


College of Engineering Department of Civil Engineering		
CE 598 M.Sc. Research Project (in Plan B – Courses Based)		
Credit and Contact hours	6 Credit hours	
Required, or Elective	Required	
Course Description	<p>The Research Project provides students with an opportunity to learn about the research process and participate in it by analyzing, presenting, and writing up their research results. The Research Project course should encompass a replication of the work done in the latest recent journal papers. The research project can take the form of experimental work and/or theoretical analysis related to the research subject. A final course report should be presented, and a final presentation of the work is to be delivered to an examination committee.</p>	
Prerequisites or Co-requisites	None	
Course Learning Outcomes	Students completing this course successfully will be able to:	
	Course Learning Outcomes (CLOs)	Related Student Outcomes (SO)
	CLO1. Acquire new knowledge about a selected research project in the relevant field and identify the research problem through a detailed literature review on the chosen research topic. K1	SO1
	CLO2. Analyze complex and real-life engineering problems using critical thinking, appropriate techniques, and advanced tools to provide solutions to society. S1	SO2
	CLO3. Investigate the scientific research problem independently or through teamwork using critical thinking, appropriate techniques, and advanced tools and management principles. S2	SO3
	CLO4. Discuss the available scientific research reports/papers related to the Civil Engineering problems with high level of ethics and proficiency to provide better and innovative solutions. S3	SO4
	CLO5. Evaluate the effectiveness and performance of the provided system and solutions as well as identify its impact on society. S4	SO5
	CLO6. Demonstrate scientific integrity, ethical responsibility and academic values through the preparation and the discussion of the project outcomes. V1	SO6
	CLO7. Manage and implement all tasks and activities involved in the project work in a timely manner with high level of autonomy and responsibility. V2	SO7

Student Outcomes related to this Course	SO 1 Recognize advanced engineering knowledge, concepts, and techniques to identify, interpret, and analyze complex and real-life engineering problems. SO 2 Provide solutions for complex and real-life engineering problems through critical thinking and the use of modern engineering tools, and identify their impact on social, global, cultural, environmental, safety, and economic factors. SO 3 Investigate scientific research problems independently or through teamwork using critical thinking, appropriate techniques, advanced tools, and management principles. SO 4 Criticize and discuss scientific research reports /papers related to Civil Engineering issues with a high level of ethics proficiency and communication skills, independently, or as a teamwork. SO 5 Design novel advanced Civil Engineering systems and evaluate their performance, sustainability, and effectiveness for engineering practice and their impact in global, economic, environmental, and societal contexts SO 6 Demonstrate scientific integrity, ethical responsibility, and academic values in scientific publications, research projects, and thesis work. SO 7 Effectively manage, individually or in groups, specialized tasks and activities in coursework, projects, assignments, and research work with a high level of autonomy and responsibility.	
Topics Covered	List of Topics	Related CLOs
	1. State the research project topic that is related to real-life engineering problems.	CLO 1,7
	2. Provide a review of the literature related to the project topic	CLO 1-3,7
	3. Define the problem statements of the research project topic	CLO 2-4,7
	4. Identifying and outlining the research methodology	CLO 2-5,6,7
	5. Performing the research project methodology	CLO 3,6
	6. Discuss the theoretical and test results	CLO 4,6,7
	7. Writing conclusion and recommendation	CLO 5-6
	8. Prepare the final project report	CLO 1,6,7
	9. Final project defense Presentation	CLO 4,6,7
Textbook(s) and Other Required Material	<ul style="list-style-type: none">• Dependent on the chosen special topic(s)• Students are encouraged to search the internet for relevant research materials in reputable journals and scientific websites.	
Grading System	Review and evaluate the 1st draft of project progress reports.	15%
	Midterm presentation and evaluation of the 1st draft of project report.	30%
	Review and evaluate the 2nd draft of project progress reports.	15%
	Project Defence (or what have been achieved during the semester) through a presentation to the examination committee.	40%
Instructors	Appointed Supervisor	
Date of Review	November, 2024	