

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB**  
**Syllabus of BBA in Business Analytics**  
**(Effective for 2021-2022 Admission Session)**  
**Choice Based Credit System**  
**140 Credit (3-Year UG)**

**Semester-II**

**Course:** Inferential Statistics and Applications

**Code:** BBA (BA) – 201

**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.

| Sl | Course Outcome                        | Mapped modules                           |
|----|---------------------------------------|--|
| 1  | Remembering                           | M1, M2, M3, M4, M5, M6, M7, M8, M9, M10. |
| 2  | Understanding the course              | M1, M2, M3, M4, M5, M6, M7, M8, M9, M10. |
| 3  | Applying the general problem          | M1, M2, M3, M4, M5, M9, M10.             |
| 4  | Analyse the problems                  | M1, M2, M3, M4, M5, M9, M10.             |
| 5  | Evaluate the problems after analysing | M1, M2, M3, M4, M5, M9, M10.             |
| 6  | Create using the evaluation process   | M9, M10.                                 |

| Module Number | Content                   | Total Hours | %age of questions | Bloom's Level (if applicable) | Remarks (If any) |
|---------------|---------------------------|-------------|-------------------|-------------------------------|------------------|
| M 1           | Probability               | 5L          |                   | L1, L2, L3, L4, L5            |                  |
| M 2           | Distributions             | 10L         |                   | L1, L2, L3, L4, L5            |                  |
| M 3           | Sampling theory           | 5L          |                   | L1, L2, L3, L4, L5            |                  |
| M 4           | Estimation                | 5L          |                   | L1, L2, L3, L4, L5            |                  |
| M 5           | Test of Significance      | 10L         |                   | L1, L2, L3, L4, L5            |                  |
| M 6           | Application: Introduction | 1P          |                   | L1, L2,                       |                  |

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|      |   |           |            |                        |  |
|------|---|-----------|------------|------------------------|--|
| M 7  | Data types and Control structures                 | 1P        |            | L1, L2,                |  |
| M 8  | Data types and Control structures                 | 2P        |            | L1, L2,                |  |
| M 9  | Applications using Python/R                       | 3P        |            | L1, L2, L3, L4, L5, L6 |  |
| M 10 | Introduction to Hypothesis Testing using Python/R | 3P        |            | L1, L2, L3, L4, L5, L6 |  |
|      |   | <b>60</b> | <b>100</b> |                        |  |

Paper Code: BBA (BA) – 201  
Inferential Statistics and Applications

Total Credit: 4L  
Total hours of lectures: 40 hours

| Sl. | Topic/Module  | Hour |
|-----|---|------|
| 1.  | <b>Module 1: Probability:</b> Introduction, Random experiment, Important terminology, Classical definition of probability, Axioms, Conditional probability, Independent events, Random variables, Joint distribution. | 5L   |
| 2.  | <b>Module 2: Distributions:</b> Binomial, Poisson, Normal distribution.   | 10L  |
| 3.  | <b>Module 3: Sampling theory:</b> Meaning, Sampling Error, Sampling Types.  | 5L   |
| 4.  | <b>Module 4 : Estimation :</b> Introduction to Estimator, Estimation, Point and Interval Estimation.  | 10L  |
| 5.  | <b>Module 5: Test of Significance:</b> Theory, Terminologies, Large sample tests, Small sample tests, F distribution, Test for correlation co-efficient, ANOVA.   | 10L  |

**Suggested Readings:**

1. J K Sharma: Business Statistics, fifth edition, Vikas Publishing house.

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2. Alexander Holmes: Introductory Business Statistics by OpenStax, XanEdu Publishing Inc.
3. N G Das, Statistical Methods (Combined edition volume 1 & 2), McGraw Hill Education.
4. Ken Black: Business Statistics: For Contemporary Decision Making, Wiley.
5. Yashavant Kanetkar: Let Us Python, BPB.
6. Gowrishankar S, Veena A: Introduction to Python Programming, CRC Press / BSP Books.

Paper Code: BBA (BA) – 291  
Inferential Statistics and Applications  
Total Credit: 2P  
Total hours of lectures: 40 hours

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| Sl. | Topic/Module   | Hour |
|-----|--|------|
| 1.  | <b>Module 1: Application: Introduction :</b> Relationship between computers and programs -- Basic principles of computers -- File systems -- Using the Python/R interpreter -- Introduction to binary computation -- Input / Output.               | 5    |
| 2.  | <b>Module 2: Data types and Control structures:</b> Operators (unary, arithmetic, etc.) -- Data types, variables, expressions, and statements -- Assignment statements -- Strings and string operations -- Control Structures: loops and decision. | 5    |
| 3.  | <b>Module 3: Modularization and Classes:</b> Standard modules -- Packages -- Defining Classes -- Defining functions -- Functions and arguments (signature).  | 10   |
| 4.  | <b>Module 4: Applications using Python/R:</b> Frequency distribution, Sampling distributions, Central tendency, variance, probability functions computation.   | 10   |
| 5.  | <b>Module 5: Introduction to Hypothesis Testing using Python/R:</b> Large sample tests, Small sample tests, F distribution, Test for correlation coefficient, ANOVA.   | 10   |

**Suggested Readings:**

7. J K Sharma: Business Statistics, fifth edition, Vikas Publishing house.
8. Dr Sharma Pooja: Programming in Python, BPB.
9. Arora, Malik: R Programming For Beginners, Bookcentre
10. Vries Andrie De, R Programming for Dummies, Wiley india Pvt. Ltd
11. Yashavant Kanetkar: Let Us Python, BPB.
12. Gowrishankar S, Veena A: Introduction to Python Programming, CRC Press / BSP Books.

**Course:** Organizational Behaviour.

**Code:** BBA (BA) – 202

**Course Objective:**

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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.

| SI | Course Outcome                        | Mapped modules                           |
|----|---------------------------------------|--|
| 1  | Remembering                           | M1, M2, M3, M4, M5, M6, M7, M8, M9, M10. |
| 2  | Understanding the course              | M1, M2, M3, M4, M5, M6, M7, M8, M9, M10. |
| 3  | Applying the general problem          | M2, M3, M4, M5, M6, M7, M8, M9           |
| 4  | Analyse the problems                  | M2, M3, M4, M5, M6, M7, M8, M9           |
| 5  | Evaluate the problems after analysing | M2, M3, M4, M5, M6, M7, M8, M9           |
| 6  | Create using the evaluation process   |  |

| Module Number | Content                                | Total Hours | %age of questions | Bloom's Level (if applicable) | Remarks (If any) |
|---------------|--|-------------|-------------------|-------------------------------|------------------|
| M 1           | Introduction                           | 8           | 8                 | L1, L2, L4, L5                |                  |
| M 2           | Personality                            | 8           | 10                | L1, L2, L3, L4, L5            |                  |
| M 3           | Perception and attribution             | 6           | 10                | L1, L2, L3, L4, L5            |                  |
| M 4           | Learning                               | 6           | 15                | L1, L2, L3, L4, L5            |                  |
| M 5           | Attitudes                              | 6           | 10                | L1, L2, L3, L4, L5            |                  |
| M 6           | Group Dynamics                         | 6           | 10                | L1, L2, L3, L4, L5            |                  |
| M 7           | Power and Political behaviour          | 6           | 10                | L1, L2, L3, L4, L5            |                  |
| M 8           | Conflicts                              | 6           | 15                | L1, L2, L3, L4, L5            |                  |
| M 9           | Communication                          | 6           | 10                | L1, L2, L3, L4, L5            |                  |
| M 10          | International Organizational Behaviour | 2           | 2                 | L1, L2, L6                    |                  |
|               |  | <b>60</b>   | <b>100</b>        |                               |                  |

Organizational Behaviour  
 Paper Code: BBA (BA)- 202  
 Total Credit: 6  
 Total hours of lectures: 60 hours

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**140 Credit (3-Year UG)**

| Sl. | Topic/Module  | Hour |
|-----|---|------|
| 1.  | <b>Module 1: Introduction:</b> Concept of organizational behavior – Learning Objectives, Nature, Role, importance, Emerging Challenges, Evolution.      | 8    |
| 2.  | <b>Module 2: Personality:</b> Learning Objectives, Nature, Theories, Shaping of Personalities.  | 8    |
| 3.  | <b>Module 3: Perception and Attribution:</b> Meaning, Definitions, Influencing factors, Perceptual process.   | 6    |
| 4.  | <b>Module 4: Learning:</b> Definition, Process, Cognitive theory of learning.   | 6    |
| 5.  | <b>Module 5: Attitudes:</b> Definition, Objective, Nature, Components-ABC model, Formation, Function, Challenging attitudes.                            | 6    |
| 6.  | <b>Module 6: Group Dynamics:</b> Definition, Objective, Types, Introduction to Group Development and Structuring.                                       | 6    |
| 7.  | <b>Module 7: Power and Political behaviour:</b> Definition, Power Dynamics, Sources, Power tactics, Essence of politics, Types of political activities. | 6    |
| 8.  | <b>Module 8: Conflicts:</b> Definition, Objective, Nature, Nature of conflicts, Process, levels.  | 6    |
| 9.  | <b>Module 9: Communication:</b> Definition, Objective, Types of Interpersonal Communication, Influencing factors, Barriers.                             | 6    |
| 10. | <b>Module 10: International Organizational Behaviour:</b>   | 2    |

**Suggested Readings:**

1. K. Aswathappa: Organizational behaviour, Text, Cases and Games, Himalaya Publishing House.
2. Stephen P. Robbins: Organizational Behaviour, Eighteen Edition, Pearson.
3. Stephen P. Robbins: Essentials of Organizational Behavior, Fourteenth Edition, Pearson.
4. Fred Luthans: Organizational behavior: A modern behavioral approach to management, McGraw-Hill.
5. Afsaneh Nahavandi: Organizational Behavior, First Edition, SAGE Publications.

**Course:** Environment & Sustainable Development.

**Code:** BBA (BA) 204.

**Course Objective:**

1. To inculcate the knowledge base on ecosystem and types of environmental pollutions.

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2. Promote understanding of efforts that can be made at the Industry and Government level to improve the environment, the economy and the quality of life.
3. To build basic understanding on sustainable development with a vision to balance our economic, environmental and social needs, allowing opulence for now and future generations.

| <b>Sl</b> | <b>Course Outcome</b>                 | <b>Mapped modules</b> |
|-----------|---------------------------------------|-----------------------|
| 1         | Remembering                           | M1, M2, M3, M4, M5    |
| 2         | Understanding the course              | M1, M2, M3, M4, M5    |
| 3         | Applying the general problem          | M5                    |
| 4         | Analyse the problems                  | M3, M4                |
| 5         | Evaluate the problems after analysing | M4, M5.               |
| 6         | Create using the evaluation process   | <b>M1</b>             |

| <b>Module Number</b> | <b>Content</b>                                  | <b>Total Hours</b> | <b>%age of questions</b> | <b>Bloom's Level (if applicable)</b> | <b>Remarks (If any)</b> |
|----------------------|---|--------------------|--------------------------|--------------------------------------|-------------------------|
| M1                   | <b>Introduction.</b>                            | 3                  | 10                       | L1, L2, L6.                          |                         |
| M2                   | <b>Ecosystems.</b>                              | 3                  | 25                       | L1, L2.                              |                         |
| M3                   | <b>Environmental Pollution.</b>                 | 4                  | 25                       | L1, L2, L4.                          |                         |
| M4                   | <b>Environmental Protection.</b>                | 5                  | 20                       | L1, L2, L4.                          |                         |
| M5                   | <b>Environmental Policies and Legislations.</b> | 5                  | 20                       | L1,L2, L3, L5.                       |                         |
|                      |   | <b>20</b>          | <b>100</b>               |                                      |                         |

Paper Code: BBA(BA) - 204  
Environment & Sustainable Development  
Total Credit: 2  
Total hours of lectures: 20 hours

| <b>Sl.</b> | <b>Topic/Module</b> | <b>Hour</b> |
|------------|---------------------|-------------|
|------------|---------------------|-------------|

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|    |   |   |
|----|---|---|
| 1. | <b>Module 1: Introduction:</b> Multidisciplinary nature, Scope and importance; the need for environmental education. Concept of sustainability and sustainable development.   | 3 |
| 2. | <b>Module 2: Ecosystems:</b> Definition, Structure: food chains, food webs and function of ecosystem: Energy flow, nutrient cycle and ecological succession. Ecological Interactions, Biodiversity and Conservation – Levels, India as a mega-biodiversity nation, Threats to biodiversity, Ecosystem and biodiversity services | 3 |
| 3. | <b>Module 3: Environmental Pollution:</b> Types:- Air pollution, Water pollution, Land pollution, Noise pollution; pollutants, Effects of pollution, Control and Remedial measures.   | 4 |
| 4. | <b>Module 4: Environmental Protection:</b> Report of the Club of Rome: Sustainable Development, Different Renewable Energy Sources- Wind Power, Water Power, Bio Fuel/Solid Bio Mass, Geothermal Energy, Nuclear Power, Environmental Movements- Chipko movement; Narmada Bachao movement; Tehri Dam conflict.                  | 5 |
| 5. | <b>Module 5: Environmental Policies and Legislations:</b> Environmental Regulations Different Acts, Environmental Ethics Environmental Impact Assessment (EIA), EIA – Methods and Tools, Appraisal and Clearance for Industry, Evaluation System.   | 5 |

**Suggested Readings:**

1. G.N. Pandey: Environmental Management, Vikas Publishing House Pvt. Ltd.
2. Cunningham: Environmental Science, TMH.
3. R. Rajagopalan: Environmental Studies, Oxford.
4. R. Joshi & Munish Kapila: Environment Management, Kalyani Publishers.
5. C.S. Rao: Environmental Pollution Control Engineering, New Age International Publication.