GE2262: BUSINESS STATISTICS

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Business Statistics

Subject Code
GE - Gateway Education
Course Number
2262

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

GE Area (Primary)
Area 2 - Study of Societies, Social and Business Organisations

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
CB2200 Business Statistics
GE2213 Understanding Uncertainty and Statistical Reasoning

Part II Course Details

Abstract

With today’ s widespread use of statistics in the media, academic and business firms, this course aims to provide students with a good understanding of basic statistical concepts so as to facilitate their decision making. 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

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	Liu, K.I. and To, K.M. Speaking of Statistics. Pearson.
2	Newbold, P., Carlson, W.L. and Thorne, B. Statistics for Business and Economic. Pearson.
3	Robert Gould, Colleen N. Ryan. Introductory Statistics: Exploring the World through Data. Pearson.
4	Terry L. Sincich. Business Statistics by Example. Pearson.
5	Middleton, M.R. Data Analysis Using Microsoft Excel. Thomson, Brooks/Cole.
6	Statistics Glossary http://www.stats.gla.ac.uk/steps/glossary/index.html
7	STICI – A very interesting online statistics course http://www.stat.berkeley.edu/~stark/SticiGui/Text/index.htm
8	HyperStat Online Statistics Textbook http://davidmlane.com/hyperstat/

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

1, 4

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1, 4

PILO 3: Demonstrate critical thinking skills

2

PILO 4: Interpret information and numerical data

3

PILO 6: Demonstrate effective oral communication skills

2, 3

PILO 7: Demonstrate an ability to work effectively in a team

2, 3

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

3

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Final Exam