

CA8022: RESEARCH METHODOLOGY AND ETHICS

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Research Methodology and Ethics

Subject Code

CA - Civil and Architectural Engineering

Course Number

8022

Academic Unit

Architecture and Civil Engineering (CA)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

R8 - Research Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

BC8022 Research Methodology for Built Environment

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to develop the students' ability to discover and critically apply the research approach and methodology and ethics for carrying out research works. The following issues will be outlined in the course: (a) research philosophy including the purpose to transform things 'believed to be true' into things 'known to be true'; (b) research strategy including methodologies of different research areas; (c) research instruments including data collection methods, sources of data, data/error analyses, verification and validation; (d) report writing including the ways to present the information/ data, proper referencing and acknowledgment; (e) presentation of research findings; (f) ethical aspects in research.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	demonstrate the investigation ability and skills in defining a problem and understand the ways in which data about a phenomenon should be gathered, analyzed and used; understanding of ethics in research;		x	x	x
2	identify, select and critically appraise a body of literature, verification and validation related to a specific research topic;		x	x	x
3	apply and display written communication skills and conduct oral presentation for a subject area.		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	Lectures and Class Tests	Defining research problems, literature review, research methodology and ethics, data analysis, verification and validation, conclusion, communication	1, 2, 3	27
2	Presentations	Assignment presentations	3	12

Additional Information for LTAs

Semester Hours: 3 hours per week

Lecture/Tutorial/Laboratory Mix:

- Lecture (-); Tutorial (-); Laboratory (-)

- Lec/ Tut/ Self-learning mixed mode: 39 hours

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Assignments	1, 2, 3	50	-	Yes
2	Class Tests	1, 2	30	-	Yes
3	Presentation	3	20	-	Yes

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)**Assessment Task**

Assignments (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to appreciate CILO 1 to 3

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

Class Tests (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to appreciate CILO 1 to 2

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

Presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to appreciate CILO 3

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 (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to appreciate CILO 1 to 3

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Class Tests (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to appreciate CILO 1 to 2

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to appreciate CILO 3

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

There is no fixed formal syllabus. Research philosophy, research strategy and methodologies, data collection, analysis and used, report writing and presentation will be outlined in the course. Ways in which data about a phenomenon should be gathered, analyzed and used will be discussed.

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

	Title
1	Kumar, R., Research methodology: a step-by-step guide for beginners, London: SAGE, 2005
2	Neville, T, Henry, D. and Neville, B., Science and technology research: writing strategies for students. Lanham, Md.: Scarecrow Press, 2002.
3	Gomm, R., Social research methodology: a critical introduction, Basingstoke, Hampshire; New York: Palgrave Macmillan, 2004
4	Yu, C.H., Philosophical foundations of quantitative research methodology, Lanham, Md.; Toronto, University Press of America, c2006
5	Jain, G.L., Research methodology: methods, tools & techniques, Jaipur (India): Mangal Deep Publications, 2003 Research
6	http://www.socialpsychology.org/methods.htm
7	Ethics in Research - Research Methods - Research Guides at City University of Hong Kong https://libguides.library.cityu.edu.hk/researchmethods/ethics