

SVKM's Narsee Monjee College of Commerce & Economics

|   |                  |                               |                |   |  |
|---|------------------|-------------------------------|----------------|---|--|
| <b>Program: Bachelor of Commerce (Economics)</b>  |                  |                               |                | <b>Semester: III</b>                                    |  |
| <b>Course: Statistical Methods in Economics</b><br><b>Academic Year: 2024-25</b><br><b>Batch: 2023-2027</b>   |                  |                               |                | <b>Code:</b>  |  |
| <b>Teaching Scheme</b>  |                  |                               |                | <b>Evaluation Scheme</b>                                |  |
| <b>Lectures</b>   | <b>Practical</b> | <b>Tutorials</b>              | <b>Credits</b> | <b>Internal Continuous Assessment (ICA) (weightage)</b> | <b>Term End Examinations (TEE) (weightage)</b> |
| <b>60</b>   | <b>Nil</b>       | <b>Nil</b>                    | <b>04</b>      | <b>40%</b>  | <b>60%</b>                                     |
| <b>Internal Component</b>   |                  |                               |                |   |  |
| <b>Class Test</b>   |                  | <b>Projects / Assignments</b> |                | <b>Class Participation</b>                              |  |
| <b>20 marks</b>   |                  | <b>20 marks</b>               |                | <b>-</b>  |  |
| <b>Learning Objectives:</b>   |                  |                               |                |   |  |
| <ol style="list-style-type: none"> <li>1. To explain basic statistical concepts of correlation, regression and index numbers.</li> <li>2. Analyze economic data sets using appropriate statistical techniques and interpret the results to draw meaningful conclusions.</li> <li>3. Critically assess the relationship between variables and evaluate its economic implications.</li> <li>4. Design and implement a statistical project to address a research question and analyze the results to make informed recommendations for addressing the economic problem.</li> </ol> |                  |                               |                |   |  |
| <b>Learning Outcomes:</b>   |                  |                               |                |   |  |
| <ol style="list-style-type: none"> <li>1. Students will demonstrate a foundational understanding of key statistical concepts in economics.</li> <li>2. Students will be able to apply analytical skills to interpret and analyze economic data.</li> <li>3. Students will critically evaluate economic relationships using statistical methods</li> <li>4. Students will be able to apply statistical techniques to address real-world economic problems.</li> </ol>  |                  |                               |                |   |  |
| <b>Pedagogy:</b> Classroom Learning, problem solving, case studies, projects or assignments.  |                  |                               |                |   |  |
| Detailed Syllabus: (per session plan)<br>Session Outline for Statistical Methods for Economics<br><b>Each lecture session would be of one hour duration (60 sessions)</b>   |                  |                               |                |   |  |

| Module | Module Content  | Module Wise Pedagogy Used               | Module Wise Duration | Module Wise Reference Books   |
|--------|---|---|----------------------|---|
| I      | <p><b><u>Correlation and Regression</u></b></p> <p><i>Correlation</i></p> <p>Types of Correlation, Correlation and Causation, Scatter Diagram Method, Karl Pearson's Coefficient of</p> | Class room lectures and problem solving | 15                   | "Fundamentals of Statistics" by S.C. Gupta, 7 <sup>th</sup> edition |

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|-----|--|---|----|---|
|     | <p>Correlation, Rank Correlation, Coefficient of Determination</p> <p><i>Regression</i></p> <p>Linear and Non- Linear Regression, Lines of Regression, Coefficients of Regression, Correlation vs Regression Analysis</p>  |   |    | Chapter 8 & 9   |
| II  | <p><b><u>Index Numbers and Time Series</u></b></p> <p><i>Index Numbers</i></p> <p>Types of Index Numbers, Methods of Constructing Index Numbers, Chain Base Index Numbers, Base Shifting, Splicing and Deflating of Index Numbers, Cost of Living Index Number.</p> <p><i>Time Series Analysis</i></p> <p>Components of a Time Series, Measurement of Trend, Moving Averages, Measurement of Seasonal Variations, Measurement of Cyclical Variation, Time Series Analysis in Forecasting</p> | Class room lectures and problem solving | 15 | “Fundamentals of Statistics” by S.C. Gupta, 7 <sup>th</sup> edition Chapter 10 & 11   |
| III | <p><b><u>Sampling and Theory of Estimation</u></b></p> <p><i>Sampling</i></p> <p>Parameter and Statistic, Principles of Sampling, Limitations of Sampling, Errors of Sampling, Types of Sampling- Simple Random Sampling, Stratified Random Sampling, Systematic Sampling</p> <p><i>Estimation Theory</i></p> <p>Sampling Distribution of a Statistic, Criteria of a Good Estimator, Point Estimation, Interval Estimation</p>   | Class room lectures and problem solving | 15 | <p>“Fundamentals of Statistics” by S.C. Gupta, 7<sup>th</sup> edition Chapter 15 &amp; 16 (16.1-16.4)</p> <p>“Statistics for Management” by Richard I. Levin, David S. Rubin, 7<sup>th</sup> edition, Chapter 7</p> |

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| IV | <p><b><u>Hypothesis Testing</u></b></p> <p>Defining statistical hypotheses, Tests of Significance (based on t, F and Z distribution), Null and Alternative Hypothesis</p> <p>Types of Errors- Type I and Type II errors, Level of Significance, Critical Region, One Tailed and two tailed test, probability value of a test statistic.</p> | Class room lectures and problem solving | 15 | <p>“Fundamentals of Statistics” by S.C. Gupta, 7<sup>th</sup> edition Chapter 16 (16.6- 16.7) and Chapter 19.</p> <p>“Statistics for Management ” by Richard I. Levin, David S. Rubin, 7<sup>th</sup> edition, Chapter 8</p> |
|    |   |   |    |  |

**Reference Books:**

1. “Fundamentals of Statistics” by S.C. Gupta, 7<sup>th</sup> Edition (2018), Himalaya Publishing House
2. “Statistics for Management” by Richard I. Levin, David S. Rubin, 7<sup>th</sup> edition (2016), Pearson.

**Note: Latest edition of text book may be used.**

**Evaluation Pattern**

The performance of the learner will be evaluated in two components. The first component will be a Continuous Assessment with a weightage of 40% of total marks per course. The second component will be a Semester end Examination with a weightage of 60% of the total marks per course. The allocation of marks for the Continuous Assessment and Semester end Examinations is as shown below:

**a) Details of Continuous Assessment (CA)**

40% of the total marks per course:

| Continuous Assessment | Details    | Marks    |
|-----------------------|------------|----------|
| Component 1 (CA-1)    | Class Test | 20 marks |
| Component 2 (CA-2)    | Assignment | 20 marks |

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**b) Details of Semester End Examination**

60% of the total marks per course. Duration of examination will be two and half hours.

| <b>Question Number</b> | <b>Description</b>  | <b>Marks</b> | <b>Total Marks</b> |
|------------------------|---|--------------|--------------------|
| Q1.                    | Answer any One out of Two (Module I)                        | 12 x 1       | 12                 |
| Q2.                    | Answer any One out of Two (Module II)                       | 12 x 1       | 12                 |
| Q3.                    | Answer any One out of Two (Module III)                      | 12 x 1       | 12                 |
| Q4.                    | Answer any One out of Two (Module IV)                       | 12 x 1       | 12                 |
| Q5.                    | (a) Case Study  | 6 x 1        | 6                  |
|                        | (b) Give economic reasons/ Explain the following statements | 3 x 2        | 6                  |
| <b>Total Marks</b>     |   |              | <b>60</b>          |

Signature

HOD  
(Ms. Sneh Choithani)

Signature

Approved by Principal  
(Dr. Parag Ajagaonkar)