Course Code: **ECON 104**	*Course Title*: **Statistics for Economists**

Course Type (GED/Core/Elective): Core
Year/Level/Semester/Term: One Year
Academic Session: 2021-22 & 2022-23
Course Teacher/Instructor:
Pre-requisite (if any): None
Credit Value: 04
Contract Hours: 60

Course Rationale: Research in the field of economics inevitably involves data analysis which requires a solid grasp of statistical methods and tools. As such it is imperative that economics student learn about the nature, types, sources, collection, organization, presentation and analysis of data in a methodical manner.

Course Objective: The main objective of the course is to familiarize students with the basics of statistics. These include sources and analysis of data, presentation of data by graphs, charts and tables, descriptive statistics, probability theory, sampling theory, correlation and simple and regression.

Course Learning Outcomes: After successful completion of the course, a student is expected to:

1. have knowledge about basic concepts and views in Statistics;
2. acquire the ability to apply statistical methods for collection, processing and analysis of quantitative and qualitative data, particularly such linked to the field of economics;
3. be able to present results of statistical studies; and
4. have basic theoretical knowledge in descriptive statistics.

CLOs Mapped to PLOs

CLO/PLO	PLO1	PLO2	PLO	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CLO1	1	3	2	2	3	2	0	0	2
CLO2	2	3	2	1	2	1	2	3	3
CLO3	2	3	2	2	2	2	3	3	3
CLO4	3	1	1	1	0	0	0	1	2

Course Contents

Topic	Content Summary	Teaching Strategies/Tools	In-Class Assessment	#Class Hours	CLOs
1	**Introduction**: Meaning of 'Statistics'; Descriptive vs. inferential statistics; Sample vs. population; Different types of variables; Types of data; Sources of data; Sampling; Sampling methods – simple random sampling, stratified sampling, cluster sampling, Quota sampling; Importance of statistics in economics; Statistics & business forecasting.	**Strategies**: Verbal and mathematical exposition; Problems solving **Tools**: Books; Handouts; Multimedia; Online resources	Q&As Quizzes Homework Assignments Presentations Tutorials	8	1

2	**Classification and Presentation of Data**: Presenting a categorical/ qualitative variable – summary table, Bar chart, Pie chart and Pareto diagram. Presenting a numerical/quantitative variable - Frequency and frequency distribution; Histogram; Cumulative frequency distribution. Association between variables - cross-tabulation, Contingency table, Scatter plot and time-series plots.	As above	As above	8	2, 3
3	**Measures of Central Tendency**: What is central tendency; Measures of central tendency - Mean, median and mode; Relative merits and demerits of the measures of central tendency; Quartiles; Applications.	As above	As above	8	2, 3
4	**Measures of Dispersion**: What is dispersion; Types of dispersion **-** Range; Mean deviation; Quartile deviation; Variance; Standard deviation; Coefficient of variation; Z-score, Applications.	As above	As above	8	3
5	**Shapes of Distribution: N**ormal distribution; Moments; Skewness and kurtosis; Applications.	As above	As above	4	2, 3
6	**Index Numbers**: Meaning and purpose; Problems in construction; Calculation and interpretation of index numbers; Test for index numbers; Chain index; Relative merits and demerits of chain-base and fixed-base methods; Cost of living indices.	As above	As above	8	1, 4
7	**Correlation and Regression**: Properties of correlation co-efficient; Interpretation and use of correlation; Regression equations and their estimation; Explained and unexplained variations; Uses of regression.	As above	As above	4	1
8	**Probability Theory**: Set operations; Permutations and combinations; Law of probability – conditional, marginal and joint probability distributions; Bayes' Theorem; Independence; Random variable; Expected value.	As above	As above	8	4

Class Schedule:

Lesson Plan

Week(s)	Topic(s)	#Classes	CLO(s)	Remarks
1 – 4	1	1 – 8	1	
5 – 8	2	9 – 16	2, 13	
9 – 12	3	17 – 24	2, 3	***Class Test 1***: (**Topics 1 & 2**) 17th Class
13 – 16	4	25 – 32	2, 3	
17 – 18	5	33 – 36	2, 3	***Class Test 2***: (**Topics 3 & 4)** 33rd Class
19 – 22	6	37 – 44	1, 4	
23 – 24	7	45 – 48	1	***Class Test 3***: (**Topics 5 & 6**) 45th Class
25 – 28	8	49 - 56	4	
29 – 30	**1 - 8**	57 – 60		***Review***

Overall Evaluation Policy:

a. Continuous Internal Evaluation (CIE): Marks - 00

b. Year-End Examination (YEE): Marks - 100

Bloom's Category	Marks (100)
Remember	20
Understand	20
Apply	30
Analyze	10
Evaluate	10
Create	10

c. Grading Scheme: ***As in Section 19***

Policy for Make-Up Classes:

- Utilize the open slots in consultation with students
- Swap classes with colleagues

Basic Text

1. Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2011). *Statistics for Business and Economics* (11th ed.). Mason, Ohio: South-Western Cengage Learning.

Recommended References

1. Bangladesh Bureau of Statistics. *Statistical Year Book of Bangladesh* (various issues). Dhaka.
2. Harnett, D. L., & Murphy, J. L. (1993). *Statistical Analysis for Business and Economics* (1st Canadian ed.). Don Mills, Ont: Addison-Wesley.
3. Levine, D. M., Stephan, D., & Szabat, K. A. (2021). *Statistics for Managers Using Microsoft Excel* (9th ed.). Hoboken, NJ: Pearson.
4. Spiegel, M. R. (2014). Schaum's Outline of Statistics. (5th ed.). New York: McGraw-Hill.

Other Resources

- Online video lectures
- Course-packs
- Handouts