SDSC4011: EXPERIMENTAL RESEARCH FOR SOCIAL MEDIA

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Experimental Research for Social Media

Subject Code

SDSC - School of Data Science

Course Number

4011

Academic Unit

School of Data Science (DS)

College/School

School of Data Science (DS)

Course Duration

One Semester

Credit Units

3

Level

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

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

SDSC1001 Introduction to Data Science* and SDSC2001 Python for Data Science

*Pre-requisite SDSC1001 will be exempted for students who are enrolled in Minor in Data Science

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course provides students with an extensive exposure to the elements of experimental research for social media. Topics include experimental designs (scientific methods, research designs, measurements, sampling) and causal inference (potential outcomes, graphical models, causal models, identification, estimation, unobserved confounding, instrumental variables), as well as their applications in social media.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe and explain fundamental principles and methods of experimental research for social media	20	x	x	
2	Classify and compare various experimental designs on human subjects	20	x	x	
3	Evaluate existing practices in experiments for social media and seek ways to improve the existing studies	30	x	x	x
4	Apply appropriate experimental methods to solve given practical problems for social media	30	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	Lecture	Students will engage in lecture activities about the principles, methods, and practices of experimental research for social media.	1, 2, 3, 4	39 hours in total

2	Group Case Study Proposals	Students will participate in groups to identify meaningful case study questions related to social media, develop and present proposals applying experimental design and causal inference methodologies, and assess proposals of other peers.	1, 2, 3, 4	after classes; presentation in class in the last week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Mini-Test (duration: 1 hour)	1, 2	15	Questions are designed for basic experiment design to see how well the students have learned fundamental concepts methods, and applications of experimental research in the context of social media and social sciences
2	Case Study Proposals	1, 2, 3, 4	35	Group assessment that enables students to propose case studies related to social media and apply experimental research methods to these case studies.

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Additional Information for ATs

Note: To pass the course, apart from obtaining a minimum of 40% in the overall mark, a student must also obtain a minimum mark of 30% in both continuous assessment and examination components.

Assessment Rubrics (AR)

Assessment Task

Mini-Test

Criterion

Ability to understand and apply fundamental principles and methods of experimental research in the context of social media and social sciences

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
Case Study Proposal

Criterion
Ability to learn the basic concepts, apply methods of experimental design, and develop applications of experiment.

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
Examination

Criterion
Ability to solve learning tasks using experimental research and causal inference methods.

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

Causal inference, interval validity, external validity, controlled experiment, field experiment, online experiment, randomization, control group, between-subjects design, within-subjects design, stimulus manipulation, response measurement, manipulation check, briefing, massive online collaboration, ethical considerations for experiments on human subjects

Reading List

Compulsory Readings

	Title
1	Laboratory experiments in the social sciences, by Murry Webster & Jane Sell (Eds.), Elsevier, 2014.
2	Psychological experiment on the internet, by Michael Birnbaum, Academic Press, 2000

Additional Readings

	Title
1	Nil