



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

M.B.A. (Industrial Management)

SEMESTER II

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MBAIM201	DC	PROBABILITY & STATISTICS	4	0	0	4	60	20	20	-	-

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

This course would help students develop an understanding about the concepts of probability and statistical tools so that they can use these in researches and real life situations.

Course Outcomes:

After attending the course, the students will be able to

1. Use basic probability & statistical mathematical tools and techniques which emphasize the development of rigorous logical thinking and analytical skills.
2. Utilise the theory and applications of implementation of DOE and testing hypothesis Transformation.

Syllabus:

UNIT I: One Dimensional Random Variables

1. Random variables, Probability function
2. Moments, Moment generating functions and their properties
3. Binomial, Poisson, Exponential, and normal distributions
4. Functions of a Random variable.

UNIT II: Two Dimensional Random Variables

1. Joint distributions
2. Marginal and conditional distributions
3. Functions of two dimensional random variables
4. Curve fitting by Principle of least squares
5. Correlation and Regression.

UNIT III: Testing of Hypothesis

1. Tests of Significance
2. Large Sample Tests: Mean, Proportions



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3. Small Sample Tests: t, F, Chi-square Tests
4. Independence of Attributes, Goodness of Fit

UNIT IV: Design of Experiments

1. Analysis of Variance: One way classification, Two way classification
2. Design of Experiments – Completely Randomized Block Design – Randomized Block Design – Latin Square Design.

UNIT V: Basics Concepts of Reliability

1. Failure rate analysis
2. Reliability of systems - Series, Parallel
3. Maintenance - Preventive and corrective
4. Maintainability equation - Availability
5. Quality and Reliability.

References:

1. Gupta S.C., Kapoor V.K. (2007). *Fundamentals of Mathematical Statistics*. S.Chand & Co.
2. Richard Johnson A. (2009). *Miller & Freund's Probability and statistics for Engineers (Latest ed)*. Prentice Hall of India.
3. Richard Johnson A., Wichern .D.W. (2007). *Applied Multivariate Statistical Analysis (Latest ed)*. Prentice Hall of India
4. Soong T.T. (2004). *Fundamentals of Probability and Statistics for Engineers*. John Wiley & Sons



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MBAIM202	DC	FACILITIES PLANNING	4	0	0	4	60	20	20	-	-

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The objectives of this course are

1. To introduce of basic connects of facility layout and planning, employed in an industrial environment.
2. To help students comprehend relevant tools, techniques and methodologies as required for taking best-possible facility location decision, layout planning with material handling systems, storage and warehouses, facilities of a manufacturing or service organizations is the main purpose of introduction such a course for the students.

Course Outcomes:

After attending this course, the students will be able to

1. Apply the concepts and basic tools in facilities planning.
2. Focus on various strategies involved in plan location, layout design and material handling systems.

Syllabus:

UNIT I: Introduction

1. Nature of facilities planning problem
2. Significance of facilities planning
3. Objectives and scope of facility layout and design

UNIT II: Facility Location

1. Facility location analysis – factors, costs, location decisions
2. Single facility location models
3. Multi facility location models
4. Warehouse location problems



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UNIT III: Facility Layout

1. Significance, Objectives, Steps in layout planning
2. Quantitative techniques of layout planning
3. Design cycle – SLP procedure, nadler’s ideal approach, flow and activity analysis
4. Computerized layout planning procedure – ALDEP, CORELAP, CRAFT

UNIT IV: Group Technology and Line Balancing

1. Group technology – Production Flow analysis (PFA), ROC (Rank Order Clustering)
2. Line balancing, single, multi and mixed mode
3. Parallel line and parallel station

UNIT V: Materials Handling, Storage and Warehousing

1. Definition, principles of materials handling
2. Material handling system design – Systematic Handling Analysis.
3. Material handling equipment types, selection and specification, handling cost, containers and packaging
4. Objectives, principles and functions of stores and warehouse

References:

1. James Apple, M. (1977). *Plant layout and Material Handling*. John Wiley
2. Muther, R. and Haganas, K. (Latest Ed). *Systematic Handling Analysis*. Management & Industrial Research Publications
3. Muther, R. and Hales, L. (2015). *Systematic Layout Planning*. Management & Industrial Research Publications
4. Pannerselvam, R. (2007). *Production and Operations Management*. PHI
5. Richard Francis. L. and John A. White. (2002). *Facilities Layout and location - an analytical approach*. PHI
6. Tompkins, J.A. and J.A.White. (2003). *Facilities Planning*. John Wiley



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MBAIM203	DC	BUSINESS ANALYTICS	4	0	2	4	60	20	20	-	-

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The objectives of the course are to help students

1. Analyze data using statistical and data mining techniques and understand relationships between the underlying business processes of an organization.
2. Gain an understanding of how managers use business analytics to formulate and solve business problems and to support managerial decision making.
3. Use decision-making tools/Operations research techniques.

Course Outcomes:

After attending this course, the students will be able to

1. Demonstrate knowledge of data analytics.
2. Demonstrate the ability of think critically in making decisions based on data and deep analytics.
3. Demonstrate the ability to use technical skills in predicative and prescriptive modelling to support business decision-making.
4. Demonstrate the ability to translate data into clear, actionable insights.

Syllabus:

Unit I: Introduction

1. Overview of Business analytics, Scope of Business analytics, Business Analytics Process, Relationship of Business Analytics
2. Process and organization, competitive advantages of Business Analytics.
3. Statistical Tools: Statistical Notation, Descriptive Statistical methods, Review of probability distribution and data modeling, sampling and estimation methods overview.
4. Trendiness and Regression Analysis: Modeling Relationships and Trends in Data, simple Linear Regression.



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Unit II: Organisation for BA

1. Organization Structures of Business analytics, Team management, Management Issues
2. Designing Information Policy, Outsourcing, Ensuring Data Quality, Measuring contribution of Business analytics, Managing Changes.
3. Important Resources, Business Analytics Personnel, Data and models for Business analytics, problem solving, Visualizing and Exploring Data, Business Analytics Technology.

Unit III: Analytics

1. Descriptive Analytics, predictive analytics
2. Predicative Modeling, Predictive analytics analysis
3. Data Mining, Data Mining Methodologies
4. Prescriptive analytics and its step in the business analytics Process
5. Prescriptive Modeling, nonlinear Optimization.

Unit IV: Forecasting and Simulation

1. Forecasting Techniques: Qualitative and Judgmental Forecasting
2. Statistical Forecasting Models, Forecasting Models for Stationary Time Series, Forecasting Models for Time Series with a Linear Trend
3. Forecasting Time Series with Seasonality, Regression Forecasting with Casual Variables
4. Selecting Appropriate Forecasting Models.
5. Monte Carlo Simulation and Risk Analysis: Monte Carle Simulation Using Analytic Solver Platform, New-Product Development Model, Newsvendor Model, Overbooking Model, Cash Budget Model.

Unit V: Recent Trends

1. Decision Analysis: Formulating Decision Problems, Decision Strategies with and without Outcome Probabilities, Decision Trees
2. The Value of Information, Utility and Decision Making.
3. Recent Trends in Embedded and collaborative business intelligence, Visual data recovery, Data Storytelling and Data journalism.

References:

1. Schniederjans, M. J., Schniederjans, D. G. and Starkey, C. M. (Latest Ed). *Business analytics Principles, Concepts, and Applications*. Pearson FT Press.
2. Evans, J. (Latest Edition). *Business Analytics*. Persons Education..



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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MBAIM204	DC	MATERIALS MANAGEMENT	4	0	0	4	60	20	20	0	0

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The objective of the course is to expose students to understand basics of Materials Management and its application. The specific objectives of the course are

1. To impart knowledge and understanding of Materials Management
2. To explain how the application of the scientific principles of materials management can aid in profitability of a business.

Course Outcomes:

After completion of this course the students are expected to be able to:

1. Understand the importance and impact of managing materials in an organisation
2. Apply latest strategies to manage materials optimally and scientifically
3. Understand the purchasing, logistics and other functions of materials management

Syllabus:

UNIT I: Introduction

1. Materials Management - Evolution
2. Introduction, Scope and Objectives
3. Importance, Integrated Materials Management, Profit Centre concept.
4. Interface with other functions

UNIT II: Logistics

1. Logistics – Objectives, Components, Significance.
2. Supply Chain Management – Objectives, Components, Significance
3. Trade-off between Customer Service & Cost



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UNIT III: Inventory Management

1. Inventory - Need of Inventory
2. Costs associated with Inventory
3. Classification of materials
4. ABC Analysis, VED, HML, FSN, GOLF, SOS
5. Types of Inventory - Basic EOQ Model
6. EOQ with discounts, Shortages, Safety Stock

UNIT IV: Purchasing Management

1. Purchase Cycle, 5Rs of purchasing – technical, commercial and legal aspects of purchasing
2. Negotiation in purchasing
3. Vendor rating
4. Purchasing methods
5. Project buying and related aspects
6. Contracts management

UNIT V: Stores Management

1. Relevance, importance and objectives of stores
2. Stores identification system and codification
3. Stores procedures and organization – inspection and handling, storage procedures, security, stores issues and receipts
4. Inventory valuation

References:

1. Arnold, et al (2004). *Introduction to Materials Management*: New Delhi: Pearson Education.
2. Dobler, Donald.W & Burt (1996). *Purchasing and Supply Management*. USA: McGraw-Hill.
3. Dutta , A.K (2008). *Materials Management*. New Delhi; PHI.
4. Gopalkrishnan ,P (1993). *Handbook of Materials Management*. New Delhi: PHI.



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MBAI201	DC	FINANCIAL MANAGEMENT	4	0	0	4	60	20	20	-	-

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in

Course Objectives:

The objective of this course is to understand the concept of Business Finance. It also aims at learning of financial tools and developing the skills of financial analysis and financial decisions. The emphasis will be on the concepts and application rather than derivations

Course Outcomes:

After attending the course, the students will be able to

1. Understand various sources of finance which a business house can mobilize.
2. Develop the ability to measure the risk and return of the various portfolios.
3. Implement investment decisions, the process and methods of evaluation of various investment proposals.
4. Develop the skills to analyze the impact of various financing alternatives on the wealth maximization/ valuation of the firm.

Syllabus:

UNIT I: Introduction

1. Introduction to financial management
2. Objectives of financial management – profit maximization and wealth maximization
3. Interface of Financial Management with other functional areas

UNIT II: Sources of Finance, Cost of Capital and Capital Structure Decision

1. Short term and long term sources of funds and their characteristics Cost of Capital
2. Computation of cost of Equity, Debt and Preference Capital.
3. Weighted Average Cost of Capital
4. Capital Structure and its Theories.



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UNIT III: Investment decisions

1. Time Value of Money
2. Investment evaluation techniques – Net present value
3. Internal rate of return
4. Payback period
5. Discounted payback period
6. Accounting rate of return

UNIT IV: Working capital management

1. Factors influencing working capital requirements
2. Current asset policy and current asset finance policy
3. Determination of operating cycle and cash cycle
4. Estimation of working capital requirements of a firm

UNIT V: Leverage Analysis and Dividend Decisions

1. Developing the Concept of Leverage in Finance
2. Computation and Inferences of Degree of Operating Leverage
3. Financial Leverage and Combined Leverage
4. CVP analysis, PV Chart and Break Even Analysis for business decisions
5. Dividend policy – Factors affecting the dividend policy
6. Dividend policies- Stable dividend, Stable payout

References

1. Brigham and Houston (2009). *Fundamentals of Financial Management*. Cengage Learning, Latest Edition.
2. Chandra Prasanna (2011). *Financial Management*. Tata McGraw Hill, Latest Edition.
3. Kapil (2012). *Financial Management*. Pearson Education, Latest Edition.
4. Khan M. Y. and Jain P. K. (2007). *Financial Management*. Tata McGraw Hill, Latest Edition.
5. Kothari and Dutta (2005). *Contemporary Financial Management*. Macmillan India Ltd, Latest Edition.
6. Pandey I. M. (2009). *Financial Management*. Vikas Publications, Latest Edition.
7. Shrivastav and Mishra (2008). *Financial Management*. Oxford University press, Latest Edition.
8. Stephen A. Ross, Wester Field, Jordan (2008). *Fundamentals of Corporate Finance*. McGraw Hill, Latest Edition.
9. Vanhorns and Bhandari (2008). *Fundamentals of Financial Management*. Prentice Hall, Latest Edition.



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MBAI202	DC	RESEARCH METHODOLOGY	4	0	0	4	60	20	20	0	0

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Course Objectives:

The primary objective of this course is to develop a research orientation among the scholars and to acquaint them with fundamentals of research methods. It will equip the students with the concept and methods of Business Research.

Course Outcomes:

1. The course offers a systematic package into the theoretical as well as practical aspects of conducting research.
2. Demonstrate understanding of research methodology.
3. Apply the statistical concepts in business research.
4. Validate statistical statements relating to business research.

Syllabus:

UNIT I: Business Research

1. An overview: Research process
2. Types of Research - Exploratory Research, Descriptive Research, Causal Research, Analytical Research
3. Problem formulation, Management problem v/s. Research problem
4. Approaches to Research
5. Importance of literature review
6. Business Research Design: Steps involved in a research design

UNIT II: Sampling and Data Collection

1. Sampling and sampling distribution: Meaning, Steps in Sampling process
2. Types of Sampling - Probability and Non probability Sampling Techniques
3. Data collection: Primary and Secondary data – Sources – Advantages/Disadvantages
4. Data collection Methods: Observations, Survey, Interview and Questionnaire design, Qualitative Techniques of data collection.



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UNIT III: Measurement and Scaling Techniques

1. Nominal Scale, Ordinal Scale, Interval Scale, Ratio Scale, Criteria for good measurement
2. Attitude measurement – Likert's Scale, Semantic Differential Scale, Thurstone-equal appearing interval scale

UNIT IV: Statistical Tools for Data Analysis

1. Measures of central tendency - Mean, Median, Mode, Quartiles, Deciles and Percentiles
2. Measures of Dispersion: Standard Deviation – Variance – Coefficient of Variance, Skewness
3. Correlation - Karl Pearson's coefficient of Correlation, Rank Correlation
4. Regression: Method of Least Squares
5. Formulation of hypothesis
6. Testing of hypothesis
7. Type I and Type II Errors.
8. Parametric tests: Z-Test, t-test, F-test, Analysis of Variance – One-Way and Two-way
9. Non parametric tests - Chi-Square test

UNIT V: Report writing

1. Reporting Research
2. Types of reports
3. Characteristics of a research report

References:

1. Aczel and Sounderpandian (2008). *Complete Business Statistics*. Tata-McGraw Hill, Latest Edition.
2. Anderson, Sweeney, William, Cam (2014). *Statistics for Business and Economics*. Cengage Learning, Latest Edition.
3. Cooper Donald R and Schindler Pamela S. (2006). *Business Research Methods*. McGraw-Hill Education, Latest Edition.
4. Gupta S. P. (2014). *Statistical Methods*. Sultan Chand and Sons, Latest Edition.
5. Kothari C. R. (2004). *Research Methodology*. Vishwa Prakashan, Latest Edition.
6. Krishnaswami O. R., Ranganatham M. (2011). *Methodology of Research in Social Sciences*. Himalaya Publishing House, Latest Edition.
7. Levin and Rubin (2008). *Statistics for Management*. Dorling Kindersley Pvt Ltd, Latest Edition.
8. Malhotra Naresh K. (2008). *Marketing Research*. Pearson publishers, Latest Edition.
9. Sekaran Uma (2003). *Research Methods for Business*. Wiley India, Latest Edition.
10. Zikmund, Babin, Carr, Griffin (2003). *Business Research Methods*. Cengage Learning, India, Latest Edition.