

Skill Enhancement Course in Mathematics for Fifth Semester B. Sc.

MATSEC 5.1: Data Analysis	
Teaching Hours : 2 Hours/Week Practical Hours: 2 Hours/Week	Credits: 3
Total Teaching Hours: Theory : 30 Hours, Practical : 30 Hours	Max. Marks: 100 (S.A.-60 + I.A.-40)

Course Learning Outcomes: This course will enable the students to:

- Learn the fundamentals of mathematical statistics.
- Learn the applications of statistics in the field of data analysis.

Unit-I: Data classification and analysis - Collection, Classification and Tabulation of data, Bar diagrams and Pie diagrams, Histogram, Frequency curve and frequency polygon.

15 hours

Unit-II: Measures of central tendency and variability - Mean, Median, Mode, Standard deviation, Skewness, Kurtosis, Introduction to Bivariate data - Relation between two variables, Scatter diagram, Definition of correlation – Karl Pearson's coefficient of correlation, Linear regression - Curve fitting by the method of least squares.

15 hours

Lab component: Descriptive Statistics using Microsoft Excel/Libre Office

1. Introduction to some of the basic components/features of Excel.
2. Basic operations in Excel and formatting.
3. Using basic functions and formulae.
4. Data handling – sorting, creating filters, etc.
5. Plotting Bar charts and Pie charts.
6. Finding the mean, median and mode of the given data.
7. Finding the standard deviation, skewness and kurtosis.
8. Handling bivariate data – scatter diagram.
9. Finding the Carl Pearson's coefficient of correlation.
10. Fitting the line of best fit using the method of least squares.

Reference Books:

1. Fundamentals of Statistics, S. C. Gupta, Himalaya Publishing House, 2018.
2. Statistics, D. Freedman, R. Pisani and R. Purves, Viva Books.
3. Probability and Statistics, J. Schiller, M. R. Spiegel and R. A. Srinivasan, Schaum's Outline Series, 2020.

Question Paper Pattern for Skill Enhancement Course (MATSEC) (V Semester)
3 Credits (S.A. - 60 + I.A. - 40)

Duration: 02 hours

Max. Marks: 60

PART- A	
Answer any 5 questions	5 X 2 = 10
1, 2 & 3	Unit- 01
4, 5 & 6	Unit- 02
Answer any 5 questions	5 X 3 = 15
7, 8 & 9	Unit- 01
10, 11 & 12	Unit- 02
Answer any 3 questions	4 X 5 = 20
13, 14 & 15	Unit- 01
16, 17 & 18	Unit- 02
PART- B	
Answer any 5 questions	5 X 3 = 15
19, 20, 21, 22, 23 & 24	Practical component

Note:

The internal marks (40 marks) are divided into four components as follows:

Component 1: Theory internal test - 10 marks

Component 2: Theory assignment - 10 marks

Component 3: Lab internal test - 10 marks

Component 4: Lab records, attendance - 5 marks and assignment - 5 marks