**Maulana Abul Kalam Azad University of Technology, West Bengal**
**(Formerly known as West Bengal University of Technology)**
**Syllabus of BBA in Business Analytics**
**Effective from academic session 2023-2024**

**Semester-I**

## Course Name: Principles of Management and Organizational Behaviour

**Mode: Offline** **Credits: 5 (Theory)**

**BBA (BA) – 101**

**Aim of the course**: The Aim is to facilitate students understand the conceptual framework of management and organizational behaviour in order to equip them with the expertise to manage organizations effectively.

**Course Objectives:** Objectives of this course to enlighten students with basic perspectives of management, which includes the conceptual framework and different theories of management with an emphasis on its functional dimensions and practices in contemporary world. Furthermore, this course intends to educate the students regarding various dimensions of organizational behaviour covering individual and group behaviour in organizational context with an insight of handling contemporary organizational concerns.

| Sl | Graduate attributes | Mapped modules |
|---|---|---|
| CO1 | The students will acquire knowledge of theories & practices of Management. | M1, M4 |
| CO2 | The students shall Understand the fundamentals and functions of Organizational Management Process with its different horizons. | M1,M2, M3, M4 |
| CO3 | The students will apply Communication and Leadership Skills for Problem Solving and Decision Making. | M3, M5 |
| CO4 | The students will Analyze and Assess Individual Behaviour and Group Behaviour for effective organizational functioning. | M4, M5 |
| CO5 | The students shall Analyze the Contemporary Organizational Trends, Culture, Challenges and Conflicts. | M3, M4, M5 |
| CO6 | The students shall Evaluate the effectiveness of Organizational Management functioning from the perspective of Contemporary Changes. | M2, M3, M4,M5 |
| CO7 | The students will Create the knowledge base and develop the avenues required for practical management application. | M2, M3, M4,M5 |

**Learning Outcome:/Skills**:

The students will be able to exhibit the utility of the theories, functions, processes of management in contemporary corporate world. They will also attain the skills required to craft effective organizational operations by applying the different avenues of managerial decision making in various organizational contexts with significant manifestations of cultivating organizational change.
Moreover, the knowledge gathered regarding applicability of the concept of organizational behaviour will enable the students to demonstrate professional competence in practical field. The

understanding of individual and group behaviour of people in the organization will develop the expertise among students to analyze the complexities associated with organizational management.

| Module Number | Content | Total Hours | %age of questions | Bloom's Level ( applicable) |
|---|---|---|---|---|
| M 1 | Management: Concept & Theories | 10 | 15 | L1, L2 |
| M 2 | Planning & Organizing | 6 | 12 | L2, L5,L6 |
| M 3 | Directing, Controlling & Change Management | 14 | 30 | L2, L3, L5,L6 |
| M 4 | Introduction to OB & understanding Individual Behaviour | 10 | 25 | L2, L3, L5,L6 |
| M 5 | Understanding Group Behaviour | 10 | 18 | L3, L4,L5, L6 |
| Total | | 50 | 100 | |

Detailed Syllabus:

**Module 1 : Management: Concept & Theories:**

Concept, Nature, Significance, Management as a Science or an Art, Management & Administration, Managerial Skills and Managerial Roles;
Schools of Management Thoughts- Taylor's Scientific Management Theory, Fayol's Administrative Theory, Elton Mayo's Human Relations Approach, Max Weber's Bureaucratic Theory, Systems Theory, Contingency theory, Peter Drucker's contribution to Management.

**Total Hours: 10**

**Module 2** : **Planning & Organizing:**

Planning- Nature, Importance, Levels, Types, Limitations; Planning Premises, BCG, MBO;
Decision Making-Concept, Process;
Organizing-Concept of Line, Line & Staff, Functional, Project, Matrix organization structure; Concept of Departmentation, Span of Control, Authority, Responsibility, Accountability, Delegation,
Centralization and Decentralization.

**Total Hours: 6**

**Module 3: Directing, Controlling & Change Management:**

Motivation – Concept, Significance, Theories-Maslow, Herzberz, McClelland, Alderfer, McGregor,Vroom;
Leadership - Concept, Significance; Theories- Charismatic, Trait, Behavioural;
Leadership styles-Power Orientation, Managerial Grid ;
Communication-Concept, Process, Significance;
Controlling-Concept, Process, Significance;
Financial Control, Operational Control;
Change Management-Concept, Drivers of change, Planned Change Process, Change through Organization Development.

**Total Hours: 14**

**Module 4: Introduction to OB & understanding Individual Behaviour:**

Concept of OB, Disciplines contributing to OB;
Personality- Concept, Determinants, Theories-Psychoanalytic theory, Trait theory, Self Theory;
Perception-Concept, Influencing factors, Perceptual process, Perceptual distortion;
Attitude: Concept, Components-ABC model;
Learning: Concept, Process, Cognitive theory of learning.

**Total Hours: 10**

**Module 5 : Understanding Group Behaviour:**

Group Dynamics- Concept, Types, Stages of Group Development;
Power and Political behavior- Power Dynamics, Power tactics, Causes and Consequences of organizational politics;
Conflict-Concept, Process, Conflict management techniques

**Total Hours: 10**

***Suggested Readings:***

1. L.M. Prasad - Principles and Practices of Management, Sultan Chand & Sons, New Delhi.
2. S. P. Robbins , Organizational Behaviour, Prentice Hall
3. V.S.P. Rao & V.Harikrishnan – Management-Text and Cases, Excel Books, New Delhi.
4. Stoner, J. etc., Management. 6th ed., New Delhi. Prentice Hall of India
5. Koontz O. Donald - Principles of Management, Tata McGraw Hill, New Delhi.
6. Fred Luthans , Organizational Behaviour, McGraw Hill
7. Dr. Harpreet Singh and Parampal Singh – Principles and Practices of Management, Kalyani Publishers, Delhi

8. Madhukar Shukla , Understanding Organizations – Organizational Theory & Practice **in India, Prentice Hall**
9. Koontz, H and Wechrich. H, Management, New York. McGraw Hill
10. J. W. Newstrom & K. Davis, Organizational Behaviour, McGraw Hill.

## Course Name: Basic Mathematics and Descriptive Statistics

**Mode: Offline**
**Credits: 5(4L+1T)**

**Aim of the Course:** The aim is to achieve knowledge of the basic mathematics and statistics and how to apply it to real life business problems.

**Course Objective**:
The course is designed to provide a basic applied knowledge of mathematics and statistics. The students will be able to apply the number system & basic algebra, set theory, determinants and matrices, limits, continuity, differentiation & integration, data collection, frequency & distribution, measures of central tendency and measures of dispersion for solving business problems involving statistical problems.

| CO | Course Outcome | Mapped modules | Program Outcome |
|---|---|---|---|
| CO1 | Remembering | M1, M2, M3, M4, M5, M6, M7, M8 | PO1, PO2, PO3 |
| CO2 | Understanding the course | M1, M2, M3, M4, M5, M6, M7, M8 | PO1, PO2, PO3 |
| CO3 | Applying the general problem | M1, M2, M3, M4, M5, M6, M7, M8 | PO1, PO2, PO3, PO4 |
| CO4 | Analyse the problems | | |
| CO5 | Evaluate the problems after analysing | | |
| CO6 | Create using the evaluation process | | |

| Module Number | Content | Total Hours | Percentage of questions | Bloom's Level |
|---|---|---|---|---|
| M1 | The Number System and Basic Algebra | 8 | 10 % | L1, L2, L3 |
| M2 | Set Theory and Functions & Permutation and Combination | 9 | 15 % | L1, L2, L3, L4 |
| M3 | Determinants and Matrices | 6 | 10 % | L1, L2, L3 |
| M4 | Limits, Continuity, Differentiation and Integration | 10 | 15 % | L1, L2, L3, L4, L5 |

| | | | | |
|---|---|---|---|---|
| M5 | Collection , Editing and Presentation of data | 5 | 10% | L1, L2, L3 |
| M6 | Frequency Distribution | 6 | 10% | L1, L2, L3, |
| M7 | Measures of Central Tendency | 8 | 15% | L1, L2, L3, L4, L5 |
| M8 | Measures of Dispersion | 8 | 15% | L1, L2, L3, L4, L5 |
| Total | | 60 | 100% | |

| Sl. | Topic/Module | Hours |
|---|---|---|
| 1. | **Module 1: The Number System** – Positive and Negative Integers, Fractions, Rational and Irrational Numbers, Real Numbers, Problems Involving the Concept of Real Numbers.<br>**Basic Algebra** – Algebraic Identities, Simple Factorizations, Equations: Linear (in Single Variable and Simultaneous Equations) and Quadratic; Surds and Indices; Logarithms and Their Properties; Problems Based on Surds, Indices and Logarithm. | 8 |
| 2. | **Module 2: Set Theory and Function** –Introduction, Representation of sets,Types of sets, Basic operations on sets; Laws of set algebra; Cardinal number of a set, Venn Diagrams, Application of set theory to the solution of problems. Concept of functions.<br>**Permutations and Combinations** – Fundamental principle of counting, Factorial notation. Permutation: Permutation of n different things, of things not all different, restricted<br>permutations, circular permutations. Combination: Different formulas on combination, complementary combination, restricted combination, Division into groups. Mixed problems on permutation and combination. | 9 |
| 3. | **Module 3: Determinants**--Determinants of order 2 and 3, minors and cofactors, expansion of<br>determinants, properties of determinants, Cramer's rule for solving linear simultaneous equations in two or three variables.<br>**Matrices**-- Different types of matrices, Matrix Algebra – addition, subtraction, scalar multiplication and multiplication of matrices, Singular and non-singular matrices, orthogonal matrices, adjoint and inverse of a matrix. | 6 |
| 4. | **Module 4:Limit, Continuity, Differentiation**: Limit, continuity, meaning & geometrical interpretation of differentiation, standard derivatives, rules for calculating derivatives ($1^{st}$ order) of powers of x, of exponential and logarithmic functions, of trigonometric functions, of implicit functions, of parametric forms.<br>**Integration**: Meaning, standard formulas, Integration by substitution, Integration by parts (excluding trigonometric functions) and basic definite integration. | 10 |
| 5. | **Module 5: Collection, Editing and Presentation of Data:**Primary data and secondary data, methods of collection of data, scrutiny of data. Presentation of data: textual and tabular presentations. Diagrammatic representation of data: Line diagrams, Bar diagrams, Pie charts, multiple-bar diagram and divided-bar diagrams. | 5 |
| 6. | **Module 6: Frequency Distributions**- Attribute and variable, Frequency distribution of an attribute; Discrete and continuous variables, Frequency distributions of discrete and continuous variables. Diagrammatic representation of a frequency distribution: case of | 6 |

| | | |
|---|---|---|
| | an attribute; case of a discrete variable: column diagram, frequency polygon and step diagram; case of a continuous variable: histogram and ogive. | |
| 7. | **Module7: Measures of Central Tendency**-- Definition and utility, Characteristics of a good<br>average, different measures of average, Arithmetic Mean, Median, Other positional measures – quartiles, deciles, percentiles, Mode, Relation between Mean, Median and Mode, Geometric and Harmonic Mean. | 8 |
| 8. | **Module 8: Measures of Dispersion**-- Meaning and objective of dispersion, Characteristics of a good measure of dispersion, Different measures of dispersion – Range, Quartile deviation, Meandeviation, Mean Absolute deviation, Standard deviation, Comparison of the different measures of dispersion. Measures of relative dispersion – Coefficient of Variation. Combined mean and standard deviation. Introduction to Skewness, Kurtosis, Moments. | 8 |

Suggested Readings

1. H. S. Hall & S. R. Knight – Higher Algebra; Radha Publishing House.
2. Reena Garg -- Engineering Mathematics; Khanna Publishing House.
3. D. C. Sancheti & V. K. Kapoor – Business Mathematics; Sultan Chand & Sons.
4. R. S. Soni – Business Mathematics; Pitambar Publishing House.
5. N. G. Das -- Statistical Methods (Combined edition volume I & II); McGraw Hill Education.
6. J. K. Sharma -- Business Statistics, fifth edition; Vikas Publishing house.

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**Semester-II**

**Paper Code: BBA(BA) - 201**
**Inferential Statistics and Application (Theory)**
**Total Credit: 3 (2L+1T/week)**
**Total hours of lectures: 45 hours**

**Course Name: Inferential Statistics and Application (Theory)**

**Mode: Offline** **Credits: 3**

**Aim of the Course:** The aim is to achieve knowledge of the statistical methods in analyzing data and how to apply it to real life business models.

**Course Objective**:

1. The objective is to familiarize students with the basic elements of statistical methods in estimation of population parameters.
2. This paper also benefits students to familiarise themselves with various methods of hypothesis testing and their properties, along with applications in business.
3. They can learn to solve ample practical examples to illustrate the principles and methods using programming language.

| Serial No. | Course Outcome | Mapped modules | PO |
|---|---|---|---|
| 1 | Remembering | M1, M2, M3, M4, M5, M6, M7 | PO1, PO2, PO3 |
| 2 | Understanding the course | M1, M2, M3, M4, M5,M6, M7 | PO1, PO2, PO3 |
| 3 | Applying the general problem | M1, M2, M3, M4, M5, M6, M7 | PO1, PO2, PO3, PO4 |
| 4 | Analyse the problems | M1, M2, M3, M4, M5, M6, M7 | PO4, PO5 |
| 5 | Evaluate the problems after analysing | M1, M2, M3, M4, M5, M6, M7 | PO4, PO5, PO6 |
| 6 | Create using the evaluation process | M6, M7 | PO7 |

| Module Number | Content | Total Hours | Percentage of questions | Bloom's Level |
|---|---|---|---|---|
| M1 | Theory of Probability | 8 | 20% | L1, L2, L3, L4, L5 |
| M2 | Theoretical Probability Distribution | 15 | 30 % | L1, L2, L3, L4, L5 |
| M3 | Sampling Theory | 6 | 10 % | L1, L2, L3, L4, L5 |
| M4 | Estimation | 8 | 20 % | L1, L2, L3, L4, L5 |
| M5 | Hypothesis Testing | 8 | 20% | L1, L2, L3, L4, L5 |
| Total | | 45 | 100% | |

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| Sl. | Topic/Module | Hours |
|---|---|---|
| 1. | **Module 1: Theory of Probability:** Probability as a concept, Random experiment, Important terminology, Classical definition of probability, Axioms, Mutually exclusive events and independent event, Conditionalprobability, Independent events, Bayes' Theorem (without proof) and application. | 8 |
| 2. | **Module 2: Theoretical Probability Distribution:** Discrete and Continuous random variables; Expectation value; Mean and Variance of a Random Variable; Theorems on expectation (without proof); Probability mass function and density function; Discrete distributions – The Binomial distribution and its properties; The Poisson distribution and its properties; Poisson approximation to binomial distribution. Continuous distributions – Normal distributions. | 12 |
| 3. | **Module 3: Sampling theory:** Meaning; Sampling versus complete enumeration; Types of sampling; Random and non-random sampling; Different types of random sampling; Sample Statistic and Population Parameter; Standard error; sampling distribution of the sample mean and the sample proportion; Some Basic Distributions used in sampling theory: Standard normal distribution; Student's t-distribution. | 5 |
| 4. | **Module 4: Estimation:** Point and interval estimation; Criteria of a good estimator; Point Estimation – The Method of Maximum Likelihood; Properties of maximum likelihood estimator; Interval Estimation – Interval estimates and confidence intervals; Calculating interval estimates of the mean and proportion from large samples. | 7 |
| 5. | **Module 5: Hypotheses Testing:** Concepts basic to the hypothesis testing procedure; Steps in Hypothesis testing; Type I and Type II errors; Two-tailed and one-tailed tests of hypotheses. Use of z-distribution, t-distribution. Hypothesis testing of means when the population standard deviation is known / not known; Hypothesis testing of proportions; Hypothesis testing for differences between means and proportions. | 8 |

**Suggested Readings:**

1. J. K. Sharma: Business Statistics, Fifth Edition, Vikas Publishing house.
2. Alexander Holmes: Introductory Business Statistics, OpenStax, XanEdu PublishingInc.
3. N. G. Das -- Statistical Methods (Combined edition volume I & II); McGraw Hill Education.
4. Ken Black: Business Statistics: For Contemporary Decision Making, Wiley.

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**Paper Code: BBA(BA) - 291**
**Inferential Statistics and Application Lab using Python**
**Total Credit: 2 (2hrs/week)**
**Total hours of lectures: 30 hours**

**Course Name: Inferential Statistics and Application Lab using Python**

**Mode: Offline** **Credits: (2P)**

| Sl. | Topic/Module | Hours |
|---|---|---|
| 1. | **Module 6: Introduction to Python:**<br>Python Language – Characteristics, Reasons for Popularity, Application Areas, Data Types.<br>Control Statements – If-Else, Loops.<br>Functions in Python<br>Introduction to Lists | 12 |
| 2. | **Module 7: Use of different libraries for Statistical Computation:**<br>Statistics Module: Mean, Median, Mode, Variance, Standard Deviation<br>Random Module: Sampling<br>Pandas Library: Opening csv file, Correlation, Mean Absolute Deviation, Quartile, Decile, Contingency Table and Conditional Probability<br>NumPy Library: Percentile, Binomial and Poisson Distribution<br>SciPy: Linear Regression, Normal Distribution, Chi-Square Test, t-distribution<br>Matplotlib Library: Histogram, Boxplot. | 18 |

**Suggested Readings:**


1. Satish Jain, Shashi Singh: Programming and Problem Solving through Python Language, BPB Publications.
2. Rituraj Dixit: Data Analysis with Python, BPB Publications.

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**Course Name: Financial Accounting**

**Mode: Offline** **Credits: 5 (Theory)**

**BBA (BA) – 202**

## Course Objective

Students will gain a comprehensive understanding of financial accounting and demonstrate their knowledge by effectively recording various types of business transactions. The curriculum will cover the fundamentals of accounting, including sole proprietorship, partnership, and company accounts. The teaching methodology will incorporate a combination of classroom lectures, engaging PowerPoint presentations, practical problem-solving exercises, assignments, and active classroom participation.

| CO | Course Outcome | Mapped modules | CO Mapping | PO Mapping |
|---|---|---|---|---|
| **1** | Concepts of Financial Accounting | Module 1 | 1 | P02 |
| **2** | Application of Accounting and Financial Statement Analysis | Module 2, 3,4,5 | 2 | P05, P08 |
| **3** | Analyse the concepts of depreciation and reserves | Module 6 | 3 | P02, P05 |
| **4** | Evaluation and Rectification of Error | Module 7 | 4 | P05 |

| Module Number | Content | Total Hours | % age of questions | Bloom's Level |
|---|---|---|---|---|
| **M1** | Basic of Accountancy | **10** | 20% | L1,L2 |
| **M2** | Final Account | **10** | 15% | L2,L3 |
| **M3** | Financial Statement and Ratio | **10** | 15% | L2,L4 |
| **M4** | Company Accounts | **10** | 20% | L2,L3,L4,L5 |
| **M5** | Partnership | **9** | 20% | L2,L3,L4,L5 |
| **M6** | Depreciation | **5** | 5% | L2,L3,L4,L5 |
| **M7** | BRS and Rectification | **6** | 5% | L2,L3,L4,L5 |

| Sl. | Topic/Module | Hour |
|---|---|---|
| **1**. | **Module 1**<br>**Introduction to Financial Accounting:**<br>Meaning and Scope of Accounting; the users of financial accounting information and their needs; Accounting Principles: Accounting Concepts and Conventions, GAAP; Accounting Transactions: Accounting Equation, Journal, Rules of debit and credit, Ledger, Trial Balance, Cash Book. (single column, double column,)**Accounting Standards:** Introduction, Objectives of Accounting Standards, Advantages of Accounting Standards, Accounting Standards in India and IFRS, GAAP Vs. Accounting Standards Vs. IFRS. | **10** |

| | | |
|---|---|---|
| **2**. | **Module 2**<br>**Final Accounts:**<br>Introduction, Meaning, Objectives and Characteristics of Final Accounts; Final Statements of Sole Proprietorship without adjustment, Adjustments in Preparation of Final Statements. | **10** |
| **3**. | **Module 3**<br>**Financial Statement Analysis using Ratios**<br>Concept of Financial Statement, Sources of Information, Necessities of analysis, Techniques, Types of analysis, Horizontal Analysis, Vertical Analysis, Ratio Analysis, Financial Ratios—Meaning, Usefulness of Financial Ratios, Analysis of Ratio, Liquidity Ratios, Solvency Ratios, Profitability Ratios and turnover Ratios, Limitations of Ratio Analysis | **10** |
| **4**. | **Module 4**<br>**Company accounts:**<br>Issue of shares (application, allotment, first call, final call), Calls in arrear & forfeiture of shares, Re-issue of shares | **10** |
| **5.** | **Module 5**<br>**Partnership Accounts:**<br>Meaning and Features, Partnership Deed and Contents; Admission and Retirement of partners. Only Concept of Garner Vs. Murray rule | **9** |
| **6**. | **Module 6**<br>**Depreciation and Provisions:**<br>Concept of depreciation; Causes of depreciation; depletion, amortization; Depreciation accounting; Methods of recording depreciation; Straight line and diminishing balance method, (mainly Sale of Machinery & Changing the methods of depreciation i.e. Straight line to Diminishing method and vice versa. | **5** |
| **7.** | **Module 7**<br>**Bank Reconciliation Statement and Rectification of Errors**<br>Introduction, Meaning of Bank Reconciliation Statement, Importance of Bank Reconciliation Statement, Reasons for Difference, Procedure for Reconciliation; **Rectification of errors**: Concept, Need and Types of Errors.<br>(Focus mainly on Theoretical Background.) | **6** |

## Suggested Readings:

1. Ashoke Banerjee: Financial Accounting, Excel Books
2. Basu & Das : Financial Accounting, Rabindra Library
3. Ramchandran Kakani: Financial Accounting for Managers, TMH
4. P. C. Tulsian: Financial Accounting, Pearson.
5. M. Hanif, A. Mukherjee: Financial Accounting, TMH.
6. Dr. S. N. Maheshwari, Sharad K. Maheshwari: Financial Accounting for BBA, Vikas Publishing House Pvt. Ltd
7. Prof. Amitabha Basu: Financial Accounting , Tee Dee Publication