College of Engineering

Department of Civil Engineering

CE 600 M.Sc. Thesis

Credit and Contact hours	6 Credit hours
Required, or Elective	Required
Course Description	The master's Thesis course runs throughout a full year to implement all tasks and objectives as given in his research proposal and as was described in CE 596. During this course, the student will implement his research methodology, that may also include design and performing empirical and/or experimental study, in addition to prepare the final version of his M.Sc. thesis and present as well as defend the work in an oral presentation.
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. Recognize the advanced engineering knowledge, concepts and techniques made through the literature review in CE 596. K1	**SO1**
CLO2. Apply critical thinking, appropriate techniques, and advanced tools to analyze and provide solutions to complex and real-life research problems. S1	**SO2**
CLO3. Investigate scientific research problems related to Civil engineering fields through an appropriate research methodology and in an ethical manner. S2	**SO3**
CLO4. Design and evaluate advanced civil engineering systems/products by providing novel, effective and innovative solutions to complex and real-world research problems. S4	**SO5**
CLO5. Identify the effectiveness of the developed research solutions for engineering practices and 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. Defend the M.Sc. dissertation by demonstrating the novelty and contribution of the research to the state-of-the-art and answering audience and committee questions professionally. V1	**SO6**
CLO8. Mange and implement all tasks and activities involved in the research work in a timely manner with high level of autonomy and responsibility. V2	**SO7**

<table>
<tr><td>Student Outcomes related to this Course</td><td>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 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.</td></tr>
<tr><td>Topics Covered</td><td><table><tr><th>List of Topics</th><th>Related CLOs</th></tr><tr><td>1. Identifying and outlining the research methodology</td><td>CLO 1-4</td></tr><tr><td>2. Performing the research methodology</td><td>CLO 2-4,8</td></tr><tr><td>3. Discuss the theoretical and test results</td><td>CLO 6,7</td></tr><tr><td>4. Writing conclusion and recommendation</td><td>CLO 2,5,6</td></tr><tr><td>5. Prepare the final thesis report</td><td>CLO 1,2,6,7</td></tr><tr><td>6. Final thesis defense Presentation</td><td>CLO 6,7,8</td></tr></table></td></tr>
<tr><td>Textbook(s) and Other Required Material</td><td>Dependent on the chosen special topic(s)
Students are encouraged to search the internet for relevant research materials in reputable journals and scientific websites.</td></tr>
<tr><td>Grading System</td><td>Review and evaluate the 1st draft of M.Sc. thesis progress reports 15%
Midterm presentation and evaluation of the 1st draft of Thesis 30%
Review and evaluate the 2nd draft of M.Sc. thesis progress reports 15%
M.Sc. Thesis Defence (or what have been achieved during the semester) through a presentation to the examination committee 40%</td></tr>
<tr><td>Instructors</td><td>Appointed Supervisor</td></tr>
<tr><td>Date of Review</td><td>November, 2024</td></tr>
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