

**QUANTITATIVE METHODS**

**(BBA 240)**

**COURSE OUTLINE**

**AUGUST, 2022**

**COURSE OUTLINE TEMPLATE**

**Introduction/Background/Description to the course**

This course is a comprehensive introduction to the use of statistics in business decision-making. This course provides the analytical tools needed for making informed business decisions using data. The focus is on decision making using the tools of statistics.

**Rationale**

* This course introduces students to the tools of research and statistical analysis in Business and enables them to apply such tools in business decisions making. The emphasis is on decision making and applications, rather than proofs, but some understanding of the concepts and an ability to communicate the meaning of the results is vital.
* The knowledge and skills acquired will help students in advanced business courses and in their business career. It also exposes students to excel and enables the students to carry out descriptive statistics using excel.

**Course Aim**

* This course aims at introducing students to quantitative methods used in social sciences and enables them to apply these methods in business decisions making.

**Course objectives**

* Provide a basic understanding of the value and use of quantitative methods in administrative and operational problem solving and decision-making.
* Enable students to carry out descriptive statistics using excel.
* Develop an understanding of a variety of statistical and quantitative techniques applicable to a wide range of business situations.
* Recognize particular techniques and their applications so as to be able to apply these techniques in problem solving for management decision making.

**Learning outcomes**

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

* Provide a basic understanding of the value and use of quantitative methods in administrative and operational problem solving and decision-making.
* Develop an understanding of a variety of statistical and quantitative techniques applicable to a wide range of business situations.
* Carry out descriptive statistics using excel.
* Recognize particular techniques and their applications so as to be able to apply these techniques in problem solving for management decision making.

**Course content**

1. **Introduction to Statistics**

Descriptive and Inferential statistics, Types of data.

2. **Graphical Presentation of Data**

Methods of representation of qualitative data. Methods of representation

of quantitative data. Cumulative frequency distribution.

3. **Numerical Descriptions of Data**

Measures of central tendency. Measures of spread. The population proportion.

4. **Elementary Probability**

Counting techniques. Introduction of the probability concept. The event and event relationships. Probability trees. Conditional probability and statistical independence.

5. **Discrete Probability Distributions**

Random variable and probability distribution. Expected value and variance. Binomial distributions and Poisson distribution.

6. **Continuous Probability Distributions**

Probability density functions. The normal distribution. The exponential

Distribution.

7. **Sampling Distributions.**

Sampling techniques. The sampling distribution. Sampling distribution for the mean. Sampling distribution for the population proportion.

8. **Estimation**

Point estimation. Interval estimation. Student t distribution for small samples.

9. **Hypothesis Testing**

Basic hypothesis testing concepts. Formulating hypothesis and selecting and evaluating the decision rule. Two sided hypothesis testing procedure. Two sample hypothesis tests.

10. **Analysis of Variance**

One factor analysis of variance. Two factor analysis of variance. Confidence intervals.

11**. Regression and Correlation Theory.**

Introduction. Regression analysis. Correlation analysis.

12. **Chi-square Tests**

Statistical independence. Contingency table. Chi-testing for independence. Goodness of fit test.

13. **Index Numbers**

Construction of index numbers. Consumer price index.

14. **Time Series**

Decomposition of time series. Moving averages. Exponential smoothing.

15. **Decision making Under Uncertainty**

Types of decision problems. Expressing outcomes. Decision criteria. Expected value of perfect information. Decision tree analysis.

**Methods of Instruction/Mode of Delivery**

* Recorded Lectures will be uploaded on Moodle.
* Tutorials will be conducted on Moodle, these will be live lectures.
* Weekly quizzes will also be uploaded on Moodle for the students.

**Assessment**

* The continuous assessment (CA) will comprise of a project, Best (2) online test and Online Mid-semester Examination.

**Grading**

Project : 5%

Best online test : 5%

Online Mid-semester Examinations/ Test : 20%

Online Final Examinations : 70%

Total Marks : 100%

**Grading Scheme:**

**Marks Grades Points Classification**

86% - 100% A+ 5 Distinction

76% - 85% A 4 Distinction

66% - 75% B+ 3 Meritorious

61% - 65% B 2 Satisfactory

56% - 60% C+ 1 Clear Pass

50% - 55% C 0 Pass

0% - 49% D 0 Fail

**Required/Prescribed reading**

**Basic business statistics Concepts and applications.** Berenson, Mark & Levine, David. (2012). With 1 CD-ROM. 12th Ed.

**Recommended readings**

1. **Statistics for Business and Economics.** Fourth Edition Paul Newbold, Prentice hall International

Editions.

2. **Quantitative Methods of Business Decisions.** Jan Carwin and Roger Slater. International

Thomson Business Press.

3. **Statistics for Business and Economics Anderson,** D.R., D.J. Sweeney, T.A. Williams, J. Freeman

and E. Shoesmith. (South-Western Cengage Learning, 2010) eleventh edition

4. **Mathematics and Statistics for Business management and Finance.** Louise Swift.

5. **Questions and Answers, Business Mathematics and Statistics Level I and II**. Tailoka Frank P

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