CA5603: PROFESSIONAL RESEARCH METHODS

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Professional Research Methods

Subject Code
CA - Civil and Architectural Engineering
Course Number
5603

Academic Unit
Architecture and Civil Engineering (CA)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
BC5603 Professional Research Methods

Exclusive Courses
Nil

Part II Course Details

Abstract

To inspire the students a thorough understanding of the basic philosophy and requirements of research works in terms of concepts, methodology, logic thinking and importance of presentation.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	equip the technique for handling the dissertation with confidence;		x	x	
2	identify and reflect the basic foundation of scientific research;			x	
3	conduct the research work rigorously and accurately;			x	
4	actually implement the knowledge and produce a small piece of research work without detailed supervision.			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	On the topics related to research methodologies	1, 2, 3	
2	Workshops	In class workshops to teach student learn tools for their dissertation	1, 2, 3	
3	Project	Sample research work for student to implement the knowledge	1, 2, 3, 4	

Additional Information for LTAs

Semester Hours: 3 hours per week

Lecture/Tutorial/Laboratory Mix: Lecture (-); Tutorial (-); Laboratory (-)

3 hrs/wk for the first 3 weeks, workshop and student presentations for the last 2 weeks.

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Coursework	1, 2, 3, 4	20	-	Yes
2	Discussion in class	1, 2, 3	20	-	Yes

3	Research Summary	1, 2, 3, 4	20	-	Yes
4	Term projects	1, 2, 3, 4	40	-	Yes

Continuous Assessment (%)
100

Examination (%)
0

Minimum Continuous Assessment Passing Requirement (%)
40

Assessment Rubrics (AR)

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

Criterion
ABILITY to UNDERSTAND, ANALYZE, and DISCUSS research articles

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

Criterion
ABILITY to UNDERSTAND, ANALYZE, and RESPONSE to the in-class discussion

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

Criterion
ABILITY to UNDERSTAND, ANALYZE, and DISCUSS research articles on the topics

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

Criterion
ABILITY to UNDERSTAND, ANALYZE, and DISCUSS the implement of research methodology in research projects

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

Criterion
ABILITY to UNDERSTAND, ANALYZE, and DISCUSS research articles

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Discussion in class (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
ABILITY to UNDERSTAND, ANALYZE, and RESPONSE to the in-class discussion

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Research Summary (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
ABILITY to UNDERSTAND, ANALYZE, and DISCUSS research articles on the topics

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not even reaching marginal levels

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

Criterion

ABILITY to UNDERSTAND, ANALYZE, and DISCUSS the implement of research methodology in research projects

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

Philosophy of research; documentation; word processing; presentation; ethics of research; research support; creativity; research types; measurement.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Fellows, R., & Liu A. (eds), 2008, Research Methods for Construction. (3rd Edition). Blackwell Science, Oxford, (TH213.5 .F45 2008)
2	Greenfield, T. (ed.), 2002, Research Methods for Postgraduates, Arnold, London, (Q180.A1 R47 2002)
3	McBurney, D. H. 2001, Research Methods (5th Edition), Wadsworth Thomson Learning, Belmont, (BF181 .M22 2001)
4	Kumar, R. 2011, Research Methodology: A Step-by-step Guide for Beginners (3rd Edition), SAGE, Los Angeles, London, (Q180.55.M4 K85 2011)
5	Kothari, C.R. 2004, Research Methodology: Methods and Techniques (2nd Revised edition), New Age International (P) Ltd., Publishers, New Delhi, (H62 .K68 2004eb
6	San Filippo, R.D. 1991, Scientific vs Pseudoscientific Methods, [online]. Available at: [Accessed 11 March 2010].