core Course**

**Course Code: 22PBA1106 | Title: Business Communication | Credits: 3**

### **I. Course Description**

This course will enable the learner to enhance the art of listening, speaking and writing during participation in academic and business contexts. It introduces students to the strategies employed to analyze their audience effectively to communicate within and outside the organization. The students will also be exposed to typical business communication situations to prepare effective responses for business messages and reports. Over all this course enables the students to prepare for interviews and improve their level of comprehension in the workplace.

### **II. Course Outcomes**

By the end of the course the students would be able to:

1. Comprehend the content effectively while listening.
2. Express thoughts accurately in conversations and discussions.
3. Deliver well-supported presentations.
4. Draft business messages and emails.
5. Develop the skills required to succeed in an interview.

### **III. Course Content**

#### **1. Organizational Listening**

- a. Intensive & Extensive Listening
- b. Inferencing & Emotional Listening
- c. Listening Barriers
- d. Employee Listening

#### **2. Business Writing**

- a. Summarizing and Paraphrasing
- b. Academic Writing
- c. Business Messages, Emails & Letters
- d. Memos, notices, agenda and minutes, Business reports

#### **3. Speaking**

- a. Non-Verbal Communication
- b. Persuasive Speeches
- c. Product Pitch/Sales Talk
- d. Presentations

#### **4. Business Etiquette**

- a. Conversations
- b. Telephone Etiquette
- c. Cross Cultural Communication
- d. Netiquettes

#### **5. Communication for Interview**

- a. Resume, Application & Covering Letter
- b. Self-Introduction
- c. Group Discussion
- d. Interview strategies

### **IV. Course Materials**

#### **a. Mandatory**

Chaturvedi, P. D. (2020). *Business communication - Skills, concepts and applications*. Pearson India Education Services Pvt. Ltd.

#### **b. Additional**

Mukerjee, H, S. (2016). *Business communication - Connecting at work*. (2nd ed). Oxford University Press.

Singh, M. R. (2016). *Business Communication*. Oxford University Press.



## Core Course

**Course Code: 22PBA1107 | Title: Spread Sheet for Managers | Credits: 3**

### I. Course Description

This course equips the students with skills for the effective use of Spread sheet to help students to prepare data report, analyze data set, presenting it effectively through MS Excel.

### II. Course Outcomes

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

1. Understand the importance of MS Excel and its application in business.
2. Learn and use the basics operations of MS Excel
3. Apply different Excel functions in business.
4. Learn and apply data tools to solve business problems.
5. Analyze data using analytical techniques to arrive at business decision using MS Excel

### III. Course Content

#### 1. Work sheet Manipulation

- a. Home
- b. Insert
- c. Page Layout
- d. Categories of functions
- e. Formulas
- f. Formatting

#### 2. Functions in Excel

- a. Financial
- b. Logical
- c. Data and Time

#### 3. Functions in Excel

- a. Lookup and Reference
- b. Mathematical
- c. Statistical
- d. Financial

#### **4. Data Tools using Excel**

- a. Sparklines
- b. Get Data
- c. Data Validation
- d. Text to Columns
- e. Remove Duplicates
- f. Consolidate

#### **5. Data Analysis using Excel**

- a. Sort and Filtering
- b. Conditional Formatting
- c. Pivot Tables
- d. What if and Scenario analysis
- e. Group and ungroup

### **IV. Course Materials**

#### **a. Mandatory**

Walkenbach, J. (2015). *Microsoft excel 2016 Bible*. Wiley Publishing.

#### **b. Additional**

Peter, W. (2013). *Office 2013: All-in-one for dummies*. Wiley Publishing.



## Core Course

**Course Code: 22PBA1108 | Title : Introduction to Business Analytics | Credits: 3**

### I. Course Description

The course aims to prepare students to provide adequate knowledge of Business Analytics that can be used for problem solving and decision making in business. This course introduces the students to basics of Python programming and data visualization; thereby enhancing their programming and analytical skills.

### II. Course Outcomes

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

1. Understand types of analytics and its uses.
2. Learn the concepts of KPI and its importance in business environment.
3. Learn and apply the basics programming skills of Python Program.
4. Examine the different python Libraries and its usage for data analysis.
5. Learn and apply the techniques of data visualization using Tableau.

### III. Course Content

#### 1. Business Analytics

- a. Data Driven Strategies
- b. Business Intelligence
- c. Types of Analytics
- d. Different models in Analytics
- e. Building an Analytics Capability Model

#### 2. KPI in BA

- a. Internal and external process of BA
- b. Key Performance Indicators
- c. Developing KPI
- d. KPI for different Sectors
- e. Data Hackathon

#### 3. Python - I

- a. Basics, Variables, Operators, Data types, Lists
- b. Tuples, Dictionary
- c. Control Statements
- d. If, if else, Switch, Looping
- e. Directory

#### **4. Python - II**

- a. Functions, Modules, Files, Exception
- b. Python Libraries
- c. Programs using Python Libraries
- d. Pre-processing data
- f. Exploratory Data Analysis

#### **5. Data Visualization**

- a. Tableau Menu
- b. Data Sources
- c. Extract data
- d. Data join and blending
- e. Worksheets with tableau
- f. Sorting, filtering and Charts

### **IV. Course Materials**

#### **a. Mandatory**

Hardoon, D.R., & Galit, S. (2013). *Getting started with Business analytics*. CRC Press.  
Rao, N. (2018). *Core Python programming* (2nd ed.). DreamTech Press.

#### **b. Additional**

Davenport, H. T., Harris, G. J., & Morison, R. (2010). *Analytics at work: Smarter decisions, better results*. CRC Press.  
Kumar, D. U. (2017). *Business analytics – The science of data driven decision making*. Wiley.  
Martin, B.C. (2018). *Python - The complete reference*. Tata McGraw Hill.

# CORE COURSES

Semester II



## **Core Courses**

**Course Code: 22PBA2109 | Title : Financial Management | Credits : 3**

### **I. Course Description**

The course is to familiarize students with the four major decision areas of finance, viz. investment, financing, earnings distribution and liquidity decisions. Subsequently, the students will be offered an integrated view of finance decisions through the process of valuation and risk management. The course aims at sharpening the financial decision-making skills of the participants.

### **II. Course Outcomes**

Upon successful completion of the course, the students will be able to:

1. Understand the finance functions.
2. Analyze the Working capital requirement.
3. Apply the cost of capital techniques for investment and financing.
4. Evaluate the investment proposals.

### **III. Course Content**

#### **1. Introduction to Financial Management**

- a. Goals of Financial Management
- b. Finance Function
- c. Financial Markets & Financial Instruments
- d. Time Value of Money

#### **2. Cost of Capital**

- a. Cost of Capital
- b. Factors influencing the cost of capital
- c. Specific cost of capital
- d. Weighted average cost of capital

#### **3. Investment Decisions**

- a. Nature and Types of Investment Decisions
- b. Investment Evaluation Criteria - Discounted cash flow methods & Non -discounted cash flow methods.

#### **4. Capital Structure**

- a. Optimal Capital Structure
- b. Capital Structure Theories
- c. EBIT - EPS approach
- d. Leverage

#### **5. Sources of short-term funds**

- a. Working Capital
- b. Estimating the Working Capital Requirement of a firm.
- c. Managing Cash
- d. Managing Receivables

#### **IV. Course Materials**

##### **a. Mandatory**

Khan M.Y. & Jain P.K. (2019). *Financial management - Text, problems and cases*. (8th ed.). McGraw Hill Education (India) Private Limited.

##### **b. Additional**

Brigham, E.F. & Ehrhardt, M.C. (2010). *Financial management*. (13th ed.). Cengage Learning.

Chandra, P.N. (2019). *Financial management - Theory and practice*. (10th ed.). McGraw Hill Education (India) Pvt. Ltd.

Pandey, I.M. (2015). *Financial management*. (11th ed.). Vikas Publishing House Pvt. Ltd.



## Core Course

**Course Code: 22PBA2110 | Title: Marketing Management | Credits: 3**

### I. Course Description

The course helps the students to understand the basic concepts in marketing. The course covers marketing approaches, marketing environment, Segmentation, Targeting and Positioning (STP), consumer behavior, product, pricing, place and promotion mix and emerging trends in marketing.

### II. Course Outcomes

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

1. Learn the basic concepts in marketing, marketing environment and STP.
2. Understand the basics of consumer behaviour.
3. Learn the components of the marketing mix.
4. Learn the emerging trends in marketing.

### III. Course Content

#### 1. Introduction to Marketing

- a. Core Marketing Concepts
- b. Approaches to Marketing
- c. Value Philosophy
- d. Marketing Environment
- e. Market Demand

#### 2. Consumer Markets and Buyer Behavior

- a. Characteristics affecting Consumer Behavior
- b. Psychological Processes
- c. Buying Decision Behavior and the Buying Decision Process
- d. Market Segmentation, Market Targeting, Differentiation and Positioning

#### 3. Creating Value: Product and Price Mix

- a. Product Levels
- b. Product Classifications
- c. The New Product Development Process
- d. Product Life-Cycle Strategies

e. Pricing Strategies

**4. Delivering and Communicating Value**

- a. Marketing Channels
- b. Levels of Distribution
- c. Advertisements
- d. Sales Promotions
- e. Public Relations
- f. Direct Marketing
- g. Personal Selling

**5. Emerging Trends in Marketing**

- a. Digital Marketing
- b. Word of Mouth Marketing
- c. Green Marketing
- d. Content Marketing
- e. Affiliate marketing
- f. Crowd Sourcing
- g. Direct to Consumers

**IV. Course Materials**

**a. Mandatory**

Kotler, P., Armstrong, G. & Agnihotri, P. (2018). *Principles of marketing*. (17th ed.). Pearson Education.

**b. Additional**

Ramaswamy, V.S. & Namakumari, S. (2018). *Marketing management: Indian context – Global perspective*. (6th ed.). SAGE Publications India Pvt. Ltd.

Kumar, A.N. & Meenakshi, N. (2016). *Marketing management* (3rd ed.). Vikas Publishing House.



## **Core Course**

**Course Code: 22PBA2111 | Title: Human Resource Management | Credits: 3**

### **I. Course Description**

This course focus on all aspects of managing people at work: planning, job analysis, recruitment and selection, training and development, performance management, remuneration and benefits, career development, and dealing with HR accounting & auditing. It examines the implications of emerging challenges for human resource management practices.

### **II. Course Outcomes**

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

1. Know the basic concepts and functions of human resource management.
2. Understand the importance of human resource planning and methods of job analysis.
3. Learn the process of recruitment, selection and placement.
4. Design various methods of training and development.
5. Explore various compensation and appraisal methods.

### **III. Course Content**

#### **1. Human Resource Management**

- a. HRM trends
- b. Functions of HRM
- c. HRM Models

#### **2. Human Resource Planning**

- a. Introduction to Human Resource Planning
- b. Job Analysis
- c. Job Description
- d. Job Specification
- e. Job Designing

#### **3. Recruitment & Selection Process**

- a. Sources and Steps in Recruitment
- b. Selection Methods
- c. Interviews Types
- d. Placement and Induction

#### **4. Training and Development**

- a. Training Need Analysis and Methods
- b. Process of training and development
- c. Career planning and development

#### **5. Performance & Reward Management**

- a. Performance Appraisal Process
- b. Assessment centers, MBO, 360-degree appraisal
- c. Review of Performance appraisal
- d. Compensation and Types
- e. HR Accounting & Audit

#### **IV. Course Materials**

##### **a. Mandatory**

Dessler, G. (2018). *Human resource management*. (15th ed.). Pearson.

##### **b. Additional**

Sharma R.C .,& Sharma, N. (2016). *Human resource management*. (1st ed.). Sage.

Durai, P. (2016). *Human resource management*. (2nd ed.). Pearson.



## **Core Course**

**Course Code: 22PBA2112 | Title: Management Information Systems | Credits: 3**

### **I. Course Description**

Management Information Systems is an applications-oriented course that provides an overview of the role of information systems in business. This course deals information systems in business, functional systems and software development life cycle. It also introduces current technologies used in the different fields of business.

### **II. Course Outcomes**

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

1. Understand the role of information systems in business.
2. Learn the essentials of information systems in functional business systems.
3. Examine the various decision support systems needed for a business to take better decisions for business.
4. Learn and Apply the methodology of software development process for developing business apps
5. Review the emerging technology in business.

### **III. Course Content**

#### **1. Information Systems in Business**

- a. Types of Information
- b. Data Resource Management
- c. Virtual Company
- d. Knowledge Creating Company
- e. E- Commerce and Payment Processes

#### **2. Functional Business Systems**

- a. Enterprise Business Systems
- b. Enterprise Collaboration Systems
- c. Marketing IS, HRIS and Online Accounting Systems
- d. CRM, ERP, SCM
- e. Executive Information Systems
- f. Expert Systems

### **3. System Development Process**

- a. SDLC
- b. Software Project Management
- c. App Design

### **4. Emerging Technologies in Business**

- a. Business Analytics, Machine and Deep Learning
- b. AI and Robotics
- c. Cloud and mobile Computing, IoTs
- d. Block chain and FinTech
- e. Cyber Security

## **IV. Course Materials**

### **a. Mandatory**

Behl, R., O'Brien, J.A., & Marakas, G.M., (2019). *Management information systems*. (11th ed.). McGraw Hill Education (India) Private Limited.

### **b. Additional**

Laudon, K., & Laudon, P.J. (2020). *Management information systems: Managing the digital firm*. (16th ed.). Prentice Hall of India Private Limited.



## Core Course

Course Code : 22PBA2113 | Title: Operations and Decision Making | Credits: 3

### I. Course Description

This course helps the students to learn the basic concepts of operations management and decision-making. Topics include types of production systems, quality control, product design, maintenance management, replacement policies, spare parts management, materials requirements planning (MRP), inventory management, logistics management, scheduling, sequencing, project management, and environmental considerations.

### II. Course Outcomes

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

1. Understand the basic concepts of production and operations management.
2. Learn and apply techniques to measure quality control.
3. Understand the importance of maintenance management and materials requirement planning.
4. Learn the importance of inventory management and logistics management.
5. Develop the skills of applying operations research models in scheduling and project management.

### III. Course Content

#### 1. Introduction to Operations Management

- a. Introduction
- b. Production of goods versus providing services
- c. Process Management
- d. Operation Strategy

#### 2. Product and a Service design

- a. Introduction
- b. Idea generation
- c. Legal and ethical consideration
- d. global product and service design
- e. Designing for production
- f. Service design

- 3. Strategic capacity planning for production and services**
  - a. Capacity Design
  - b. Determinants of effective capacity
  - c. Forecasting capacity requirements
  - d. Constraint management
  - e. Evaluating alternatives
  
- 4. Analysis of Processing, facility layout, job design, planning, and quality**
  - a. Process selection
  - b. Resource organization
  - c. Product layout
  - d. Job Design
  - e. Need for location decisions
  - f. Statistical Process Control
  
- 5. Decision Sciences**
  - a. Scheduling Model
  - b. Sequencing Model
  - c. Inventory Control
  - d. PERT and CPM

#### **IV. Course Materials**

##### **a. Mandatory**

Stevenson, W. (2015). *Operations management*. (12th ed.). McGraw Hill Education.

Mariappan, P. (2002). *Operations research: Methods and applications*. New Century Publications.

##### **b. Additional**

Chary, S.N. (2019). *Production and operations management*. (6th ed.). McGraw Hill Education (India) Private Limited.



## **Core Course**

**Course Code: 22PBA2114 | Title: Business Statistics | Credits: 3**

### **I. Course Description**

This course aims to impart the students with knowledge of statistical tools and its application in business. Enhancing decision making skills using a statistical approach is the focus of this course. Students learn various tools and its application to make proper managerial decisions. The course aids the students to do decision-making during uncertain times.

### **II. Course Outcomes**

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

1. Understand the need of Business Statistics for managerial decision making.
2. Know the impact of covariance in Business Decision Making.
3. Emphasize Bivariate Analysis and its business decision making.
4. Understand the need for probability and its distribution in business.

### **III. Course Content**

#### **1. Introduction to Statistics and its Business Application**

- a. Introduction
- b. Methods for decision-making process
- c. The statistical implication in the decision-making process

#### **2. Analyzing Data**

- a. Data Structures – Collection – Presentation
- b. Evaluation of Mean – Standard Deviation
- c. Evaluation of Coefficient of Variation
- d. Time series and Index numbers
- e. Application to Business Decision Making

#### **3. Correlation and Regression Analysis**

- a. Concept of Correlation
- b. Application of correlation ideas in business
- c. Concept of Regression
- d. Application of Regression in Business

**4. Probability with Business Application**

- a. Concept of Probability
- b. Application of Probability in Business

**5. Random Variable – Probability Distributions**

- a. Random Variable
- b. Binomial Distribution
- c. Poisson Distribution
- d. Normal Distribution
- e. Managerial Application

**IV. Course Materials**

**a. Mandatory**

Mariappan, P. (2019). *Statistics for business*. (1st ed.). Taylor & Francis Group.

**b. Additional**

Levin, R.L., Rubin, D.S., Siddiqui, M.S. & Rastogi, S. (2017). *Statistics for managers*. (8th ed.). Pearson Academic Publishing India.



## Core Course

**Course Code: 22PBA2115 | Title: Innovation and Entrepreneurship | Credits: 3**

### I. Course Description

The major objective of the course is to give the students a hands-on, real-life experience on the why, what, how, and when to create a startup. The course challenges the participants to look at challenges - innovate, and discover a product or a service either a commercial or social startup. The course is taught in a real-life context, where students form teams and acquire the skills and know-how to develop their business idea from the conceptual stage to the marketplace. They are guided in building a scalable business model via real-life experiments and make efforts to launch a MVP (minimum viable product).

### II. Course Outcomes

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

1. Understand and differentiate Start-up v/s Entrepreneurship and start-up mantra's of founders- traits.
2. Analyse challenges from a commercial or social perspective and through design thinking process able to come with a minimum viable product or service.
3. Understands business from a multi-disciplinary context and creation of business models.
4. Work and demonstrate team spirit and leadership qualities.

### III. Course Content

#### 1. Entrepreneurship and Start-ups

- a. Entrepreneurship – a brief look at its origins v/s Startups
- b. Design thinking -intro
- c. Stages in design thinking
- d. Tools for effective design thinking process
- e. Design thinking for startups -exercise.

#### 2. Ideation for business and social startups

- a. Ideation
- b. Idea -Assessment
- c. Idea -Validation
- d. Market Assessment and Competitor Analysis

### **3. Business Planning**

- a. Building blocks of a business plan – Business Canvas Model
- b. Integrate major business domains for effective modeling
- c. Scaling up business models in a volatile environment
- d. Fundamentals of legal foundation – MSME/LLP/Pvt/Public - Company registration, IPR's, compliances

### **4. Fund raising and valuation**

- a. Business Valuation
- b. Techniques and methods of fund raising
- c. Role of Central Government and State Government in promoting Entrepreneurship
- d. Business plan in detail.

### **5. Challenges in Entrepreneurship**

- a. Intrapreneur Mindset
- b. Negotiation Techniques
- c. Scaling up or Exit – when and how

## **IV. Course Materials**

### **a. Mandatory**

Ries, E. (2011). *The lean start-up*. Crown Business.

### **b. Additional**

Thiel, P. & Blake, M. (2014). *Zero to one: notes on startups, or how to build the future hardcover*. Crown Business.

Khanka, S.S. (2012). *Entrepreneurial development*. S. Chand & Co. Ltd.



## Core Course

**Course Code: 22PBA2116 | Title: Corporate Ethics and Legal Aspects of Business | Credits: 3**

### I. Course Description

Business Ethics course imparts management professionals how business has to be conducted in a given society with codes, principles and ethics. Students will be introduced to the ethical theories and essentials of business laws.

### II. Course Outcomes

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

1. Understand the basic concepts of ethics.
2. Apply theoretical frameworks of ethics in business.
3. Understand the basic concepts relating to business law.
4. Apply various laws relating to contracts and sale of goods in business.

### III. Course Content

#### 1. Ethics in business

- a. Basics of ethics
- b. The need for ethical intervention
- c. Positions for and against ethics in Business
- d. Unethical issues in contemporary business
- e. Values and Ethical Dilemma

#### 2. Ethical Theories and Decision making

- a. Deontological
- b. Teleological
- c. Rights and Duties
- d. Justice and Fairness
- e. Moral Reasoning
- f. Kohlberg's Moral Development

#### 3. Introduction to Legal aspects of Business

- a. Introduction to Business Laws
- b. Structure of the Indian Legal System
- c. Sources of Law and Legal System
- d. Indian Contract Law

- e. Fundamentals of contract laws
- f. Formation of Contracts
- g. Principles of Contract Laws
- h. Legality of Object/ Consideration;
- i. Performance of contract
- j. Discharge of contract
- k. Breach of contract
- l. Types of Contracts

#### **4. Sale of Goods Act**

- a. Introduction to Sale of Goods
- b. Principles of Sale of Goods
- c. Transfer of Ownership and Property
- d. Performance of contract
- e. Rights of Unpaid Seller

#### **5. Intellectual Property Rights**

- a. Patent Rights
- b. Copyright, Trademarks
- c. Geographical Indicators

### **IV. Course Materials**

#### **a. Mandatory**

Fernando, A.C., Muraleedharan, K.P., & Satheesh, E.K. (2019). *Business ethics- An Indian perspective*. (3rd ed.). Pearson Publications.

Ravinder, K. (2021). *Legal aspects of business*. (5th ed.). Cengage Learning.

#### **b. Additional**

Ferrell, O.C. & Paul. J. (2005). *Business ethics*. (6th ed.). Biztantra Publications.

Albuquerque, D. (2013). *Business ethics*. (5th ed.). Oxford University Press.

Velasquez, M. G. (2011). *Business ethics - Concepts and cases*. (6th ed.). Prentice Hall of India (P) Ltd.

Akhileshwar, P. (2018). *Legal aspects of Business*. (7th ed.). McGraw Hill.

# CORE COURSES

Semester III



## Core Course

**Course Code: 22PBA3117 | Title: Global Strategy | Credits: 3**

### I. Course Description

The course exposes the students to the concepts and tools of strategy formulation and execution. The course explores the methods and tools used for scanning internal and external environment; the key drivers for business. The course builds on concepts and theories in Economics, Finance, Marketing, Organizational Behaviour etc. The course takes a general management perspective and examines how functional strategies are integrated for building a sustained competitive advantage vis-a-vis competition.

### II. Course Outcome

#### End of the course the students will be able to

1. Analyze the structural features of an industry and develop strategies for attaining a favorable position vis-a-vis competition.
2. Review the myths and realities in vision and mission formulation and come out with novel yet practical framework of his own.
3. Learn to use different tools for scanning external environment and develop appropriate strategies integrating with firm's core competencies.
4. Appraise the resources and capabilities of the firm in terms of their ability to create sustainable strategies in functional areas.
5. Build business models, with a definite functional, business and corporate level strategies in line with the ongoing business trend.

### III. Course Content

#### 1. Strategic Management - Process

- a. Strategy – brief history; demystifying strategy
- b. Strategic Management Process
- c. Business Models
- d. Vision
- e. Mission
- f. Strategic Intent, Leadership and Corporate Sustainability

#### 2. External Environment

- a. Understanding key external environments
- b. Tools for scanning

- c. Interpretation and use in strategy formulation

### **3. Internal Environment**

- a. Appraising Organizations
- b. Internal environment dynamics – capability factors
- c. Techniques for Assessment
- d. Assessment Interpretation and using them in strategy formulation.

### **4. Building Strategies**

- a. Functional level
- b. Business level
- c. Corporate level
- d. Analyze competitive advantage and build sustainable strategy.
- e. Innovate existing models; create multi-business models for a global and local environment.

## **IV. Course Materials**

Hill, C. W. L., & Jones, G. R. (2018). *An integrated approach to strategic management*. Cengage Learning.

Magretta, J. (2019). *The five forces: Competing for profits – Understanding Michael Porter's best-known framework*.



## Core Course

**Course Code: 22PBA3118 | Title: Business Research | Credits: 3**

### I. Course Description

This course will impart a thorough idea of how to handle business problems through a systematic process - fixing the sample size, mode of collecting the data, selection of hypothesis and the type of statistical test that can be adopted.

### II. Course Outcome

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

1. Understand how to fix the research problem for a situation.
2. Know what type of research methods to be adopted.
3. Learn the art of creating questionnaire.
4. Know how to fix the sample size.
5. Understand what type of tests to be adopted for getting proper insights to decision making.

### III. Course Content

#### 1. Research problems and questions and how they relate to debates in research methods

- a. Introduction
- b. The nature of business research
- c. What kind of business problems might need a research study?
- d. What are the key issues in research methods we need to understand?

#### 2. Putting the problem into context: identifying and critically reviewing relevant literature

- a. How does literature relate to research?
- b. What kind of literature should we search for?
- c. Effective literature searching
- d. Critical analysis of literature
- e. Using APA / Harvard referencing style

#### 3. Choosing research methods, approaches and strategies

- a. Different perspectives of knowledge and research which underpin research design
- b. Identify differing research paradigms for business
- c. Key differences between qualitative and quantitative research methods and how and why they may be mixed

- d. Criteria of validity and reliability in the context of business research
- e. Your choice of research strategy or design
- f. Classification of research
- g. The business research process
- h. The academic business research process
- i. Understand how ethical issues arise in business research at every stage

#### **4. Choosing samples from populations and Questionnaire design and testing**

- a. Understand how and why sampling relates to business research
- b. Identify and use a range of probability and non-probability. Sampling techniques
- c. Selecting the size of your sample
- d. Understand and assess representativeness of samples and generalizability from samples
- e. Selecting appropriate statistical tools for the research variables
- f. Appreciate and overcome the difficulties associated with questionnaire design
- g. Choosing from a range of question formats
- h. How to design, pilot and administer questionnaires
- i. Practical issues in conducting interviews, focus groups, participant observation
- j. Your personal approach to writing a research report
- k. The differences between writing a report for a business audience and for academic purposes
- l. Producing an oral presentation of key findings

#### **5. Sampling Theory and Testing of hypothesis**

- a. Sampling Techniques
- b. Confidence intervals
- c. Chi-Square
- d. Z – test
- e. T- test
- f. F- test
- g. ANOVA
- h. Factor Analysis

### **IV. Course Materials**

#### **a. Mandatory**

Greener, S., & Martelli, J. (2020). *Introduction to business research methods*. (4th ed.).

Mariappan, P. (2019). *Statistics for business*. (1st ed.). Taylor & Francis Group.

#### **b. Additional**

Levin, R.L., Rubin, D.S., Siddiqui, M.S. & Rastogi, S. (2017). *Statistics for managers*. (8th ed.). Pearson Academic Publishing India.

Greener, S. & Ventus. (2008). *Business research methods*.

# Finance

## Electives

Semester III



## Electives

**Course Code: 22PBA3101 | Title: Security Analysis | Credits: 3**

### I. Course Description

This course aims at providing students with an understanding of economy-industry-company analysis and various inter linkages that influence the securities market. It enables them to establish the valuable linkage between modern theories of finance and the analytical techniques used by investors for valuing securities.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the functioning of securities market.
2. Learn the application of tradeoff between risk and return.
3. Demonstrate the understanding of the fundamentals of economy, industry and company.
4. Demonstrate the ability to do fundamental and technical analysis of the securities.
5. Understand the theories of securities market.

### III. Course Content

1. **Investment Scenario**
  - a. Indian Investment scenario
  - b. Investment Objectives and Constraints
  - c. Investment avenues
  - d. Sources of financial information
2. **Securities Market, Risk and Return**
  - a. Markets and their Functions
  - b. Development of Stock Market in India
  - c. Methods of Raising Capital
  - d. Listing of Securities
  - e. Stock Market Indices
  - f. Securities and Exchange Board of India
3. **Risk and Return**
  - a. Concept and Components of Risk
  - b. Systematic and Unsystematic Risk
  - c. Benefits of Diversification
  - d. Risk and Return of a Single Asset

- e. Beta Estimation and Capital Asset Pricing Model
- f. Efficient Market Hypothesis

#### **4. Valuation of Bonds and Equity Shares**

- a. Concepts of Value
- b. Features of a Bond
- c. Bonds values and yields
- d. Bond values and interest rates
- e. Valuation of equity shares
- f. Equity capitalization rate

#### **5. Fundamental Analysis**

- a. Economic Analysis
- b. Industry Analysis
- c. Company Analysis

#### **6. Technical Analysis**

- a. Introduction
- b. Charts
- c. Reversal patterns
- d. Continuation patterns
- e. Relative Strength Analysis,
- f. Moving Average Analysis
- g. Dow theory

### **IV. Course Materials**

#### **a. Mandatory**

Chandra, P. (2017). *Investment analysis & portfolio management*. McGraw-Hill Professional.

#### **b. Additional**

Fischer, D.E., Jordan, R.J., & Pradhan, A.K. (2018). *Security analysis & portfolio management*. Pearson.



## Electives

**Course Code: 22PBA3102 | Title: Derivatives Management - I | Credits : 3**

### I. Course Description

This course has become increasingly popular and most commonly used in the world of finance. This course provides basic knowledge about various types of financial derivatives like forward, futures, options and swaps.

### II. Course Outcomes

**Upon successful completion of the course, the students will be able to:**

1. Understand the basic features of financial derivatives.
2. Identify the difference between Forward and Futures contracts.
3. Explain the mechanics of different derivatives.
4. Examine the future and options contracts for equity, commodity, interest rate and currency.

### III. Course Content

#### 1. Introduction to Financial Derivatives

- a. History of Derivatives Market
- b. Types of derivatives
- c. Participants in Derivatives Market
- d. Advantages and Risks in Derivatives

#### 2. Forward and Futures

- a. Specifications of Futures Contract
- b. Difference between Forwards and Futures
- c. Futures Price, Forward price and Spot Price
- d. Types of Futures

#### 3. Options

- a. Terminology of Options
- b. Classification of Options
- c. Intrinsic Value and Time value of Options
- d. Exchange traded Options and OTC Options

#### **4. Swaps**

- a. Nature of Swap
- b. Swap Warehousing
- c. Swaptions
- d. Interest rate Swap and Currency Swap

#### **5. Derivatives Contract**

- a. Commodity Derivatives
- b. Equity Derivatives
- c. Interest rate derivatives
- d. Currency Derivatives

### **IV. Course Materials**

#### **a. Mandatory**

Hull, J.C. (2017). *Options, futures and other derivative securities*. (10th ed.). Pearson.

#### **b. Additional**

Gupta, S.L. (2017). *Financial derivatives - Theory, concepts and problems*. (2nd ed.). Prentice Hall of India.

Kumar, S.S.S. (2010). *Financial derivatives - Theory, concepts and practice*. (4th ed). PHI Learning.

Stulz. (2011). *Risk management and derivatives*. (6th ed.). Cengage Learning.



## Electives

**Course Code: 22PBA3103 | Title: Banking and Financial Services | Credits: 3**

### I. Course Description

This course aims at giving an overall understanding of the banking, financial and insurance services. The course gives a basic insight about banking operations, banking financial statements, regulatory frameworks and acquaint the learners with various banking and insurance related services.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the functioning of Commercial banks.
2. Evaluate and appreciate the financial statements of banks.
3. Demonstrate the understanding of CAMELS framework.
4. Recognise the role of technology in banking.
5. Understand the merchant banking services.
6. Understand the insurance services

### III. Course Content

#### 1. Banking Services

- a. Origin and growth of Banking, Functions of Commercial Banking
- b. Banker Customer Relationship
- c. Fee based services
- d. Retail Products and Channels
- e. Personal Banking
- f. Bancassurance
- g. Small and payment banks

#### 2. Bank's Financials and BASEL Framework

- a. Balance Sheet and Income Statement
- b. CAMELS framework
- c. NPA categories and NPA Provisioning Norms
- d. BASEL Accords

#### 3. Digital Banking Services

- a. Internet Banking
- b. Mobile Banking

#### 4. Financial Services

- a. Leasing Services

- b. Hire Purchase Financing
- c. Factoring and Forfaiting Services
- d. Credit Rating Services
- e. Fintech in financial services

**5. Insurance Services**

- a. Principles of Life and General Insurance
- b. Life Insurance Products
- c. Annuities and insurance premiums
- d. General Insurance products
- e. Reinsurance

**IV. Course Materials**

**a. Mandatory**

Gulati, N.C. (2010). *Principles of banking management*. Excel Books Pvt Ltd.

Gurusamy, S.(2009). *Merchant banking and financial services*. (3rd ed.). Tata McGraw – Hill.

**b. Additional**

Sankaran, S. (2011). *NCFM- Banking sector module*. National Stock Exchange of India Ltd.

Khan, M.Y. (2017). *Financial services*. (8 ed.). Tata McGraw – Hill.



## Electives

**Course Code: 22PBA3104 | Title: Accounting Analytics | Credits: 3**

### I. Course Description

This course familiarizes the students to understand the ratios and accounting based valuation. The course focuses on comprehensive learning in earnings management, on analytic techniques for decision making involving Discretionary Accruals Models and Prediction Models. It enables the students to analyze linking Non-Financial Metrics to Financial Performance.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the basic concepts related to accounting ratios.
2. Enhance the understanding in Earnings Management.
3. Be competent on Discretionary Accruals Models, Fraud Analytics, Big Data and Prediction Models.
4. Analyse and evaluate linking Non-Financial Metrics to the performance of companies.

### III. Course Content

#### 1. Ratios and Forecasting

- a. DuPont analysis
- b. Profitability, Turnover ratios & Liquidity ratios
- c. Comparative & Common Size Financial Statements
- d. Trend analysis - Forecasting Financial Statements

#### 2. Earnings Management

- a. Overview of Earnings management
- b. Revenue recognition: Before and after cash collection
- c. Expense recognition: Capitalizing vs. Expensing
- d. Expense recognition: Reserve accounts and write-offs

#### 3. Big Data and Prediction Models

- a. Fraudulent Financial Statements
- b. Fraud Prediction Models
- c. Beneish M-Score
- d. Benford's Law -Primary Benford Law test
- e. Financial Statements detecting discrepancies from Benford's Law
- f. Asset quality

index (AQI), Sales growth index (SGI), Depreciation index (DEPI)

**4. Linking Non-Financial Metrics to Financial Performance**

- a. Linking Nonfinancial Performance to Financial Results
- b. Key Component of Managerial Decision-Making
- c. Selecting performance measures for evaluating managerial and business performance
- d. Informal data analyses
- e. Linking Nonfinancial and Financial Results in Business Models

**IV. Course Materials**

**a. Mandatory**

Godwin, N., Alderman, W., & Sanyal, D. (2016). *Financial ACCT: A South-Asian Perspective*. (2nd ed.). Cengage.

Materials will be provided for the course by the course coordinator



## Electives

**Course Code :22PBA3105 | Title: Financial Modelling using Spreadsheet – I | Credits: 1.5**

### I. Course Description

This course aims at introducing analysis of financial statements by using spreadsheet and build forecasting models to predict profitability and the financial status of the organization.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Analyse financial statements using comparative and common size techniques.
2. Forecast the financial statements.
3. Demonstrate the skill of leverage analysis.

### III. Course Content

#### 1. Financial statement analysis

- a. Comparative Financial Statement analysis
- b. Common size Financial Statement analysis
- c. Trend Analysis
- d. Ratio Analysis & Dupont Chart

#### 2. Financial Forecasting

- a. Forecasting the Income Statement
- b. Forecasting the Balance Sheet
- c. Regression analysis

#### 3. Budget, Break even and Leverage Analysis

- a. Cash Budget Scenario Analysis
- b. Break-even Analysis
- c. Degree of operating leverage, Degree of Financial leverage, and Degree of Combined leverage

### IV. Course Materials

#### a. Mandatory

Mayes, T.R. (2016). *Financial analysis with microsoft excel*. Cengage Learning.

#### b. Additional

Winston, W.L. (2017). *Microsoft excel 2016 - Data analysis and business modeling*. Microsoft Press.

Proctor, S. K. (2010). *Building financial models with microsoft excel: A guide for business*

*professionals. Wiley.*



## Electives

**Course Code: 22PBA3106 | Title: Mutual Funds | Credits: 1.5**

### I. Course Description

This course provides in-depth knowledge of the mutual fund industry and its operations. It is intended to familiarize with the basic concepts related to mutual funds, how they work and its legal structure. This course describes the role of distributors, Evaluation of mutual fund schemes and the recent trends in the mutual funds industry.

### II. Course Outcomes

Upon successful completion of the course, the students will be able to:

1. Understand the structure of Mutual Fund.
2. Understand the roles and responsibilities of distributors.
3. Analyze mutual fund portfolio.
4. Evaluate the risk and rewards of mutual fund schemes.

### III. Course Content

#### 1. Mutual Fund - Introduction

- a. Concept of Mutual Fund
- b. Classification of Mutual Fund
- c. Investing Different Asset Classes through Mutual Funds
- d. Growth of the Mutual Fund industry in India

#### 2. Legal Structure and Regulatory Framework of Mutual Fund

- a. Structure of Mutual Fund
- b. Organization structure and Functions of Asset Management Company
- c. Role of Mutual Fund regulators in India
- d. Due diligence process by AMCs for Distributors
- e. Redress mechanism of Investor Grievances

#### 3. Mutual Fund Distribution Channel Management Practices

- a. Mutual Fund distributors
- b. Modes of Distribution
- c. Difference between Mutual Fund distributors and Investment Advisors
- d. Nomination facilities to Agent / Distributors
- e. Revenue for Mutual Fund Distributor

**4. Net Asset Value and Taxation of Mutual Fund Scheme**

- a. Net Assets of Mutual Fund scheme and Net Asset Value
- b. Types of Loads and its impact on NAV
- c. Applicability of Taxes in respect of Mutual Funds
- d. Applicability of GST
- e. Tax benefits and Tax Deducted at Source

**5. Selection and Evaluation of Mutual Fund Scheme**

- a. Benchmarks for Equity, Debt and other schemes
- b. Factors affecting Mutual Fund performance
- c. Measuring Risk and Return of Mutual Fund Scheme
- d. Selection of Mutual Fund Scheme
- e. Do's and Don'ts while selecting Mutual Fund Schemes

**IV. Course Materials**

**a. Mandatory**

Fredman & Wiles. (2004). *How mutual funds work*. (2nd ed.). Prentice Hall.

**b. Additional**

Sharpe, W.F., Alexander, G.J., & Bailey, J.V. (2006). *Investments*. (6th ed.). Prentice Hall.

Fischer, D.E., Jordan, R.J., & Pradhan, A.K. (2018). *Security analysis & portfolio management*. Pearson.

# Marketing

## Electives

Semester III



## Electives

**Course Code: 22PBA3201 | Title: Product and Brand Management | Credits: 3**

### I. Course Description

The course is designed to give the students working knowledge of product and brand management as a function is done in consumer and industrial markets. The entire cycle of need-want-product-brand is covered in detail. The students will appreciate the competitive involved right from design of the product to reaching to brand architecture to brand management strategy.

### II. Course Outcome

End of the course the student will be able to

1. Understand and relate the fundamentals of product development and the various stages.
2. Appreciate consumer psychology in buying behavior and the research process.
3. Learn and apply marketing communication in different medium, costs and its metrics.
4. Experience brand management fundamentals through a case-based approach.

### III. Course Content

#### 1. New Product Development

- a. Introduction – why, when and how of new product - evolution – product discovery
- b. Different stages of new product development; proof of concept to commercialization – challenges and strategy development using design thinking.

#### 2. Marketing Communication for New products

- a. Integrated Marketing Communication – elements and process.
- b. Big Idea – Development through creative techniques / understanding consumer psychology of buying.

#### 3. Communication in different mediums

- a. Print – Layouts and other key principles for communication through print.
- b. TV – Channels and relevant process.
- c. Other mass media methods of communication
- d. Digital Marketing – basics.
- e. Relevant metrics and financials for decision making.
- f. Below the Line promotion – Trade & Consumer.

#### **4. Brand Management**

- a. Product to Brand – Stages and architecture for different sectors.
- b. Brand Audit.
- c. Strategy – Brand Message, building brand equity and brand loyalty.
- d. Brand equity.

#### **IV. Course Materials**

Marc, A. & Annachino, P.E. (2006). *New product development: From initial idea to product management*. Elsevier.

D'Souza, A. & Shah, K. (2008). *Advertising and promotion*. (5th ed.). Tata McGraw-Hill.

Keller, K.L. (2012). *Strategic brand management: Building, measuring and managing brand equity*. (4th ed.). Pearson Education.



## Electives

**Course Code: 22PBA3202 | Title: Services Marketing | Credits: 3**

### I. Course Description

The course helps to understand the nature and scope of services marketing. It deals with the unique challenges in developing and managing quality service. The tools and strategies to address these challenges are dealt.

### II. Course Outcome

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

1. Understand the unique challenges in marketing of services.
2. Understand the dimensions of service quality and the various gaps that can occur during service delivery.
3. Learn service standards, service design and distribution of services.
4. Appreciate employees' role and customers' role in service delivery.
5. Develop strategies to match demand and supply of services and pricing.

### III. Course Content

#### 1. Foundations for Services Marketing

- a. Service Sector and Indian Economy
- b. Meaning and Characteristics of Services
- c. Classification of Services and Service Adjuncts
- d. Service and Technology
- e. Services Marketing Mix

#### 2. Focus on the Customer

- a. GAPS Model of Service Quality and Service Quality Dimensions
- b. Consumer Expectations
- c. Customer Perceptions of Service
- d. Consumer Research in Services
- e. Service Encounters

#### 3. Service Standards, Design and Distribution

- a. Service Standards
- b. Service Design
- c. Physical Evidence and the Servicescape
- d. Distribution
- e. Role of Intermediaries and Electronic Channels

#### **4. Delivering and Performing Service**

- a. Role of Employees in Service Delivery
- b. Role of Customers in Service Delivery
- c. Self Service Technologies
- d. Strategies for Enhancing Customer Participation

#### **5. Managing Service Promises**

- a. Managing Demand and Supply
- b. Pricing Strategies: Yield Management
- c. Customer Retention
- d. Complaints Handling and Service Recovery

### **IV. Course Materials**

#### **a. Mandatory**

Zeithaml, V.A., Bitner, M.J., Gremler, D.D. (2017). *Services marketing – Integrating customer focus across the firm*. (7th ed.). McGraw Hill Education (India) Pvt. Ltd.

#### **b. Additional**

Bateson, E.G. J., & Hoffman, K. D. (2011). *Services marketing*. (4th ed.). Cengage Learning India Private Limited.

Wirtz, J., Lovelock, C., & Chatterjee, J. (2018). *Services marketing – People, technology, strategy*. (8th ed.). Pearson Education.



## Electives

**Course Code: 22PBA3203 | Title: Digital Marketing | Credits: 3**

### I. Course Description

The course covers the what, why, and how of major approaches to digital marketing, comprising of search engine optimization, website analytics, search and display ads, email marketing, social media, and social listening/monitoring. The course is designed to make the students to gain knowledge and skills in digital marketing.

### II. Course Outcome

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

1. Understand and appropriate marketing strategies in an online environment.
2. Know the working of Search Engine Optimization.
3. Be familiar with content development and e-mail and social media marketing.
4. Understand and learn the digital marketing strategies in social media.

### III. Course Content

#### 1. Online Environment

- a. Getting started online
- b. Developing online presence
- c. B2C online presence
- d. B2B online presence

#### 2. Search Engine Optimization (SEO)

- a. How search engine works
- b. Keyword selection
- c. On-site optimization
- d. Off-site optimization
- e. Paid search

#### 3. Content & Email Marketing

- a. Content marketing
- b. Content types
- c. Data – Email Marketing Process
- d. Design and Content
- e. Delivery and Discovery

#### **4. Social Media Marketing**

- a. Social networks and online communities
- b. Blogging
- c. Viral marketing

#### **5. Online Advertising**

- a. Online ad formats
- b. Search engine advertising
- c. Network advertising
- d. Affiliate programmes
- e. Landing pages

#### **IV. Course Materials**

##### **a. Mandatory**

Ryan, D. (2017). *Understanding digital marketing: Marketing strategies for engaging the digital generation*. (4th ed.). Kogan Page Limited.

##### **b. Additional**

Stokes, R. (2013). *The essential guide to marketing in a digital world*. (5<sup>th</sup> ed.). Quirk eMarketing.

Charlesworth, A. (2014). *Digital marketing: A practical approach*. (2nd ed.). Routledge.

Bhatia, P.S. (2019). *Fundamentals of digital marketing*. (2<sup>nd</sup> ed.). Pearson India Education Services Pvt. Ltd.



## Electives

**Course Code: 22PBA3204 | Title: Business to Business Marketing | Credits: 3**

### I. Course Description

The course gives a strong knowledge base to the students' in the area of B2B marketing. Students understand the elements of marketing function from a B2B perspective. Cases are used to cover the entire gamut of B2B function; starting from understanding industrial buyers to channel management to customer relationship management.

### II. Course Outcome

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

1. Understand consumer behaviour from an B2B perspective.
2. Learn to organize the marketing function in B2B businesses; segmentation and new product management.
3. Develop and apply pricing strategies and channel development.

### III. Course Content

#### 1. Introduction to B2B marketing and understanding consumer environment

- a. B2B marketing - primaries.
- b. Understanding the customer and the environment.

#### 2. Organizing the marketing function

- a. Segmenting and Strategy for new industrial products. Models
- b. Innovations for business markets.

#### 3. Pricing Strategy and Channel Partnerships

- a. Types and Rationale behind each pricing strategy.
- b. Designing and developing a pricing strategy.

#### 4. Communication and customer care for B2B marketing

- a. Communication in vogue and innovative practices –use of digital media.
- b. Customer care – practices- in B2B.
- c. Personal Selling and Sales Productivity.

#### **IV. Course Materials**

##### **a. Mandatory**

Hutt, D.M., Sharma, D., & Speh, W. T. (2017). *B2B marketing: A South-Asian perspective*. (11th ed.). Cengage Learning.

##### **b. Additional**

Cases and articles related to B2B will be given by the Professor during the start of the course.



## Electives

**Course Code: 22PBA3205 | Title: Marketing of Financial Products and Services | Credits: 1.5**

### I. Course Description

The course aims to make the students to understand and apply financial concepts from a marketing perspective. The course penetrates into the relationship between financial services providers and customers, using finance theories and concepts on one hand and the viewpoint of marketing, on the other.

Students will acquire knowledge and understand how financial services/work, together with the marketing acumen necessary to compete successfully in the market.

### II. Course Outcome

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

1. Understand frameworks and approaches related to financial services industry.
2. Apply marketing concepts such as segmentation, targeting and positioning in financial services.
3. Develop marketing/market strategies for multiple services or brand portfolios across segments.

### III. Course Content

- a. Marketing environment in financial products and services - past, present and future -role and importance of digital medium in marketing across business and sectors – and financial services in particular - importance of targeting and positioning of financial products to clients - loyalty and relationship – measurements and resultant strategies and tactics.
- b. Types of financial services – fund and fee-based activities – cost of services and intermediation. SEBI and government’s role as a catalyst to improve financial services as an industry and overall growth.
- c. Mutual funds – Basics -terminologies and concepts -types – equity and debt or hybrid - open and close ended – new fund offers - key parameters for decision making and marketing to clients.
- d. Mutual funds - Sector specific funds, Index funds, tax savings funds, liquid funds, gilt funds, monthly income plans, SWP, SIP and the power of compounding
- e. Selection of mutual funds – guiding prospects select a mutual fund – when and how to review a mutual fund – things to do before and after investments.

#### **IV. Course Materials**

Ennew, C., Waite, N. & Waite, R. (2017). *Financial services marketing: An international guide to principles and practice*. (3rd ed.). John Wiley and Sons.



## Electives

**Course Code : 22PBA3206 | Title: Influencer Marketing | Credits: 1.5**

### I. Course Description

The course helps students to better understand the foundations of influencer marketing. It sets the base for social media promotion. The fundamentals, strategy creation, integration is dealt in detail for campaign building and its assessment are covered in this course.

### II. Course Outcomes

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

1. Understand the basics of influencer marketing.
2. Analyze the importance of strategy in influence marketing.
3. Construct an error free Integrated marketing mix for influencer marketing.
4. Develop the influencer marketing campaign.
5. Evaluate the influencer marketing campaign using scorecard.

### III. Course Content

#### 1. Fundamentals

- a. Introduction to Influencer Marketing
- b. The 3 Types of Influencers
- c. The six principles of Influence
- d. Types of Impact
- e. The Four Ms of Influence Marketing

#### 2. The Strategy of Influence

- a. The business drivers of influence marketing
- b. Integrate the influencer activity into your social media channels
- c. The power of communities
- d. Listening to customer
- e. Plan to Measure
- f. Critical to success – Brand advocates

#### 3. Integration across the marketing mix

- a. Content
- b. Creativity
- c. Influencers and PR
- d. Power of external link building

- e. Influencer marketing and SEO
- f. Influencer Marketing Tools

#### **4. Building Influence Marketing Campaigns**

- a. Decide Goals
- b. Identify the right influencer through segmentation, targeting, and positioning.
- c. Build your Blueprint
- d. Prepare the pitches
- e. Four purposes of Influence
- f. Implementations.

#### **5. Measuring Influence Success**

- a. Analyse Right from the Start
- b. Measurement Mapping
- c. Common Influencer Marketing Mistakes
- d. Deploy the mechanisms
- e. How to measure its success
- f. The Winfluence Success Scorecard

### **IV. Course Materials**

#### **a. Mandatory**

Falls, J. (2021). *Winfluence – Reframing influencer marketing to ignite your brand*. Entrepreneur Press.

#### **b. Additional**

Levin, A. (2020). *Influencer marketing for brands*. Apress.

Brown, D. & Hayes, N. (2008). *Influencer marketing*. Butterworth-Heinemann - Elsevier.

Brown, D. & Fiorella, S. (2013). *Influence marketing - How to create, manage, and measure brand influencers in social media marketing*. Que - Biztech.

# HR

## Electives

Semester III



## Electives

**Course Code : 22PBA3301 | Title : Talent Acquisition | Credits: 3**

### I. Course Description

This course provides the strategies, concepts, and practices essential to the effective selection of personnel to accomplish a business objective, with an emphasis on recruiting, promoting, and retraining employees.

### II. Course Outcomes

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

1. Understand the philosophy of talent acquisition.
2. Develop a recruitment strategy that is aligned with organisational objectives.
3. Analyse the various selection tools.
4. Learn the process and techniques in structuring the interview.
5. Evaluate the placement and induction strategies.

### III. Course Content

#### 1. Changing Business Context in Recruitment and Selection

- a. Philosophy of Talent Acquisition
- b. Job Analysis, Job requirement
- c. Competency-based job analysis methods
- d. Reward based job analysis methods.

#### 2. Recruitment

- a. Planning
- b. Strategy development
- c. Searching, and applicant reactions
- d. E-recruitment process

#### 3. Selection

- a. Process
- b. Validity of selection tools
- c. Selection tests

#### 4. Interviews

- a. Types
- b. Planning
- c. Conducting interview
- d. Online interviews

#### 5. Placement and Induction

- a. Objectives, needs and roles
- b. Online Induction
- c. Online training modules

### IV. Course Materials

#### a. Mandatory

Sahay, P. (2015). *A strategic approach to talent acquisition*. Create Space Independent Publishing platform.

#### b. Additional

Ariss, A.A. (2014). *Global talent management: Challenges, strategies, and opportunities*. (1st ed.). Springer Publications.

Arthur, D. (2011). *Recruiting, interviewing, selecting and orienting new employees* (4th ed.). PHI Learning Private Limited.



## Electives

**Course Code: 20PBA3302 | Title: Learning and Development | Credits: 3**

### I. Course Description

This course imparts the skills necessary to design, develop and implement a training program.

### II. Course Outcomes

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

1. Understand the different learning styles.
2. Analyse need assessment and training needs of the organization.
3. Design training modules that meet the organization's objectives.
4. Develop methods of experiential learning and create a training program.
5. Evaluate training in light of the training objectives.

### III. Course Content

#### 1. Training and Learning Principles

- a. Needs assessment and needs analysis
- b. Determining whether training is the best solution
- c. Andragogy and adult learning theory
- d. Characteristics of adult learners
- e. Learning outcomes, domains
- f. Learning styles, cycle and process
- g. Learning theories

#### 2. Training Objectives

- a. Setting training goals and objectives
- b. Bloom's taxonomy and the three learning domains
- c. Writing SMART objectives
- d. Establishing the training budget

#### 3. Developing the Training Program

- a. Program design
- b. Content derivation
- c. Content sequencing
- d. Developing lesson plan

#### **4. Training Methods, Experiential Learning and Technology in Training**

- a. Training methods
- b. Determining the best method of training
- c. Using e-learning
- d. Levels of technology-based training
- e. Selecting the appropriate training design
- f. Virtual Facilitation skills
- g. Implementing Training and Presentation Skills

#### **5. Evaluation and Return on Investment**

- a. Training evaluation
- b. Benefit-cost ratio
- c. Link training to organization success

#### **IV. Course Materials**

##### **a. Mandatory**

Noe, R. (2017). *Employee training and development*. (7th ed.). McGraw-Hill.

##### **b. Additional**

1. Bhattacharya, D.K. (2015). *Training and Development*. Sage Publication.
2. Planning Tool - Retrieved from <https://www.planware.org/strategicplanner.htm>
3. Evaluation Model from  
Businessballs.com:[www.businessballs.com/kirkpatricklearningevaluationmodel.html](http://www.businessballs.com/kirkpatricklearningevaluationmodel.html)
4. Presentation skills from [www.presentationkills.info/presentationkills.htm](http://www.presentationkills.info/presentationkills.htm)
5. Transfer of learning from  
[www.nwlink.com/~donclark/hrd/learning/transfer.html](http://www.nwlink.com/~donclark/hrd/learning/transfer.html)
6. Atherton, J. (2005). *Learning and Teaching: Experiential Learning*. Retrieved September 10, 2008, from  
[www.learningandteaching.info/learning/experience.htm](http://www.learningandteaching.info/learning/experience.htm)
7. Bloom's Taxonomy (n.d). [www.nwlink.com/~donclark/hrd/bloom.html](http://www.nwlink.com/~donclark/hrd/bloom.html)
8. Kolb Learning (n.d). [www.businessballs.com/kolblearningstyles.htm](http://www.businessballs.com/kolblearningstyles.htm)
9. Learning Style test (n.d.).from [www.coe.iup.edu/rjl/instruction/cm150/self-interpretation/kolb.htm](http://www.coe.iup.edu/rjl/instruction/cm150/self-interpretation/kolb.htm)



## Electives

**Course Code: 22PBA3303 | Title: Labour Codes I | Credits : 3**

### I. Course Description

This course provides a strong framework along with knowledge and understanding of the new labor legislations in India. The Code on Industrial Relations and Occupational Safety is discussed as part of this course. The students understand the application of laws from a managerial perspective. The purpose is to provide an exposure to the students into the labor law administration.

### II. Course Outcomes

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

1. Understand the role played by trade unions and associations.
2. Familiarize themselves with procedures like collective bargaining and settlement of disputes.
3. Apply the concepts of employer and employee safety in the workplace.
4. Observe the role of various parties in an industrial setting and the legal position on those issues.

### III. Course Content

#### 1. Introduction to Labour Codes and the Constitution

- a. Basics of Indian Constitution
- b. Fundamental Rights and Duties
- c. Evolution of the new Labour Codes
- d. Need for the new Codes on Labour
- e. The Changing Nature of Employment

#### 2. The Code on Industrial Relations

- a. Various actors in Industrial Relations
- b. Role of Trade unions
- c. Negotiating Union and Council
- d. Standing Orders
- e. Bipartite forums- Works Committee, Grievance Redressal Committee

- 3. Settling and Handling Industrial Disputes**
  - a. Mechanism for Resolution of Disputes
  - b. Tribunals and Awards
  - c. Strikes and Lockouts
  - d. Layoffs and Retrenchments
  - e. Disputes to Arbitration
  - f. Bipartite and Tripartite Agreements
  
- 4. The Code on Occupational Safety, Health and Working Conditions**
  - a. Definitions in the Code
  - b. Duties of Employers and Employees
  - c. Occupational Safety and Health
  - d. Health, Safety and Working Conditions
  - e. Welfare Provisions
  - f. Annual Leave with Wages
  - g. Maintenance of Records and Registers
  - h. Special Provisions in the Code for Contract Labour, Inter-state Migrant Workers, Factory Workers etc.
  - i. Offences and Penalties

#### **IV. Course Materials**

##### **a. Mandatory**

The Code on Industrial Relations, 2020.

The Code on Occupational Safety, health and working conditions, 2020.

##### **b. Additional**

Sinha, P.R.N., & Sinha, I.B., & Shekhar, S.P. (2021). *Industrial relation, trade unions and labour legislation*. (3rd ed.). Pearson.



## Elective Course

**Course Code: 22PBA3304 | Title: Learning Organizations | Credits: 3**

### I. Course Description

This course helps the students acquiring and transferring knowledge, modifying their behavior to reflect new knowledge and insights. It also helps them in systematic problem solving, experimentation with new approaches, learning from their own experience and past history, learning from the experiences and best practices of others.

### II. Course Outcomes

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

1. Understand the basic theories and practices of learning.
2. Understand and evaluate different learning styles in organisations.
3. Design a program for effective learning.
4. Analyse the processes and skills involved in implementing in a learning organization.
5. Know that organisational learning is interrelated with most organisational and management goals.

### III. Course Content

#### 1. Theory and practice of learning

- a. Reflecting on and analysing learning approaches;
- b. Learning as change; change as learning
- c. Learning as research; research as learning
- d. Human Development (change and learning as life stages)
- e. Learning to learn

#### 2. Organizational learning- Formal

- a. Skills and competences
- b. Skills and abilities need in the future
- c. Education and learning; lifelong learning; learning for employability
- d. Learning 'outcomes' at work; competency approaches to learning

#### 3. Organizational learning – Informal

- a. Informal versus formal
- b. Social learning (Socialisation, enculturation etc)
- c. Development (professional and personal).
- d. Work-based learning
- e. Situated learning; communities of practice; narrative and storytelling.

4. **Learning organizations' – organizations' as learners**
  - a. Defining and creating learning organisations
  - b. Action learning as organisational learning
  - c. Transforming learning philosophies into practical reality
  - d. Management practice as learning practice
  - e. Unlearning and Relearning
  
5. **Managing learning and knowledge management: Maintaining and enhancing the learning organisation**
  - a. Reflective practice
  - b. Action Research
  - c. Policies, strategies and practice in learning organisations
  - d. Internship; Apprenticeship
  - e. Tactical management
  - f. Designing programs for effective learning
  - g. Integrating formal and informal learning at organisational level

#### **IV. Course Materials**

##### **a. Mandatory**

Allen, B. (1997). *Developing a learning organisation*. Pearson.

##### **b. Additional**

Lassey, P. (1998). *Developing a learning organization*. Kogan.

Senge, P. (1994). *The fifth discipline fieldbook: Strategies for building a learning organisation*. Nicholas Brealey Publishing.



## Electives

**Course Code:22PBA3305 | Title: People Analytics | Credits : 1.5**

### I. Course Description

This course describes how HR effectiveness is measured in organizations. It introduces the central concepts of people orientated analytics through hands-on exercises, builds skills and competencies around the management, analysis and representation of data. The subject explores how analytics helps managers to address both tactical and strategic level human capital issues.

### II. Course Outcomes

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

1. Understand the importance of identifying and aligning HR strategy with the organizational strategy.
2. Analyze the methods of measurement of various HR process and
3. Evaluate the different HR metrics.
4. Apply the descriptive analytical tools.
5. Build a HR Dashboard using Excel

### III. Course Content

#### 1. HR Metrics

- a. Types
- b. Application
- c. Payroll
- d. Performance appraisal

#### 2. Descriptive Analytics

- a. Key excel functions
- b. HR Dashboards
- c. HR Data Visualization
- d. HR Data Mapping
- e. Use of Big Data in Data Visualization

#### 3. Advanced HR Analytics

- a. Paired T test
- b. Factor Analysis
- c. HR modelling

- d. Sensitivity Analysis
- e. Cluster Analysis

#### IV. Course Materials

##### a. Mandatory

Bhattacharyya, D.K. (2017). *HR analytics: Understanding theories and applications*. Sage Publications.

##### b. Additional

Banerjee,P., Pandey.J., & Gupta.M. ( 2017). *Practical application of HR analytics*. Sage Publications.

Khan,N., & Millner,D. (2020). *Introduction to people analytics: A practical guide to data- driven HR*. Kogan Publications.

Walsh, M.J. (2021). *HR analytics essentials*. Vibrant Publishers.



## Electives

**Course Code: 22PBA3306 | Title: Team Management | Credits: 1.5**

### I. Course Description

This course provides insight for successful team development process that facilitates the development of a new team or the revitalization of an existing team. Students will develop the skills for team communication strategies, tools, and techniques to assure positive outcomes.

### II. Course Outcomes

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

1. Learn the nature of the team and requirements for building a team.
2. Understand the role an individual play in a team and barriers to effective team communication.
3. Analyse the conflict situations in work teams and gain insight into conflict management strategies.
4. Explore the latest trends in the virtual team management and challenges faced in the organizations.

### III. Course Content

#### 1. Building a Team

- a. Team Requirement
- b. Team Work and Synergy
- c. Team Building Phases and Models
- d. Team Roles and Resources
- e. Goal Setting Strategies

#### 2. Team Development & Culture

- a. Stages
- b. Team Stress Management
- c. Consensus
- d. Trust Development
- e. Empowerment
- f. Expanding Team Skills
- g. Team Culture
- h. Leaders and Followers

### **3. Trends in Team Management**

- a. Virtual Team Management
- b. Virtual Leadership Challenges
- c. Cross Functional Teams
- d. Multicultural Teams
- e. Team Meetings

### **IV. Course Materials**

#### **a. Mandatory**

Bhargava, N.S. & Bhargava, G. (2012). *Team building and leadership*. Himalaya Publishing House.

#### **b. Additional**

Mears, P. & Voehl, F. (1994). *Team building: A structured learning approach*. St. Lucie Press.

Robbins, S.P. & Judge, T. A. (2017). *Organizational behaviour*. Pearson.

# IT & Analytics

## Electives

Semester III



## Electives

**Course Code: 22PBA3401 | Title: Machine Learning Using Python | Credits:3**

### I. Course Description

This course introduces the students to Machine learning techniques with analytical experiments. This course helps the students to learn core set of effective machine learning methods and concepts and apply them to solve business problems.

### II. Course Outcomes

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

1. Understand the concepts of machine learning.
2. Learn and demonstrate the supervised techniques using python.
3. Apply and compare the different forecasting techniques in Machine Learning.
4. Learn and demonstrate the unsupervised learning techniques using python.
5. Learn and Apply dimension reduction techniques in Machine Learning.

### III. Course Content

#### 1. Machine Learning

- a. Basics of Data Science
- b. Supervised, unsupervised and reinforcement approach
- c. Business Analytics, Machine Learning, Deep Learning

#### 2. Supervised Learning

- a. Bayesian Classification
- b. Decision Tree
- c. Random Forest
- d. Support Vector Machine
- e. K Nearest Neighbour

#### 3. Forecasting

- a. Linear, Logistic, Multiple regression
- b. Moving average, Exponential smoothing
- c. Auto Regressive Moving Average
- d. Auto Regressive Integrated Moving Average

#### 4. Unsupervised Learning

- a. Hierarchical, Partitioning and K-Mean
- b. Density, Grid, Model, Constrain based

## **5. Dimension Reduction**

- a. Principal Component Analysis
- b. Linear Discriminant Analysis
- c. Generalized Discriminant Analysis

## **IV. Course Materials**

### **a. Mandatory**

Pradhan, M. & Kumar, U.D. (2018). *Machine learning using python*. Wiley.

### **b. Additional**

Lant, B. (2015). *Machine learning with R*. (2nd ed.). Packt Publishing Ltd.

Sebastian, R. & Vahid, M. (2017). *Python machine learning*. (2nd ed.). Packt Publishing Ltd.



## Electives

**Course Code: 22PBA3402 | Title : Data Mining and Data Warehousing | Credits:3**

### I. Course Description

This course introduces the students to the field of data mining and data warehousing. It helps the students to learn different techniques in data mining and types of web mining systems

### II. Course Outcomes

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

1. Understand the concepts of data mining
2. Apply the methods for data Pre-processing
3. Apply and analyze the various association mining techniques and algorithms to solve business problem
4. Examine the various types of web mining systems in web data
5. Analyse the Data Warehousing and data cube architectures and their use in business

### III. Course Content

#### 1. Data Mining

- a. Knowledge Discovery Process
- b. Knowledge representation Methods
- c. DM Tools
- d. Data Pre-processing

#### 2. Association Mining

- a. Classification vs Clustering
- b. Association Rule Mining
- c. Mining Frequent Pattern
- d. Pattern Evaluation methods
- e. Ensembles Methods
- f. Imbalance sampling
- g. Model Selection and Evaluation
- h. Feature Selection

#### 3. Web mining

- a. Content Mining
- b. Structure Mining
- c. Usage Mining
- d. Document Clustering

- e. Indexing and Crawling
- f. Architecture of Search Engine

#### **4. Data Warehousing**

- a. Operational data warehouses
- b. Extract, Transform and Load
- c. Online Transaction Processing
- d. Online Analytical Processing
- e. OLAP Servers

#### **5. Data Cube**

- a. Data Cube and operations
- b. Multidimensional data model
- c. Advancement in Warehouse architectures

### **IV. Course Materials**

#### **a. Mandatory**

Gupta, G.K. (2014). *Introduction to data mining with case studies*. (3rd ed.). Prentice Hall of India Learning Private Limited.

#### **b. Additional**

Jiawei, H., Kamber, M., & Pei, J. (2012). *Data mining concepts and techniques*. (3rd ed.). Morgan Kaufmann Publishers.

Kimball, R., Ross, M. (2014). *The data warehouse toolkit: The definitive guide to dimensional modeling*. (3rd ed.). Wiley.



## Electives

**Course Code: 22PBA3403 | Title : Big Data Analytics | Credits:3**

### I. Course Description

This course introduces the students to learn the big data analytics and their architectures. This course also deals various analytical techniques to analyze the structured, semi structured and unstructured data.

### II. Course Outcomes

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

1. Understand the concepts of Big data and types of data.
2. Learn and use the various components of Big data management.
3. Understand non-relational databases by examining techniques for storing and processing large volumes of semi structured and unstructured data.
4. Apply the various web sentiment analytics to solve business problems.
5. Learn and apply the techniques to solve the problems using Natural Language Processing.

### III. Course Content

#### 1. Big Data Analytics

- a. Concepts
- b. Types of Big Data
- c. Virtualization
- d. Components of Big Data Technology
- e. Distributed storage systems
- f. Row and column store

#### 2. Big Data Management

- a. Linux, Apache, MySQL, PHP
- b. Scale in and Scale out Architecture
- c. Map Reduce
- d. Hadoop Conceptual frame work
- e. Big Data warehouses

#### 3. Text Mining

- a. Identification
- b. Mining
- c. Categorization

- d. Clustering
- e. Automatic text Summarization
- f. Review Analytics

#### **4. Web Sentiment Analytics**

- a. Sentiment Classification
- b. Word, Sentence, Document, Features Level sentiment
- c. Sentiment Lexicon Generation
- d. Opinion Summarization
- e. Opinion Spam Detection

#### **5. Natural Language Processing**

- a. Linguistic Approach
- b. Morphological Analysis, Phonology
- c. Tokenization, Stemming, Lemmatization
- d. Part of speech tagging
- e. Syntactic and Semantic representation
- f. Parsing Techniques
- g. Models in NLP

### **V. Course Materials**

#### **a. Mandatory**

Soumendra, M., Jagadeesh, M., & Srivatsa, H. (2013). *Big data imperatives – Enterprise big data warehousing, BI implementations and analytics*. (1st ed.). A Press.

#### **b. Additional**

Michael, M., Chambers, M., & Dhiraj, A. (2013). *Big data big analytics*. Wiley India.  
Bing, L. (2015). *Sentiment analytics: mining opinions, sentiments and emotions*. Cambridge University Press.



## Electives

**Course Code: 22PBA3404 | Title: Software Engineering | Credits: 3**

### I. Course Description

This course gives an overview of Software Development Life Cycle and introduces the students to different methods, approaches and process of software development.

### II. Course Outcomes

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

1. Understand the concept and process of software engineering
2. Learn the basics of project management
3. Learn and apply the various methods for software analysis and design
4. Apply the various types of software testing
5. Review the latest development in the software development

### III. Course Content

#### 1. Software Process

- a. The Software Process Models
- b. The Linear Sequential Model
- c. Prototyping Model
- d. The Rapid Application Development Model
- e. The Evolutionary Software Process Models
- f. Agile Modeling

#### 2. Project Management Concepts

- a. People, Product, Process, Project
- b. Measure, Metrics, Indicators

#### 3. Software Analysis

- a. Requirements Analysis
- b. Analysis Modelling
- c. Data Modeling
- d. Functional Modeling
- e. Behaviour Modeling
- f. Agile Modelling

#### **4. Software Design**

- a. Design Process
- b. Modular Design
- c. Architectural Design
- d. User Interface Design
- e. Component Level Design

#### **5. Software Testing**

- a. Test Case Design
- b. White box Testing
- c. Black Box Testing
- d. Integration Testing
- e. Unit Testing

### **IV. Course Materials**

#### **a. Mandatory**

Pressman, R.S. (2019). *Software engineering: A practitioner's approach*. (9th ed.). McGraw Hill Education.

#### **b. Additional**

Sommerville, I. (2016). *Software engineering*. (10th ed.). Pearson Education.



## Electives

**Course Code: 22PBA3405 | Title: Structured Query Language | Credits: 1.5**

### I. Course Description

In this course deals the concept of data base and highlight the need for RDBMS in the functional areas of business. The course provides knowledge on data models, constraints, functions, and queries in relational database management system.

### II. Course Outcomes

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

1. Understand and Learn the basics of RDBMS and their usage in the business.
2. Apply the basics programming skills to solve problem using SQL
3. Create and Maintain data base using Constrains in SQL
4. Learn and apply built in functions to retrieve specific data for decision making

### III. Course Content

#### 1. Data Base

- a. Basic Concepts
- b. Relational Approach
- c. Data base Design
- d. Data Modelling
- e. Normalization
- f. Client Server Technology

#### 2. Structured Query Language

- a. Data Definition Language
- b. Data Manipulation Language
- c. Data Control Language
- d. Data Transaction Language

#### 3. Constraints and Queries in SQL

- a. Unique, Primary, Not Null key
- b. Foreign Key, Check, Default key
- c. Simple Queries using arithmetic operators
- d. Built in functions and sub queries
- e. Order by and Group by clause

#### **IV. Course Materials**

##### **a. Mandatory**

Shah, N. (2012). *Data base systems using Oracle - A simplified guide to SQL and PL/SQL*. (2nd ed.). PHI Learning Private Limited.

##### **b. Additional**

Loney. K, Bob, B. (2013). *Oracle Data base 12C - The complete reference: Oracle press*. McGraw Hill Education.



## Electives

**Course Code: 22PBA3406 | Title: Digital Commerce | Credits: 1.5**

### I. Course Description

This course gives the concepts of Electronic and Mobile Commerce and their applications.

### II. Course Outcomes

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

1. Understand the Concept of Digital Commerce.
2. Know the various Electronic and Mobile commerce systems.
3. Examine the usage of Electronic and Mobile Commerce applications and services.
4. Analyse the E-Commerce business platforms.

### III. Course Content

#### 1. Electronic Commerce

- a. E-commerce and Indian Business Context
- b. E- Payment Systems
- c. Digital Signature
- d. Online financial services

#### 2. Mobile Commerce

- a. Mobile Content Providers
- b. WAP, 5G
- c. GSM, TDMA, PDA, CDMA
- d. Mobile Internet, Mobile IP
- e. Message Authentication Codes

#### 3. M-Commerce Services

- a. Next Generation
- b. Mobile portals, Voice portals
- c. Information services
- d. WML
- e. Wire Framing

#### **IV. Course Materials**

##### **a. Mandatory**

Kenneth, L.C. & Traver, C.G. (2019). *E-commerce 2019: Business, technology and society*. (15th ed.). Pearson Education.

##### **b. Additional**

Duhan, P. Singh, A. (2019). *M-commerce - Experiencing the phygital retail*. CRC Press.

# Supply Chain Management

## Electives

Semester III



## Electives

**Course Code: 22PBA3501 | Title: Principles of Supply Chain Management | Credits: 3**

### I. Course Description

Supply Chain Management course introduces high-level concepts and strategy framework while giving students the practical tools necessary to solve supply chain problems. Using a strategic framework, students are guided through all of the key drivers of supply chain performance - facilities, inventory, transportation, information, sourcing, and pricing. Case study examples are provided to illustrate how good supply chain management offers a competitive advantage and how poor supply chain management can damage an organization's performance.

### II. Course Outcome

1. Helps in understanding the strategy framework related to supply chain problems.
2. Understand the key drivers of supply chain management.
3. Learn and apply quantitative tools for supply chain management issues.

### III. Course Content

- 1. Building A Strategic Framework to Analyse Supply Chains**
  - a. Understanding the Supply Chain
  - b. Supply Chain Performance: Achieving Strategic Fit and Scope
  - c. Supply Chain Drivers and Metrics
- 2. Designing the Supply Chain Network**
  - a. Designing Distribution Networks and Applications to Online Sales
  - b. Network Design in the Supply Chain
  - c. Designing Global Supply Chain Networks
- 3. Planning and Coordinating Demand and Supply in Supply Chain Management**
  - a. Demand Forecasting in a Supply Chain
  - b. Aggregate Planning in a Supply Chain
  - c. Coordination in a Supply Chain
- 4. Designing and Planning Transportation Networks**
  - a. Transportation in a Supply Chain
  - b. Design and planning for efficient and effective transportation.

## **5. Managing Cross-Functional Drivers in A Supply Chain**

- a. Sourcing Decisions in a Supply Chain
- b. Pricing and Revenue Management in a Supply Chain
- c. Sustainability and the Supply Chain

## **IV. Course Materials**

### **a. Mandatory**

Chopra, S. (2019). *Supply chain management strategy, planning, and operation*. (7th ed.). Pearson.

### **b. Additional**

Richard E. & Others. (2015). *Principles of supply chain management*. UK: CRC Press.



## Electives

**Course Code: 22PBA3502 | Title: Supply Chain Data Management Analysis | Credits: 3**

### I. Course Description

The course aims to provide the students an in-depth knowledge on data science concepts for solving supply chain management problems. The course helps the students to learn and understand the linkage and fends them to create an advanced forecast for supply chain. The students will create supply chain model models through a scientific process.

### II. Course Outcome

1. Learn and apply data management principles and process, specific to supply chain management.
2. Master demand forecasting.
3. Learn new concepts such as metrics, underfitting, overfitting, outliers, feature optimization, and external demand drivers.
4. Learn and apply traditional statistical models.

### III. Course Content

#### 1. Statistical Forecast I

- a. Moving Average
- b. Forecast Error
- c. Exponential Smoothing
- d. Underfitting – Double Exponential Smoothing

#### 2. Statistical Forecast II

- a. Model Optimization – Double Smoothing with Damped Trend
- b. Overfitting – Triple Exponential Smoothing

#### 3. Statistical Forecast III

- a. Outliers – Triple Additive Exponential Smoothing

### IV. Course Materials

#### a. Mandatory

Vandeput, N. (2018). *Data science for supply chain forecast*. De Gruyter.





## Electives

**Course Code: 22PBA3503 | Title: Statistical Quality Control | Credits: 3**

### I. Course Description

The course provides a comprehensive coverage from the basic principles to state-of-the-art concepts and applications. The objective is to give the student a sound understanding of the principles of statistical quality control and apply them in a variety of situations.

### II. Assurance of Learning

**End of the course, students will be able to:**

1. Understand and apply statistical methods and tools to improve the quality of the products used.
2. Understand different quality improvement methods to improve the product.
3. Evaluate and get ample insights for improving quality and quality checks.

### III. Course content

#### 1. Quality Improvement in the Modern Business Environment

- a. The Meaning of Quality and Quality Improvement
- b. Brief History of Quality Control and Improvement
- c. Statistical Methods for Quality Control and Improvement
- d. Management Aspects of Quality Improvement

#### 2. Methods and Philosophy of Statistical Process Control

- a. Introduction
- b. Chance and Assignable Causes of Quality Variation
- c. Statistical Basis of the Control Chart
- d. Implementing SPC in a Quality Improvement Program
- e. Applications of Statistical Process Control
- f. Quality Improvement Tools in Transactional and Service Businesses

#### 3. Control Charts for Variables

- a. Introduction 227
- b. Control Charts for  $\bar{x}$  and R
- c. Control Charts for  $\bar{x}$  and s
- d. The Shewhart Control Chart for Individual Measurements
- e. Applications of Variables Control Charts

#### **IV. Course Materials**

##### **a. Mandatory**

Montgomery, D.C. (2009). *Introduction to statistical quality control*. (6th ed.). John Wiley and Sons, Inc.

##### **b. Additional**

Mahajan, M. (2016). *Statistical quality control*. Dhan Pat Rai and Co. Pvt. Ltd.



## Electives

**Course Code: 22PBA3504 | Title: Advanced Mathematical techniques for Supply Chain Management | Credits: 3**

### I. Course Description

Advanced Mathematical modeling tools are highly essential for supply chain managers. The course deals with advanced tools like Integer Programming, Queuing Models, Game and Decision Theory, and Dynamic Programming techniques.

### II. Course Outcomes

1. Helps the user to a model which suits reality.
2. Models used in this are more helpful in decision-making under uncertainty.
3. Helps in optimizing the counters for an enterprise.
4. It helps in reducing the complex models into very simple models.
5. Models help in optimizing the cash inflow and the outflow.

### III. Course Content

1. Integer Programming Model
2. Game theory
3. Decision theory
4. Queuing theory
5. Dynamic Programming model

### IV. Course Materials

#### a. Mandatory

Mariappan, P. (2002). *Operations research - methods and applications*. (2nd ed.). New Century Book House Private Limited.

#### Additional

Taha, H.A. (2019). *Operations research - An introduction*. (10th ed.). Pearson.





## Electives

**Course Code: 22PBA3505 | Title: Lean Six Sigma | Credits: 1.5**

### I. Course Description

This course helps to grasp Six Sigma concepts, methodologies, and tools for quality and productivity promotion. Also, the course imparts the six sigma tools in details for manufacturing and service applications.

### II. Course Outcome

1. Learn and appreciate the need for six sigma.
2. Understand the principles and concept of six sigma.
3. Evaluate the applications from a manufacturing and service organisation standpoint.

### III. Course Content

#### 1. Six sigma

- a. Six Sigma Overview
- b. Six Sigma Framework
- c. Six Sigma Experiences and Leadership

#### 2. Tools used in Six Sigma

- a. Basic QC and Six Sigma Tools

#### 3. Six Sigma and Other Management Initiatives

- a. Quality Cost and Six Sigma
- b. TQM and Six Sigma
- c. ISO 9000 Series and Six Sigma
- d. Lean Manufacturing and Six Sigma
- e. Seven-step Roadmap for Six Sigma
- f. Six Sigma for Quality and Productivity Promotion

#### 4. Case Studies of Six Sigma Improvement Projects

- a. Manufacturing Applications:

#### **IV. Course Materials**

**a. Mandatory**

Park, S.H. (2003). *Six sigma for quality and product promotion*. Asian Productivity Organization.

**b. Additional**

Evans, J. R., Lindsay, W. M. (2019). *Managing for quality and performance excellence*. Cengage Learning.

# Finance

## Electives

Semester IV



## Electives

**Course Code: 22PBA4101 | Title: Portfolio Management | Credits: 3**

### I. Course Description

The course aims at providing students with an understanding of portfolio construction and management in the context of risk diversification. Further, the course aims at providing students with skills to make intelligent decisions regarding the allocation of resources and the formation of optimal portfolios.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the nuances of managing a portfolio.
2. Learn the different approaches to asset allocation.
3. Understand the asset pricing models.
4. Demonstrate the ability to do analyse, diversify and construct a portfolio.
5. Evaluate the performance of portfolios.

### III. Course Content

1. **Portfolio Analysis**
  - a. Portfolio Risk Exposures
  - b. Portfolio Risk Return
  - c. Capital Asset Pricing Model
  - d. Capital Market Line
  - e. Security Market Line
  - f. Portfolio Value at Risk
2. **Portfolio Theories**
  - a. Efficient Market Theory
  - b. Random Walk Theory
  - c. Markowitz Portfolio Optimization
  - d. Sharpe's single index portfolio selection method
  - e. Arbitrage Pricing Theory
3. **Mutual funds**
  - a. Structure and Types of Mutual funds
  - b. Mutual Fund Asset Composition
  - c. Fund Return Measurement

**4. Portfolio Performance Evaluation**

- a. Sharpe's Portfolio Performance Measure
- b. Treynor's Portfolio Performance Measure
- c. Jensen's Portfolio Performance Measure
- d. Comparison of Sharpe, Treynor and Jensen measure

**5. Portfolio Management**

- a. Active and Passive Management
- b. Rebalancing Portfolios
- c. Cost benefit analysis of rebalancing/ revision

**IV. Course Materials**

**a. Mandatory**

Chandra, P. (2017). *Investment analysis & portfolio management*. McGraw-Hill Professional.

**b. Additional**

Fischer, D.E., Jordan, R.J., & Pradhan, A.K. (2018). *Security analysis & portfolio management*. Pearson.



## Electives

**Course Code: 22PBA4102 | Title : Derivatives Management - II | Credits : 3**

### I. Course Description

The course defines the different kinds of derivatives, shows how they are used to achieve various hedging and speculating objectives, introduces a framework for pricing derivatives, and studies several applications of derivative-pricing techniques outside derivative markets. The course presents and analyzes derivatives, such as forwards, futures, and options.

### II. Course Outcomes

**At the end of this course, the students will**

1. Gain practical skills regarding the procedures and systems being followed in the derivatives market.
2. Apply the knowledge for managing investment risks by using suitable derivative instruments.
3. Demonstrate the pricing techniques for option derivative instrument.
4. Understanding the functioning of Exotic options and Credit Derivatives.

### III. Course Content

- 1. Price Determination of Forward and Futures Contract**
  - a. Future Pricing strategies
  - b. Margin and MTM
  - c. Pricing and Trading mechanism of Forward contract
  - d. Payoff from Forward and Futures contract
- 2. Option Pricing Models**
  - a. Determinants of Option Prices
  - b. Options pricing Model (Binomial and Black-Scholes Model)
  - c. Payoff from long position and short position of call option
  - d. Payoff from long position and short position of put option
  - e. Option Strategies - Butterfly
- 3. Swap Contract**
  - a. Valuation of interest rate swap
  - b. Valuation of currency swap
- 4. Recent trends in Derivatives Market**
  - a. Exotic options

- b. Credit Derivatives
- c. Currency Derivatives, Credit Linked Notes, Credit Default Swaps, , ABS, Weather derivatives, Bitcoin futures, , inflation indexed derivatives

**5. Regulations of Financial Derivatives**

- a. Derivatives Regulations in Indian Stock Market
- b. Genesis of Regulation in Financial Derivatives
- c. Case studies

**IV. Course Materials**

**a. Mandatory**

Hull, J.C. (2017). *Options, futures and other derivative securities*. (10th ed.). Pearson.

**b. Additional**

Gupta, S.L. (2017). *Financial derivatives - Theory, concepts and problems*. (2nd ed.). Prentice Hall of India.

Kumar, S.S.S. (2010). *Financial derivatives - Theory, concepts and practice*. (4th ed.). PHI Learning.

Stulz (2011). *Risk management and derivatives*. (6th ed.). Cengage Learning.



## Electives

Course Code: 22PBA4103 | Title: Financial Modelling using Spreadsheet – II | Credits: 3

### I. Course Description

This course aims at giving in-depth knowledge to the students on discounted cash flow techniques using spread sheet.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Analyse systematic risk and return of securities.
2. Price an asset using CAPM.
3. Determine the cost of capital.
4. Demonstrate the understanding of discounting techniques.
5. Apply DCF model in valuing businesses.

### III. Course Content

#### 1. Time value of money

- a. Present value and future value of a stream of cash flows using Excel
- b. Types of cash flows encountered in financial analysis
- c. Intrinsic value Vs required rate of return
- d. Risk and Return Analysis
- e. Theory of risk analysis – CAPM

#### 2. Risk and Return Analysis

- a. Capital Asset Pricing Model

#### 3. Cost of Capital

- a. Firm's Weighted Average Cost of Capital (WACC) using both book- and market-value weights
- b. Firms's WACC changes vs total capital requirements

#### 4. Capital Budgeting

- a. Discounted payback
- b. Net Present Value
- c. Internal Rate of Return

#### 5. Discounted cash flow technique

- a. Free cash flows
- b. DCF model

#### **IV. Course Materials**

##### **a. Mandatory**

Mayes, T.R. (2016). *Financial analysis with microsoft excel*. Cengage Learning.

##### **b. Additional**

Winston, W.L. (2017). *Microsoft excel 2016 - Data analysis and business modeling*. Microsoft Press.

Proctor, S. K. (2010). *Building financial models with microsoft excel: A guide for business professionals*. Wiley.



## Electives

**Course Code: 22PBA4104 | Title: Business Valuation | Credits: 3**

### I. Course Description

This course has been designed with an objective to familiarize students with key aspects of business analysis and valuation. It will equip the students to understand, analyze and value an enterprise.

### II. Course Outcome

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

1. Understand the relationship between income statement, balance sheet and cash flow statements of an organization.
2. Know to analyse the financial statements and highlight the risks associated with the business.
3. Do the valuation of a business.

### III. Course Content

#### 1. Overview of Financial Statement Analysis and Valuation

- a. Purpose of underlying concepts
- b. Overview of useful tools for analyzing
- c. Role in an efficient capital market

#### 2. Business Analysis: Understanding Balance sheets

- a. Mixed attribute measurement model
- b. Asset and liability valuation
- c. Income Recognition

#### 3. Business Analysis: Understanding Income Statements

- a. Profitability Analysis based on various measures of income
- b. Economic and strategic determinants of ROA and ROE
- c. Benefits and limitations of financial ratios

#### 4. Risk Analysis

- a. Short term liquidity risk
- b. Long term solvency risk
- c. Credit risk
- d. Bankruptcy risk

**5. Business Analysis: Understanding Cash flow Statements**

- a. Income flows versus cash flows
- b. Relationship between net income, balance sheets and cash flows
- c. Financing Activities
- d. Investing Activities
- e. Operating Activities

**6. Business Valuation**

- a. Cash – Flow Based Approaches
- b. Earnings – Based Approaches
- c. Market – Based Approaches

**IV. Course Materials**

Robinson, T. R., Henry, E., Pirie, W. L., & Broihahn, M. A. (2015). *International financial statement analysis*. (3rd ed.). John Wiley & Sons.

Wahlen, J. M., Baginski, S. P., & Bradshaw, M. T. (2015). *Financial reporting, financial statement analysis and valuation*. Cengage.



## Electives

**Course Code: 22PBA4105 | Title : Personal Finance | Credits : 1.5**

### I. Course Description

Personal Finance course designed to help students to understand the issues involved in planning finances and investments at a personal level, and to be in a position to provide advice on the issues. The course covers the basic principles needed for effective personal finance management, including the practical applications of money management, budgeting, taxes, credit, insurance, housing, investments, and retirement planning.

### II. Course Outcomes

At the completion of this course, the students will be able to:

1. Understand one's own Financial planning.
2. Understand the computation of Personal Income Tax and filing of return.
3. Analyze the risk and return involved in savings and investment.
4. Design the best method of savings and investment for the future.

### IV. Course Content

#### 1. Financial Planning

- a. Financial Planning
- b. Steps in Financial Planning
- c. Personal Budget

#### 2. Risk and Return

- a. Risk and Return
- b. Annuity and Power of Compounding
- c. Capital Gains on Personal Investment

#### 3. Personal Income Tax

- a. Tax Planning: Concepts and Strategies
- b. Filing of Return
- c. E Filing

#### 4. Investment Avenues

- a. Personal savings and Investment
- b. Savings instruments of Post Office and Banks
- c. Chit Funds
- d. Investment in debentures, equity, corporate and Government Bonds

## **5. Retirement and Risk Management Planning**

- a. Retirement Plan
- b. Pension Plan
- c. Public provident Fund
- d. Gratuity
- e. Life Insurance Plan

## **V. Course Materials**

### **a. Mandatory**

Madura, J. (2010). *Personal finance*. (7th ed.). Pearson Education.

### **b. Additional**

Mittra, S., Rai, S.K., Sahu, A.P. Starn, H. (2015). *Financial planning - Theory and practice*. (1st ed.). SAGE Publishing.

Sinha, M. (2016). *Financial planning*. (2nd ed.). McGraw Hill Education (India) Private Limited.

Pandit. (2014). *The only financial planning book*. Network 18 Publications Ltd.

Kapoor, J.R., Dlabay, L.R. & Hughes, R.J. (2004). *Personal finance* (9th ed.). Tata McGraw Hill Publishing Company Ltd.



## Electives

**Course Code: 22PBA4106 | Title: Enterprise Risk Management | Credits: 1.5**

### I. Course Description

This course has been designed with an objective to familiarize students with key aspects of Enterprise Risk Management. It will equip the students to understand the purpose of risk management in organizations' and the systematic application of policies, procedures and practices.

### II. Course Outcome

**By the end of this course a student will be able to:**

1. Understand the functioning of securities market.
2. Learn the application of tradeoff between risk and return.
3. Demonstrate the understanding of the fundamentals of economy, industry and company.
4. Demonstrate the ability to do fundamental and technical analysis of the securities.
5. Understand the theories of securities market.

### III. Course Content

#### 1. Introduction to Risk Management Principles

- a. Introduction: Risk Management
- b. Risk: Appetite, Tolerance, components of risk
- c. Severity Matrix
- d. Reasoning about Probability, Uncertainty and Likelihood
- e. Recent trends and products in Mutual Funds

#### 2. Stages in Risk Management

- a. Risk Identification, Assessment & Mitigation
- b. Risk Monitoring & Review
- c. Risk Controls & residual risk
- d. Risk Register

#### 3. Risk Governance and Culture

- a. Risk and organizational Culture
- b. Measuring and Managing Risk Culture
- c. Role of the Board of Directors and Chief Risk officer
- d. COSO framework

#### **IV. Course Materials**

##### **a. Mandatory**

Lam, J. (2014). *Enterprise risk management: From incentives to controls*. Wiley.

# Marketing

## Electives

Semester IV



## Electives

**Course Code : 22PBA4201 | Title: Sales and Distribution Management | Credits: 3**

### I. Course Description

The course aims to familiarize the student with selling concepts and a broad framework which helps in developing a sound sales policy; organize and manage sales force; and develop a robust organization. Another key objective of the course is to make the students acquire sufficient understanding on marketing channels and enable them to develop a strong distribution system for companies.

### II. Course Outcome

**At the end of the course, the students will**

1. Acquire professional and ethical selling skills.
2. Develop a strong sales organization.
3. Design innovative and realistic selling strategies across sectors.
4. Create a robust distribution model/s which includes profitability metrics and others.

### III. Course Content

#### 1. Sales fundamentals

- a. Marketing P's revisited.
- b. Marketing versus Selling
- c. Sales and Distribution connect.

#### 2. Sales Forecasting

- a. Techniques
- b. Choosing the right technique for forecasting
- c. Sales Forecasting - practical application using statistical tools

#### 3. Sales Administration

- a. Basic tenets of a sales organization
- b. Organizational designs - choosing the right one- sales specific
- c. Recruitment, training, motivation and sales costs.

#### 4. Distribution Management

- a. Direct versus indirect models
- b. Distribution structure in vogue- analysis

- c. Linking marketing and financials of channel partners for improving turnover and profitability

#### **IV. Course Materials**

- a. Mandatory**

- Havaldar, K. (2011). *Sales and distribution management*. (4th ed.). McGraw Hill Education (India) Ltd.

- b. Additional**

- Anderson, P. K. (2017). *HBR's must reads on sales*. Harvard Business Review.



## Electives

**Course Code: 22PBA4202 | Title: Retail Management | Credits : 3**

### I. Course Description

The course provides the students a comprehensive view of retailing environment in India and exposes the students to current issues and developments in the industry. It deals with the retail environment, retail strategy, shopper behavior, store location, merchandising, store operations, pricing, promotion and emerging technologies in retail.

### II. Course Outcome

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

1. Understand retailing and retail formats
2. Analyze the factors influencing shopper behavior and base them for retail communications.
3. Analyze the factors affecting location decisions
4. Learn and acquire skills in merchandise management and store operations.
5. Learn and acquire skills for stores management in total including drafting of pricing and supply

### III. Course Content

#### 1. Introduction to Retail Management

- a. Retailing - Indian Retail Industry and Economy
- b. Functions and Activities of Retailers/Evolution of Retailing in India
- c. Trends in Retail Formats
- d. Retail Strategy
- e. Changing Face of Retailing
- f. Challenges for Retailers and Drivers of Retail Success in India

#### 2. Understanding the Retail Consumer

- a. Factors Affecting Shopper Behavior
- b. Stages of the Shopper's Decision-Making Process
- c. Influence of Situational Variables on Shopping Behavior
- d. Research and Analysis of Consumer Profiles
- e. Retail Market Segmentation, Targeting and Positioning

### **3. Retail Site Selection**

- a. Retail Location Strategy
- b. Factors Affecting Location Decision
- c. Types of Retail Locations
- d. Trade Area Analysis and Site Selection Analysis
- e. Mall Management
- f. Methods of Retail Expansion

### **4. Merchandising and Store Operations**

- a. Merchandise Planning and Procurement
- b. Category Management
- c. Retail Branding
- d. Private Labels
- e. Store Design, Layout and Visual Merchandising
- f. Store Operations and Financial Aspects of Retail

### **5. Retail Pricing, Promotion and Technologies**

- a. Retail Pricing
- b. Selection of Promotion Mix in Retail
- c. Supply Chain and Competitive advantage
- d. Electronic Data Interchange
- e. Vendor Managed Inventory
- f. Continuous Planning, Forecasting and Replenishment
- g. Emerging Retail Technologies

## **IV. Course Materials**

### **a. Mandatory**

Pradhan, S. (2020). *Retailing management*. (6th ed.). McGraw Hill Education (India) Private Limited.

### **b. Additional**

Bajaj, C., Tuli, R., & Srivastava, V.N. (2016). *Retailing management*. (6th ed.). Oxford University Press.

Levy, M., Weitz, B., & Pandit, A. (2012). *Retailing management*. (8th ed.). McGraw Hill Education (India) Private Limited.



## Electives

**Course Code: 22PBA4203 | Title: Marketing Analytics | Credits: 3**

### I. Course Description

This course is framed to provide students adequate knowledge in about Marketing Analytics, in a highly complex and competitive environment. The students will have an exposure about various data related to customers, suppliers and other stake holders which is important to take predictive decisions in the broad field of marketing.

### II. Course Outcome

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

1. Understand about the strategic decision making during the complex situation.
2. Have the ability to forecast sales and decide profit maximizing strategies.
3. Understand the importance of data and its vital role to take right decision.
4. Determine Lifetime Customer Value.

### III. Course Content

#### 1. Introduction to Marketing Analytics

- a. Types of Data
- b. Decision Making
- c. Charts to summarize marketing data
- d. Descriptive, Predictive and Prescriptive data analytics

#### 2. Statistics

- a. Data Visualization techniques
- b. Linear Regression Models
- c. Application of Linear Regression in sales data – Laboratory
- d. Cluster Analysis

#### 3. Revenue Management & Pricing

- a. Point of Sale Data
- b. Right Pricing Approach
- c. Pricing Plans

#### 4. Market Segmentation and Customer Value

- a. Market Segmentation using Analytics
- b. Net Promoter Score
- c. Calculation of Lifetime Customer Value

#### **5. Retailing, Advertising and Social Media**

- a. Market Basket Analysis and Lift
- b. Measuring advertisement effectiveness
- c. Media Selection Models

#### **IV. Course Materials**

##### **a. Mandatory**

Gupta, S. & Jathar, A. (2021). *Marketing analytics*. Wiley India Pvt. Ltd.

##### **b. Additional**

Grigsby, M. (2015). *Marketing analytics*. Kogan Page Limited.



## Electives

**Course Code: 22PBA4204 | Title: International Marketing | Credits: 3**

### I. Course Description

The course is intended to give the students adequate knowledge in international marketing of goods and services. It enables to differentiate domestic V/s international marketing and the opportunities and challenges in international marketing. Starting with evaluation of macro and micro environmental factors for international market entries, strategizing and implementing will be the key areas of the course.

### II. Course Outcome

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

1. Understand domestic and international marketing –the strategic differences.
2. Analyze the benefits of entering in different international markets.
3. Explore the possibilities of product launches, pricing, communication and other promotional efforts.
4. Have an overall understanding of entering into international markets.

### III. Course Content

#### 1. Introduction to International Marketing

- a. Scope and advantages for firms to go international
- b. Customer values – value equation in different international markets - International Marketing Environment
- c. Management Orientation –MNC's, TNC's etc.,
- d. Challenges in International Marketing

#### 2. International Trade Environment

- a. WTO agreements
- b. Specific implication of WTO agreements on International marketing by Indian firms

#### 3. International Market Entry Strategies

- a. Different entry modes and strategies – basics of what and why
- b. Joint Ventures
- c. Direct Investment
- d. Strategic Alliances

#### **4. International Product Planning and Logistics.**

- a. Adoption and Standardisation
- b. International Market Segmentation, Targeting and Positioning – for product and services
- c. Distribution and Logistics plan - transportation and international packaging practices.
- d. Ethical and legal issues in international marketing.

#### **IV. Course Materials**

##### **a. Mandatory**

Cateora P.R., Gilly, M.C., & Graham, J.L. (2010). *International marketing* (15th ed.). McGraw-Hill Education.

##### **b. Additional**

Warren, K.J. & Mark, G.C. (2017). *Global marketing*. (9th ed.). Pearson Education.



## Core Courses

**Course Code: 22PBA4205 | Title: Rural Marketing | Credits: 1.5**

### I. Course Description

This course, designed for Rural marketing, will enable students to have new outlook towards marketing. The students will revisit the basic concepts in marketing but consciously apply them to Rural Marketing segment.

### II. Course Outcome

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

1. Understand the rural market environment
2. Understand and estimate Rural markets.
3. Develop marketing strategies specific to Rural markets.

### III. Course Content

#### 1. Indian Rural Markets

- a. Rural India: A Brief Profile
- b. Market Segmentation
- c. Consumer Behaviour
- d. Challenges and Opportunities

#### 2. Product and Pricing Strategies for Rural Markets

- a. Marketing Mix
- b. Product Strategies for Rural Market
- c. Pricing Strategies for Rural Market

#### 3. Promotion and Distribution Strategies for Rural Markets

- a. Designing right promotion mix
- b. Promotional campaigns
- c. Distribution and Logistics Management
- d. New approaches to reach out rural markets

#### **IV. Course Materials**

##### **a. Mandatory**

Kashyap, P. (2016). *Rural marketing*. (3rd ed.). Pearson Publication.

##### **b. Additional**

Prahalad, C. (2006). *The fortune at the bottom of the pyramid*. Pearson Education Inc.

Dogra, B., & Ghuman, K. (2008). *Rural marketing: Concepts and practices*. Tata McGraw-Hill Publishing Company Limited.



## Electives

**Course Code: 22PBA4206 | Title : Direct to Consumer Marketing | Credits: 1.5**

### I. Course Description

The students will learn the A – Z of Direct to Consumer. The course aims to discover the key issues and challenges in a Digital - Physical perspective and design a D to C model in major sectors.

### II. Course Outcome

At the end of the course, students will

1. Create a strong D to C brand that can pull consumers out of the regular stores/brands.
2. Understand key intangibles such as customer's community, influencers etc. that are specific for a D to C Brand.
3. Build D to C strategies that can foster enduring customers' relationship through a data driven approach.

### III. Course Content

#### 1. Understanding D to C

- a. Growth levers for D to C – issues, challenges and opportunities
- b. Key growth drivers- technology, culture and economics
- c. D to C – sectors and growth paradigm

#### 2. Brand Development & Launches

- a. Identifying white space- using consumer research tools to define/redefine products/ Brands
- b. Define Brand/s DNA and identity
- c. Building emotional connections with customers through story telling.
- d. Develop digital Go to market (GTM) strategies

#### 3. Online Market operations

- a. Understand how different geographies and market works.
- b. Use of platform advertisements, delivery timelines, optimizing listing through proper understanding of all costs
- c. Measuring platform level profitability

**4. Performance advertising and Organic customer acquisition**

- a. Driving paid traffic – Advanced creative optimization, media planning and targeting
- b. Converting site traffic – landing page optimization, conversion tracking and lead management
- c. Planning content strategies to drive consumer via social, email, word of mouth, public relations and Search Engine Optimization

**5. Optimizing purchase experience retention strategy**

- a. Driving repeats & cross ordering.
- b. Identifying payback periods and customer life time value.
- c. Scaling delivery, managing returns and managing logistics.

**IV. Course Materials**

**a. Mandatory**

Stevens, M. (2022). *The direct to consumer playbook: the stories and strategies of brands that wrote the D to C rules*. (1st ed.). Kogan Page.

Godin, S. (2012). *Meatball sundae: Is your marketing out of sync?*. Portfolio.

Bird, D. (2007). *Commonsense direct and digital marketing*. (5th ed.). Kogan Page.

Spiller, L. (2020). *Direct, digital and data-driven marketing*. (5th ed.). SAGE Publications Ltd.

# HR

## Electives

Semester IV



## Electives

**Course Code : 22PBA4301 | Title: Performance and Compensation Management | Credits: 3**

### I. Course Description

This course familiarizes the students with performance management process and components of compensation system followed in different institutions.

### II. Course Outcomes

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

1. Understand the performance management system.
2. Analyse the various performance metrics.
3. Evaluate the different performance measurements.
4. Evaluate and Illustrate the compensation structure and differentials.
5. Develop the compensation program by taking into account of the company environment.

### III. Course Content

#### I. Performance Management

- a. Performance Management as a system
- b. Performance Domains, Dimensions, Role Analysis
- c. Evaluating Performance Management

#### 2. Performance Management (PM) Process and System

- a. PM planning & process
- b. Key performance indicators (KPI)/Metrics
- c. Performance Management system
- d. Measuring results and behaviour
- e. Performance accounting and audit
- f. Ethical and legal issues of PM

#### 3. Performance measurements

- a. Appraisal Forms and Formats
- b. Appraisal Communication, Appraisal Interview, Feedback and Counselling
- c. Errors in appraisal, and reduction of errors
- d. Balance score card
- e. HR score card
- f. Employee Net Promoter Score (ENPS)

#### **4. Compensation management**

- a. Introduction to Compensation and Rewards
- b. Objective of Compensation and Rewards
- c. Framework of Compensation Policy
- d. Labour market characteristics

#### **5. Wage Incentives**

- a. Wage Incentives in India
- b. Cafeteria Style of Compensation
- c. ESOP (Employee Stock Option Plan)
- d. Executive compensation
- e. Fringe Benefits
- f. Tax Planning

### **IV. Course Materials**

#### **a. Mandatory**

Bhattacharyya, D. K. (2011). *Performance management systems and strategies*. Pearson Publications.

Milkovich, G. T., Newman, J.M. & Gerhart, B. (2011). *Compensation*. (10th ed.). Tata McGraw-Hill Education.

#### **b. Additional**

Agunis, H. (2016). *Performance management*. (3rd ed.). Pearson Publications.

Goel, D. (2009). *Performance appraisal and compensation management: A modern approach*. PHI Learning Pvt. Ltd.



## Electives

**Course Code: 22PBA4302 | Title: Organizational Change & Development | Credits: 3**

### I. Course Description

This course imparts students the concepts of organizational change & development and makes them familiar with the process of Organizational Development interventions.

### II. Course Outcomes

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

1. Understand the need for change and the importance of developing skills to facilitate organizational changes.
2. Develop comprehensive understanding of OD concepts
3. Learn the values and theories of OD.
4. Evaluate the role of HR practitioner and key competencies.
5. Analyse and administer suitable OD interventions

### III. Course Content

#### 1. Organisational Change

- a. Nature of change- Internal & External changes
- b. Types of change
- c. Models of change
- d. Resistance to change

#### 2. Organization development

- a. History of OD
- b. Values, assumption and beliefs of OD
- c. Models and theories of OD
- d. Foundations of OD

#### 3. OD Practice

- a. OD practitioner qualities
- b. OD competencies

#### 4. The Process of Organization Development

- a. Entering and Contracting
- b. Diagnosing
- c. Collecting, Analyzing, and Feeding Back Diagnostic Information
- d. Designing Interventions

## 5. OD Interventions

- a. Human Process Interventions
- b. Techno-structural Interventions
- c. Human Resource Interventions
- d. Strategic Change Interventions
- e. Organisational Transformation

## IV. Course Materials

### a. Mandatory

Cummings, T.G. & Worli, C G. (2015). *Organization development and change*. Cengage Learning.

### b. Additional

French, W., Bell, C.H. & Veena, Jr. (2012). *Organizational development - Behavioural science interventions for organization improvement*. PHI.

Jones, G.R. (2012). *Organizational theory, design, and change*. Pearson Education.

Sharma, R.R. (2012). *Change management - Concepts and applications*. Tata McGraw Hill.



## Elective

**Course Code: 22PBA4303 | Title : Labour Codes II | Credits : 3**

### I. Course Description

This course provides a strong framework along with knowledge and understanding of the new labour legislations in India. The Code on Social Security and the Code on Wages is discussed as part of this course. The students understand the application of laws from a managerial perspective. The purpose is to provide an exposure to the students into the labour law administration.

### II. Course Outcomes

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

1. Understand the changes in the new social security and wage codes.
2. Learn to compare and classify the various types of wages, the payment of bonus, gratuity etc. from a legal perspective.
3. Understand the relevance of social security measures as an employer.
4. Learn and apply the provisions of Provident fund, insurance and other employer obligations.
5. Develop models for social security measures for the gig workers.

### III. Course Content

#### 1. The Code on Wages

- a. Definitions
- b. Minimum Wages
- c. Components of Minimum Wages
- d. Fixing Working Hours
- e. Fixing Floor Wages
- f. Wages for Overtime work

#### 2. The Code on Wages

- a. Payment of Wages
- b. Role of Advisory Board
- c. Deductions
- d. Payment of Bonus
- e. Payment of Dues, Claims and Audit
- f. Offences and Penalties

### **3. The Code on Social Security**

- a. Social Security Organisations
- b. Employees' Provident Fund
- c. Schemes and Contributions
- d. Employees State Insurance Corporation
- e. State Insurance Fund
- f. Benefits
- g. Payment of Gratuity

### **4. The Code on Social Security**

- a. Payment of Maternity Benefit
- b. Medical bonus
- c. Creche Facility
- d. Employees' Compensation
- e. Claim and Distribution of Compensation
- f. Social Security and Cess for Construction workers
- g. Social security for Unorganised, Gig and Platform workers
- h. Prevention of Sexual Harassment at the Workplace

## **IV. Course Materials**

### **a. Mandatory**

*The code on wages.* (2020).

*The code on social security.* (2020).

### **b. Additional**

Sinha, P.N.R. (2021). *Industrial relations, trade unions and labour legislations.* (3rd ed.). Pearson.



## Electives

**Course Code : 22PBA4304 | Title : Cross Cultural Management | Credits: 3**

### I. Course Description

This course provides an understanding of culture and management and also helps to develop the attitudes and behaviors desirable in an international environment. It offers a broad view of classic and contemporary thinking on cultural management and encourages the students to apply the same.

### II. Course Outcomes

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

1. Understand the link between culture and management.
2. Learn the effect of culture on the management of business.
3. Evaluate and administer different methods by which cross-cultural effectiveness can be developed.
4. Learn the cultural diversity from an international business context.
5. Evaluate cross cultural differences.

### III. Course Content

#### 1. Introduction to culture

- a. Importance of culture
- b. Cultural differences
- c. The historical origins of beliefs and values
- d. Communicating across cultures
- e. Cultural Identity
- f. The Culture of Industrial Civilization

#### 2. Cultural diversity and multicultural teams

- a. Measuring cultural development
- b. Culture and ethics- Kohlberg
- c. Malcolm X- Relativism vs Development
- d. Respect cultural differences
- e. Stages of development

#### 3. International Differences

- a. Gender differences
- b. International Sub Culture- Gender
- c. Multi ethnicity- religion- geography
- d. Hofstede's dimensions- Cultural mapping
- e. National cultures vs. organizational cultures

#### **4. Economic development and professional cultures**

- a. Organizational cultures
- b. Knowledge cultures
- c. Change in corporate culture
- d. Mergers and Acquisitions

#### **5. Managing cross-culture**

- a. Cross cultural effectiveness
- b. Managing global managers
- c. Conflict and Synergy
- d. Measuring cultural differences

#### **IV. Course Materials**

##### **a. Mandatory**

Thomas, D. (2008). *Cross - cultural management: Essential concepts*. (2nd ed.). SAGE Publications.

##### **b. Additional**

Browaeys, M. & Price, R. (2010). *Understanding cross- cultural management*. Pearson Publications.

Gannon, M. (2008). *Paradoxes of culture and globalisation*. SAGE Publications.



## Electives

**Course Code : 22PBA4305 | Title : Negotiation Management | Credits: 1.5**

### I. Course Description

This course enables the students to learn the practical negotiation techniques and strategies. It also focuses on the principles, the preparation and the practice of negotiating skills which combines theory with practical activities and scenarios.

### II. Course Outcomes

At the end of the course the student will be able to:

1. Understand the concept and process of negotiation
2. Learn how to communicate persuasively using power and persuasion tools.  
Analyse the strategic elements of negotiation in dispute resolution
3. Apply techniques of negotiation management.
4. Draft a negotiation agreement

### III. Course Content

#### 1. Introduction to Negotiation

- a. Concept, Elements & Multiparty Negotiations
- b. Negotiation process
- c. Distributive bargaining
- d. Integrative bargaining

#### 2. Negotiation Strategy

- a. Power and best alternative to negotiation and agreement (BATNA)
- b. Zone of Possible Agreement (ZOPA)
- c. Key Strategy elements
- d. Impasse and Alternative Dispute Resolution

#### 3. The Negotiation Process

- a. Ethics, Fairness and Trust in negotiation
- b. Influence of culture and gender
- c. Creativity and Value creation
- d. Agreement template
- e. Moving past stalemate
- f. Building relationship

#### **IV. Course Materials**

##### **a. Mandatory**

Lewicki, R.J., Saunders, D.M., & Barry, B. (2020). *Essentials of negotiation*. McGraw Hill.

##### **b. Additional**

Carrell, M. R. & Heavrerin, C.J.D. (2008). *Negotiating essentials: Theory, skills and practice*. Pearson Publications.



## Electives

**Course Code : 22PBA4306 | Title: Talent Management | Credits: 1.5**

### **I. Course Description**

It gives an overview to the organization's commitment to recruit, hire, retain, and develop the most talented and superior employees available in the job market. It describes how a human resource professional can manage the ability, competency and power of employees within an organization.

### **II. Course Outcomes**

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

1. Understand the method of developing talent through knowledge, skills, competencies and strategies
2. Understand the talent integration, knowledge management and retention programs for the long term organizational commitment of employees
3. Analyze the various stages in talent life cycle
4. Learn the basic concepts in global talent management, managing diverse talents and insight into cultural intelligence

### **III. Course Content**

#### **1. Talent Management-Focus on Excellence**

- a. Strategy
- b. Knowledge, Values & Beliefs
- c. Modeling Excellence
- d. Skills
- e. Competencies

#### **2. Talent Integration and Succession Planning**

- a. Cultural Fit
- b. Induction programs
- c. Knowledge Management & Creation
- d. Leadership
- e. Succession Planning
- f. Retention Programs

### **3. Talent Life Cycle**

- a. Job Crafting
- b. Workforce Quality
- c. Assessment and Evaluation
- d. Talent Cycle
- e. Rewards and Recognition
- f. Return on Investment
- g. Job EQ Tools

### **IV. Course Materials**

#### **a. Mandatory**

Merlevede, P. (2013). *Talent management: A focus on excellence managing human resources in a knowledge economy*. Bookboon e-publishing company.

#### **b. Additional**

Ariss, A.A. (2014). *Global talent management: Challenges, strategies, and opportunities*. Springer Publications.

Shukla, R. (2009). *Talent management: Process of developing and integrating skilled workers*. Global India Publications.

# IT & Analytics

## Electives

Semester IV



## Electives

**Course Code: 22PBA4401 | Title : Deep Learning and Artificial Intelligence | Credits:3**

### I. Course Description

This course is intended to give a holistic understanding on Deep Learning and Artificial Intelligence and its applications. This course trains the students to basic of neural networks, convolutional neural networks, long and short-term memory networks.

### II. Course Outcomes

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

1. Understand the basics of Neural Network and their platforms.
2. Apply the various deep learning libraries to solve the problem.
3. Examine the different architectures of Artificial neural networks.
4. Demonstrate the program to use reinforcement and Convolutional Neural Networks.
5. Understand the Artificial Intelligent Systems and review their applications.

### III. Course Content

#### 1. Deep Learning

- a. Deep learning architectures
- b. Biological neural network
- c. Artificial neural Networks
- d. Perceptron
- e. Deep Neural network
- f. Recurrent Nets, Auto Encoders

#### 2. Platform and Libraries

- a. H2O.ai
- b. Dato Graph Lab
- c. Tensorflow
- d. Theano, Deeplearning4j
- e. Torch, Caffe

#### 3. Architecture of Artificial Neural Networks

- a. Recurrent Neural networks
- b. Memory Augmented Neural Networks
- c. Differentiable Neural Computers

#### **4. Reinforcement and Convolution Learning**

- a. Markov Decision Processes
- b. Boltzmann Machine
- c. DeepQ-Networks
- d. Multiple Layer Perceptron
- e. Markov Chain Monte Carlo Methods
- f. Convolution Operations

#### **5. Artificial Intelligence**

- a. Application Areas
- b. Cognitive Computing (Perception, Learning, Reasoning)
- c. Non-AI & AI Techniques
- d. Intelligent Agents and Environments
- e. Concept of rationality, the
- f. Nature of environments
- g. Structure of agents
- h. Problem solving agents
- i. Search Algorithms

### **IV. Course Materials**

#### **a. Mandatory**

Buduma, N., & Locascio, N. (2017). *Fundamentals of deep learning: Designing next-generation machine intelligence algorithms*. (1st ed.). O'Reilly Media.

Tom, T. (2019). *Artificial intelligence basics: A non-technical introduction*. A Press.

#### **b. Additional**

Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning (adaptive computation and machine learning series)*. MIT Press.

Russell, S., & Narvig, P. (2015). *Artificial intelligence - Modern approach*. (3rd ed.). Pearson Education.



## Electives

**Course Code: 22PBA4402 | Title : Digital Analytics | Credits: 3**

### I. Course Description

The course gives the knowledge on digital analytics, social network analytics and search engine optimization. It also deals the applications of digital analytics.

### II. Course Outcomes

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

1. Understand the concepts of Digital Analytics
2. Learn and apply the various techniques of Social Network Analytics
3. Learn and apply the techniques of stream Analytics
4. Demonstrate the various techniques of search engine optimization to solve the problem
5. Review the latest applications of Digital Analytics

### III. Course Content

#### 1. Digital Analytics

- a. Types of digital analytics
- b. Social Listening frame work
- c. Social Intelligence

#### 2. Social Network Analytics

- a. Social network communities
- b. User generated communities
- c. Social Media Analytics
- d. Content and Theme Analysis

#### 3. Stream Analytics

- a. Click Stream Analytics
- b. Click Density Analytics
- c. Pay per click Analytics
- d. Web Log file Analysis

#### 4. Search Engine Optimization

- a. Keyword Search
- b. On page SEO audit
- c. Link analysis
- d. Search Engine Marketing Analytics
- e. Email Campaign

f. Social Media Market Analytics

**5. Application of Digital Analytics**

- a. Google Analytics
- b. LinkedIn Analytics
- c. Twitter Analytics
- d. Retail and sales analytics
- e. Digital Analytics stack
- f. Health services

**IV. Course Materials**

**a. Mandatory**

Clifton, B. (2012). *Advanced web metrics with google analytics*. (3rd ed.). Wiley India.

**b. Additional**

Kaushik, A. (2013). *Web analytics 2.0*. (1st ed.). Sybex.

Gnais, M., Avinash, K. (2015). *Social media analytics: Techniques and insights for extracting business value out of social media*. IBM Press.



## Electives

**Course Code: 22PBA4403 | Title: Block Chain and Business Applications | Credits: 3**

### I. Course Description

This course gives an introduction of Block Chain Technology and its applications. This course deals the basic of bitcoin transactions in the cryptocurrency

### II. Course Outcomes

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

1. Understand the basics of Distributed systems
2. Learn the basic of Block chain Technology and its types
3. Learn and use Cryptocurrency systems
4. Learn and use the different Ethereum Tools for transactions
5. Review the Block chain applications and its development

### III. Course Content

#### 1. Introduction

- a. Distributed Systems
- b. Distributed Hash Table
- c. Block, Miner, Block reward
- d. Centralized and decentralizes system
- e. Types of block chain

#### 2. Cryptocurrency

- a. Types of Cryptocurrency and Cryptography
- b. Block Chain Works
- c. Hash Encryptions
- d. Digital Signature
- e. Memory Hard Algorithm
- f. Bitcoin, Bitcoin Wallet and Bitcoin Exchange
- g. Merkle Tree

#### 3. Ethereum Tools

- a. Ethereum node
- b. Tokens, Proofs
- c. Ethereum Tools
- d. Ethereum transactions

#### **4. Practical and Block Chain Applications**

- a. Distributed ledger technology
- b. Smart contracts
- c. Hyperledger Fabric – Transaction Flow
- d. Immutable records
- e. Block Chain Applications
- f. New Development of Block chain applications

#### **IV. Course Materials**

##### **a. Mandatory**

Antony, L. (2018). *The basics of bitcoins and blockchains: An introduction*. Mango Publishing Group.

Saurabh, K. & Saxena, A. (2020). *Blockchain technology: Concepts and applications*. Wiley India.

##### **b. Additional**

Antonopoulos, A.M. (2017). *Mastering bitcoin*. (2nd ed.). O'Reilly Media.

Danial, K. (2019). *Cryptocurrency investing for dummies*. Wiley India.



## Electives

**Course Code : 22PBA4404 | Title : Cyber Security | Credits: 3**

### I. Course Description

This course introduces the students to understand the concept of cyber security and help them to identify the security threats, types and models. The students will be able to identify the network security models and their applications.

### II. Course Outcomes

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

1. Learn the basics in Cybersecurity.
2. Learn the concept of cryptography and network security.
3. Understand the concept of host and application security.
4. Apply different techniques to solve cyber security threats.
5. Review the importance of Policy and cyber security awareness

### III. Course Content

#### 1. Cyber Security Awareness

- a. NSTISSC
- b. Information assurance
- c. Security Threats and vulnerabilities
- d. Security Standards
- e. OSI Security Architecture

#### 2. Cryptography and Network security

- a. Symmetric and Asymmetric Cryptography
- b. Modern Cryptography
- c. Intrusion Prevention
- d. Detection and Management
- e. Firewall, Computer Forensics
- f. Security for VPN and Next Generation Networks.

#### 3. Host and Application security

- a. Control hijacking
- b. Software architecture and a simple buffer overflow
- c. Side-channel attacks
- d. Mobile, GSM and Wireless LAN security
- e. Malware - Viruses and worms

#### **4. Policy and Security Awareness**

- a. National cyber security Policy
- b. Cyber Security Awareness

#### **IV. Course Materials**

##### **a. Mandatory**

Whitman, M.E., & Mattord, H.J. (2017). *Principles of information security*. (6th ed.). Vikas Publishing House.

##### **b. Additional**

Nelson, B., Phillips, A. & Steuart, C. (2018). *Guide to computer forensics and investigations*. (6th ed.). Cengage Learning.

Bishop, M. (2015). *Computer security: Art and science*. (1st ed.). Addison-Wesley Professional.



## Electives

**Course Code: 22PBA4405 | Title : Data Visualization | Credits: 1.5**

### I. Course Description

This course gives an overview of visualization tools and introduces the students to different visualization techniques in Business Analytics. The students will analyse and resolve business problems through the Power BI and Tableau tools.

### II. Course Outcomes

1. Understand the importance of data visualization
2. Apply techniques of data visualization in Power BI and Tableau
3. Analyse the business data using different data modelling in visualization tools
4. Create sample dashboard/s using visualization tools

### III. Course Content

#### 1. Power BI

- a. Architecture
- b. Supported data sources
- c. Data modelling
- d. Dashboard options
- e. Visualization
- f. Integration with Excel

#### 2. Tableau

- a. Menu
- b. Data Sources
- c. Extract data
- d. Data join and blending
- e. Worksheets with tableau
- f. Sorting and filtering
- g. Charts

#### 3. Dashboard

- a. Creating sample dashboard for business

#### **IV. Course Materials**

##### **a. Mandatory**

Powel, B. (2017). *Microsoft power BI cook book*. Packt Publishing.

Milliga, J. (2019). *Learning tableau 2019: Tools for business intelligence, data prep, and visualization analytics*. (3rd ed.). Packt Publishing.

##### **b. Additional**

Knight, D. Knight, B., Pearson, M., Quintana, M. & Powell, B. (2018). *Microsoft power BI complete reference*. Packt Publishing.

Murray, D.G. (2016). *Tableau your data!: Fast and easy visual analysis with tableau software*.(2nd ed.). John Wiley and Sons, Inc.



## Electives

**Course Code : 22PBA4406 | Title: Emerging Technologies | Credits: 1.5**

### I. Course Description

This course introduces the students to the comprehensive and in-depth knowledge of emerging technologies and its business usage.

### II. Course Outcomes

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

1. Understand the basic concept in IoTs and its applications.
2. Learn the basics of cloud computing.
3. Learn the basics of Fog and Edge Computing.
4. Learn the various intelligent tools for business transformation.

### III. Course Content

#### 1. Internet of Things

- a. IoT Strategic and Innovation
- b. IoT Applications
- c. IoT with Industry
- d. M2M and WSN Protocol
- e. Architecture for WoT
- f. Smart Cities, Smart Grid, Mobility and Transport

#### 2. Cloud Computing

- a. Basics of Fog and Edge Computing
- b. Introduction to Cloud Computing
- c. Types of Cloud Services
- d. Virtualization Architectures
- e. Cloud Vendors

#### 3. Intelligent Apps and Cognitive computing

- a. DevOps Architecture
- b. Business Apps
- c. STRIDE Threat Model
- d. 5G Technology
- e. Quantum Computing

#### **IV. Course Materials**

##### **a. Mandatory**

Kumar, P., Tomar, A. & Sharmila, R. (2022). *Emerging technologies in computing: Theory, practice, and advances*. (1st ed.). CRC Press.

##### **b. Additional**

Anderson, J. M., Khan, F. A. (2021). *Digital transformation using emerging technologies: A CxO's guide to transform your organization*. Amazon Digital Services LLC - KDP Print US.

# Supply Chain Management

## Electives

Semester IV



## Electives

**Course Code: 22PBA4501 | Title: Global Supply Chain Management | Credits: 3**

### I. Course Description

The development of international trade is driven by international logistics and management and the provision of the global supply chain. The ultimate objective of global supply chain management is to link the marketplace, distribution network, manufacturing/processing/assembly process, and procurement activity in such a way that customers are serviced at a higher level yet lower cost. Overall, this has introduced a new breed of management in a computer literate environment operating in global infrastructure.

### II. Course Outcome

1. Understand the principles and concepts of supply chain management from a global business perspective.
2. Understand and evaluate the production/service process in a global context.
3. Learn and evaluate the distribution network process in a global context.
4. Understand and apply the models related to supply chain management.

### III. Course Content

#### 1. Introduction to global supply chain management

- a. Role of the Supply Chain
- b. Managing the Supply Pipeline for Global Trade Flows
- c. The Global Logistics Operator
- d. Comparison Between National and International Logistics
- e. Globalization and International Trade Environment.

#### 2. Factors and Challenges Driving Logistics and Supply Chain Management

- a. Factors Driving Global Supply Chain Management
- b. Customs and Global Supply Chain Management
- c. Management of the Inventory in the Supply Chain
- d. Analysis Including Vendor Management
- e. Evolution and Revolution of Logistics and Supply Chain Management
- f. Modern Logistics Concepts

#### 3. Constituents of the International Procurement

- a. Introduction
- b. International Purchasing Systems Strategy
- c. Financing Global Supply Chain

**4. Selecting the International Logistics Operator:**

- a. Criteria of Selecting the Third-Party Logistics Operator
- b. Contract Logistics
- c. Warehousing- Customs Clearance-
- d. Air Freight
- e. Shipment Procedures
- f. Dispatch Time Data
- g. Statutory Reporting
- h. Profitability Analysis

**IV. Course Materials**

**a. Mandatory**

Branch, A.E. (2009). Global supply chain management and international logistics. (1st ed.). Roulledge.



## Electives

**Course Code: 22PBA4502 | Title: Service Process Management | Credits: 3**

### I. Course Description

The course examines both traditional and new approaches in achieving operational competitiveness in service businesses. Major service sectors such as health care, repair/technical support services, banking, and financial services, transportation, restaurants, hotels, and resorts are examined from a service process standpoint throughout the course. The course addresses the strategic analysis conundrum and operational decision-making, with emphasis on the latter. Topics include the service concept and operations strategy, the design of effective service delivery systems, productivity and quality management, response time (queueing) analysis, capacity planning, yield management, and the impact of information technology.

### II. Course Outcome

1. Understand the entire service process management principles and practice.
2. Learn and apply service management process in different businesses.
3. Learn and apply the concepts that will improve service management process.
4. Evaluate the different cost areas in service management and control them.
5. Evaluate and improve customer satisfaction.

### III. Course Content

#### 1. Introduction to service operations

- a. The service concept, changing paradigms in the competitiveness of services
- b. Services – Manufacturing Continuum.

#### 2. Developing a Service Strategy

- a. Service Positioning
- b. Implications for service delivery design
- c. Service enhancement using the Internet
- d. Pricing strategies in services.

#### 3. Capacity Issues

- a. In service systems
- b. queueing theory applications in service operations

#### 4. The role of quality as a driver

- a. Customer satisfaction and delivery of service.
- b. Quality improvement methods
- c. Identifying customer expectations

**5. Performance Measurement and Management**

- a. Linking operations decisions to business
- b. Developing service strategy.

**IV. Course Materials**

**b. Mandatory**

Clark, G., Johnston, R. (2008). *Service operations management: Improving service delivery*. Financial Times/Prentice Hall.

**c. Additional**

Wright, J. N. (1999). *The management of service operations*. Cassell.



## Electives

**Course Code: 22PBA4503 | Title: Project Management | Credits: 3**

### I. Course Description

Project Management is the implementation of relevant skills, knowledge, and tools to achieve the goal set for a project. Project management is divided into 5 main phases, namely- Initiating, Planning, Executing, Performance Monitoring, and Closing of the project.

### II. Course Outcome

1. To give you the tools
2. to initiate a project plan
3. To manage both stakeholders and relationships
4. to develop a project charter
5. To build a business case for a project.

### III. Course Content

#### 1. Project Management Overview

- a. Managing Projects
- b. The Value of Project Management
- c. Challenging nature of Projects.
- d. Growing Demand for Effective Project Managers
- e. Trends in Project Management

#### 2. The Project Manager and Project

- a. Key Skills of Project Managers
- b. Qualities of Successful Project Managers
- c. Common Mistakes of Project Managers
- d. Project Definition Document

#### 3. Planning a Project

- a. Key Project Planning Principles
- b. Project Plan Checklist
- c. Managing the Risk, Managing the Estimates
- d. Powerful Estimating Techniques and Methods
- e. Key Inputs for Building a Schedule

#### **4. Determining the Project Budget and Controlling**

- a. Principles of an Effective Budget
- b. Creating a Project Budget
- c. Sources of Project Costs
- d. Developing an Initial Budget
- e. Finalizing a Budget
- f. Components of Project Control
- g. Powerful Techniques for Project Control
- h. Performance Reporting

#### **5. Managing Project Risks and Quality**

- a. Key Risk Management Principles
- b. The Essential Process for Managing Project Risks
- c. Risk Response Options
- d. Key Risk Management Tools
- e. Unique Aspects of Managing Project Quality

#### **IV. Course Materials**

##### **a. Mandatory**

Greg Horine, [2017], Project Management Absolute Beginner's Guide [4th ed.], Que Publishers, ISBN-9780134653914



## Electives

**Course Code: 22PBA4504 | Title: Python Programming | Credits: 3**

### V. Course Description

The course on Python will guide you to write programmes beginning with basic programming concepts and moving to functions, recursion, data structures, and object-oriented design.

### VI. Course Outcome

1. To understand why Python is a useful scripting language for developers.
2. To learn how to design and program Python applications.
3. To learn how to use lists, tuples, and dictionaries in Python programs.

### VII. Course Content

#### 1. Python Basics and Functions

Variables – Operators – statements – Getting in Puts – Boolean Conditions – Alternative, Chained and Nested Conditions – Catching Expectations – Function Calls – Built-in Functions – Type -Conversion Function and Math Function – creating New Functions, Parameters and Arguments – Need for Functions.

#### 2. Loops

While Statement – Infinite Loops – Continue Statement – For Loops – Counting and Summing Loops – Maximum and Minimum loops.

#### 3. Strings

Traversal through Strings – String Slice – looping and Counting in Strings – The in Operator – String Comparison – String Methods – Parsing Strings – Format Operator.

#### 4. Files

Opening Files – Text Files – Reading Files – Searching Through Files – Selecting Files Names from User – Writing Files.

#### 5. List - Traversing

List – List Operations – List Slice – List Methods – Deleting elements – Built – in List functions – Objects, Value, Aliasing – List Arguments.

## VIII. Course Materials

### b. Mandatory

Downey, A. B. (2015). Think python: How to think like a computer scientist. O'Reilly Media.



## Electives

**Course Code: 22PBA4505 | Title: TORA Package | Credits: 1.5**

### I. Course Description

TORA (Toolkit for Oracle) is a free software database development and administration GUI, available under the GNU General Public License. It features a PL/SQL debugger, an SQL worksheet with syntax highlighting, a database browser and a comprehensive set of database administration tools.

TORA software offers modules for matrix inversion, solution of simultaneous linear equations, linear programming, transportation models, network models, project planning with CPM and PERT, queuing analysis, and game theory. TORA can be executed in automated or tutorial mode.

### II. Course Outcome

1. Helps in solving many mathematical models.
2. Gives authentication to the user.
3. Helps in saving time for getting solution.

### III. Course Content

1. Introduction to TORA Software
2. Matrix Manipulations
3. Solving system of Linear Equations
4. Graphical Method to solve an LPP
5. Simplex method to solve an LPP
6. Big-M method to solve an LPP
7. Two-phase methods to solve an LPP
8. North West Corner Rule to solve a TP
9. Least Cost Method to solve a TP
10. Vogel's Approximation Method to solve a TP
11. Project planning using CPM
12. Project planning using PERT

### IV. Course Materials

#### a. Mandatory

TORA free software Manual

**b. Additional**

Mariappan, P. (2013). *Operations research – An introduction*. (1st ed.). , Pearson.



## Electives

**Course Code: 22PBA4506 | Title: Introduction to Data Envelopment Analysis | Credits: 1.5**

### I. Course Description

DEA is used to empirically measure productive efficiency of decision-making units (DMUs). Although DEA has a strong link to production theory in economics, the method is also used for benchmarking in operations management, whereby a set of measures is selected to benchmark the performance of manufacturing and service operations. In benchmarking, the efficient DMUs, as defined by DEA, may not necessarily form a “production frontier”, but rather lead to a “best-practice frontier.”

### II. Course Outcomes

1. To solve the Data Envelopment analysis
2. To create the authentication to the user.
3. Use to save the time for getting solution.

### III. Course Content

#### 1. Introduction

- a. Introduction to Data Envelopment Analysis
- b. Decision Making Units [DMUs] –
- c. Fundamental Concepts of Effective
- d. Fractional Programming Problem –
- e. Performance Based on single input and single output
- f. Performance Based on two input and a single output
- g. Strongly and Weakly Efficient DMUs

#### 2. Mathematical Modeling of DEA

- a. Procedural Application of DEA
- b. How to choose the DMUs for the study?
- c. Selection of the Inputs and Outputs
- d. Formulation of a Mathematical Structure of additive type

#### 3. CRS DEA and VRS DEA Models

- a. Constant Returns to Scale DEA Model [CRS DEA]
- b. Variable Returns to Scale DEA Model [VRS DEA]

## **V. Course Materials**

### **a. Mandatory**

Mariappan, P. (2016). *Introduction to Data Envelopment Analysis [DEA]*. LAP LAMBERT Academic Publishing.