MA4549: SAMPLING SURVEY METHODS FOR SOCIAL AND MARKET RESEARCH

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Sampling Survey Methods for Social and Market Research

Subject Code
MA - Mathematics
Course Number
4549

Academic Unit
Mathematics (MA)

College/School
College of Science (SI)

Course Duration
One Semester

Credit Units
3

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

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
MA2506 Probability and Statistics, or
MA2510 Probability and Statistics

Precursors
MA3518 Applied Statistics

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to develop skills important for the design and analysis of research in the social sciences and in market research. Specific focus will be on developing skills for survey sampling, and questionnaire design and analysis.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	describe the common sampling strategies, and recognize them from a description of how a survey was done	30	x	x	
2	identify which sampling strategy is appropriate for a given context	20	x	x	
3	estimate key population parameters of interest and measures of uncertainty, for a given sampling strategy	40	x	x	x
4	appreciate important issues in questionnaire design, develop appropriate questionnaires, and critique a given questionnaire	10	x	x	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	Teaching	Learning through teaching is primarily based on lectures	1, 2, 3, 4	35 hours in total
2	Project	Learning through project helps students apply sampling methods to a concrete application.	1, 2, 3, 4	After class
3	Computer lab demonstration	Learning through lab demonstration allows students to develop hands-on skills of using statistical software (in particular R software) to analyse data	1, 2, 3	4 hours in total

4	hand-in assignments	Learning through assignments helps students understand the theoretical basis and identify practical applications of sampling, and develop the ability of analysing practical problems	1, 2, 3	After class

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Mid-term test	1, 2, 3	15	-	No
2	Project	1, 2, 3, 4	15	-	Yes
3	Hand-in assignment	1, 2, 3, 4	10	-	Yes

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2

Minimum Examination Passing Requirement (%)

30

Additional Information for ATs

40% Coursework 60% Examination (Duration: 2 hours) For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

Assessment Rubrics (AR)

Assessment Task

1. Mid-term test

Criterion

Ability in problem solving

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
2. Project

Criterion
Creativity and Team work ability

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
3. Assignments

Criterion
Comprehensive ability in independent problem solving

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
4. Examination

Criterion
Comprehensive ability in independent problem solving

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

Simple random sampling; ratio estimation; regression estimation; systematic sampling; stratified sampling; unequal probability sampling; cluster sampling; multi-stage cluster sampling; questionnaire design.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Lohr, S. Sampling: Design and Analysis, Duxbury Press, 1999.
2	Scheaffer, R., Mendenhall, W., Ott, L. Elementary Survey Sampling. 5th edition, Duxbury Press, 1996.