MAKERERE UNIVERSITY
MAKERERE UNIVERSITY BUSINESS SCHOOL
FACULTY OF ECONOMICS, ENERGY AND MANAGEMENT SCIENCE
DEPARTMENT OF APPLIED STATISTICS AND MANAGEMENT SCIENCE

Course Name: **BUSINESS STATISTICS**

Course Code: **BBS 1201**

Course Level: **I**

Credit Units: **4**

Credit Hours: **60**

1. Course Description

This course will introduce the importance of statistics in business and also make students familiar with a wide variety of statistical concepts. Decision-makers make better decisions when they use all available information effectively and meaningfully. The primary role of statistics is to provide decision-makers with methods for obtaining and analyzing information to help make these decisions.

Managers encounter risks and uncertainties while running business enterprises and statistics helps them to answer the long-range planning questions, such as when and where to locate facilities to handle future sales. Among other topics, the course introduces the students to data collection and presentation methods, measures of central tendency, dispersion, skewness, relationship (correlation and regression), index numbers, time series, probability, and estimation.

2. Course objectives

This course is expected to:

i Equip the students with the analytical skills and statistical concepts useful in credible decision-making.

ii Enhance the students' capability to describe and interpret historical empirical records.

iii Improve the students to come up with well-conceived methods of data collection, presentation, analysis, and interpretation skills to make informed decisions.

iv To demonstrate to students the techniques used in inference and prediction, based on present and past data.

3. Learning outcomes

At the end of the course, Students should be able to:

i Apply analytical skills and statistical concepts in decision-making.

ii Describe and interpret historical empirical records.

iii Conduct data collection, analysis, presentation, and interpretation to make informed decisions.

iv Understand the techniques used in inference and prediction based on present and past data.

4. Detailed Course Content

Week No.	Topics	Lessons	Duration (Hours)
1	1. Introduction	• Meaning of statistics • Functions of statistics • Population vs Sample • Parameter vs statistic	4
2	2. Data collection	• Definition and types of data ➢ Primary data ➢ Secondary data etc. • Levels/scales of measurement • Methods of data collection ➢ Observation ➢ Interviews ➢ Questionnaires ➢ Focus Group Discussion ➢ Key informants, etc.	4

3	3. Data presentation	• Textural • Diagrammatical ➢ Bar charts ➢ Pie charts ➢ Pictograms • Tabular ➢ Frequency distributions ➢ Relative frequency distribution • Graphical ➢ Histogram ➢ Frequency Polygon ➢ Ogives	4
4	4. Measures of Central tendency	• Introduction ➢ Definition, description, and examples • Arithmetic Mean ➢ Ungrouped data ➢ Grouped data • Median ➢ Ungrouped data ➢ Grouped data • Median ➢ Ungrouped data ➢ Grouped data • Geometric mean, Harmonic mean, Quadratic mean • Quartiles, Deciles, and Percentiles	4
5	5. Measures of variability	• Introduction ➢ Definition, description, and examples • Range • Mean Deviation • Semi-interquartile range, semi-percentile range • Standard Deviation ➢ Ungrouped data ➢ Grouped data • Coefficient of variation • Measures of Skewness & Kurtosis	4

6	6. Index numbers	• Introduction ➢ Definition, description, and examples ➢ Importance of index numbers • Types of index numbers ➢ Price & Quantity relatives ➢ Un weighted index numbers ➢ Weighted index numbers ▪ Paasches, Laspyres &Fishers • Problems encountered in constructing index numbers.	4
7 & 8	7. Simple Correlation and Regression	• Introduction ➢ Definition, description, and examples • Correlation analysis ➢ Nature and strength of the relationship. ➢ Coefficient of determination ➢ Significance of the relationship • Regression analysis ➢ The regression equation ➢ Least squares estimation ➢ Standard error of estimates. ➢ Significance of beta	6
8 & 9	8. Time Series	• Introduction ➢ Definition, description, and examples ➢ Importance of time series • Components of time series • Decomposition of time series • Measuring trends • Measuring seasonal indices	6
9 & 10	9. Probability	• Introduction ➢ Definition ➢ Probability concepts ➢ Approaches to probability • Rules of Probability	6

		➢ Additional ➢ Multiplicative • Baye's Theorem ➢ Probability tree	
10 & 11	10. Probability Distributions	• Introduction ➢ Definition of a random variable • Types of random variables ➢ Discrete Random Variable ➢ Continuous Random • Mean, standard deviation and variance of a random variable • Types of probability distribution ➢ Discrete Probability Distribution ▪ Binomial ▪ Poisson ➢ Continuous Probability Distributions ▪ Normal • Standard Normal	6
12	11. Sampling Distribution	• Introduction • Sampling techniques • Sampling error • Sampling distribution of a sample mean • Sampling from a Normal population with and without replacement • The Central Limit Theorem • Sample size and Standard error • The finite population multiplier	6
13	12. Hypothesis Testing	• Introduction ➢ Point estimate ➢ Interval estimate ➢ Confidence interval • Tests of significance ➢ Z test for the mean ➢ t-test for the mean	6

		➢ Chi-square test	

5. Mode of delivery

- Lecture method.
- Question and Answer.
- Class (Group and/or Individual) presentations.
- Assignments.
- Brain Storming.
- Tutorials.

6. Mode of assessment and percentage distribution of marks

Tests and/or Course work assignments	30%
End of Semester Examination	70%
Total	100%

7. Reading List

1) Black, K. (2010). Business Statistics for Contemporary Decision Making. United States of America: John Wiley & Sons, Inc. ISBN 13 978-0470-40901-5.
2) Chandan, (2011), Basic Business Statistics, 2nd Edition, Vikas Publishing House PVT LTD, New Delhi
3) Kaberuka, (2003), Statistical Techniques Second (A basic course for Social Scientists), DenPrinters Ltd
4) Pitman, E. J. (2018). Some Basic Theory for Statistical Inference: Monographs on Applied Probability and Statistics. Chapman and Hall/CRC.
5) Storey, D. J. (2016). Understanding the small business sector. Routledge.
6) Sclove, S. L. (2018). A course on statistics for finance. Chapman and Hall/CRC.