CB2200: BUSINESS STATISTICS

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Business Statistics

Subject Code
CB - College of Business (CB)
Course Number
2200

Academic Unit
Department of Decision Analytics and Operations (DAOS)

College/School
College of Business (CB)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
GE2213 Understanding Uncertainty and Statistical Reasoning
GE2262 Business Statistics

Part II Course Details

Abstract

This course aims to facilitate students' learning of basic statistical concepts commonly used in business management decision making, and their application to the real world. The course content is based on real-world examples and cases to encourage students to develop their attitude and ability to discover and innovate.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain concepts in numerical descriptive measures, sampling distributions, confidence interval estimation, hypothesis testing, and simple linear regression model.	35		x	
2	Select appropriate statistical methods to analyse real-life business data.	35		x	
3	Interpret the statistical results and give recommendations for business decisions.	10	x	x	
4	Apply standard statistical software, such as Microsoft Excel, to analyse data arising from real-life business problems.	20		x	

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage in formal lecture to gain knowledge about statistical analytical techniques. Students will follow instructor's demonstration and use computer software to generate statistical outputs.	1, 2, 3, 4	

2	Tutorials	Students will engage in discussion with peers to evaluate the criteria and appropriateness of chosen statistical measures and methods to real-world business problems.	1, 2, 3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Quizzes	1, 2, 3	20	
2	Assignments	2, 3, 4	25	
3	In-Class Discussion and Performance	2, 3	5	

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Additional Information for ATs

Apart from achieving an overall passing mark for the course, students are required to obtain a minimum mark of 20% in the final examination in order to pass the course.

Assessment Rubrics (AR)

Assessment Task

Quizzes

Criterion

1.1 ABILITY to DEFINE the statistical terminologies.

1.2 ABILITY to SELECT and APPLY different statistical methods to solve business problems.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task
Assignments

Criterion
2.1 ABILITY to IDENTIFY a set of relevant statistical concepts to real-world problems.

2.2 ABILITY to APPLY the relevant statistical concepts to ANALYSE the cases.

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
In-Class Discussion and Performance

Criterion
3.1 ABILITY to EXPLAIN the statistical concepts and PRESENT the statistical findings.

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
Written Examination

Criterion
4.1 ABILITY to SELECT and APPLY different statistical methods to solve business problems.

4.2 ABILITY to INTERPRET the given computer outputs and provide RECOMMENDATIONS accordingly.

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Presenting Data and Descriptive Statistics
Types of data. Organizing and visualizing data. Descriptive statistics including measures of central tendency, variation and shape.

Basic Probability and Probability Distributions
Probability distribution for a discrete random variable. Binomial distribution. Normal distribution. Sampling distributions of mean and proportion. Central limit theorem.

Statistical Inference
Estimation of population parameters - the mean and proportion. Confidence interval estimation. Statistical hypotheses. Type I and Type II errors. The significance level and rejection region. The p-value. Testing hypotheses about the mean and proportion. Determining sample size.

Simple Linear Regression
Scatterplots. Measuring correlation. Simple linear regression model. Least squares estimated of parameters. Measures of variation. Inference about regression parameters. Prediction of new observations.

Reading List

Compulsory Readings

	Title
1	Levine, D.M., Szabat, K.A. and Stephan, D.F. Business Statistics: A First Course. Pearson.

Additional Readings

	Title
1	Bennett, J.O., Briggs, W.L. and Triola, M.F. Statistical Reasoning for Everyday Life. Pearson.
2	Liu, K.I. and To, K.M. Speaking of Statistics. Pearson.
3	Newbold, P., Carlson, W.L. and Thorne, B. Statistics for Business and Economics. Pearson.
4	Gould, R. and Ryan, C.N. Introductory Statistics: Exploring the World through Data. Pearson.
5	Sincich, T. Business Statistics by Example. Prentice Hall.
6	Middleton, M.R. Data Analysis Using Microsoft Excel. Duxbury Press.

7	Online Resources : Statistics Glossary https://www.statistics.com/glossaries/
8	Statistical Universe http://www-personal.umich.edu/~graceyor/govdocs/statuniv.html
9	STICI – A very interesting online statistics course http://www.stat.berkeley.edu/~stark/SticiGui/Text/index.htm
10	HyperStat Online Statistics Textbook http://davidmlane.com/hyperstat/