

## CE 518 Selected Topics in Engineering and Construction Management

<b>Credit and Contact hours</b>	3 / 3 (Lectures), 0 (Tutorials), 0 (Laboratory)								
<b>Required, or Elective</b>	Elective								
<b>Course Description</b>	This course will cover the contemporary and present theories and tools that will be beneficial for the students. This course covers unique topics of current interest in construction management. The course may feature a detailed look at a single topic or a series of focused topical presentations.								
<b>Prerequisites or Co-requisites</b>	None								
<b>Course Learning Outcomes</b>	<p>Students completing this course successfully will be able to:</p> <table> <thead> <tr> <th>Course Learning Outcomes (CLOs)</th><th>Related Student Outcomes (SO)</th></tr> </thead> <tbody> <tr> <td>CLO1. Apply updated tools and techniques in solving Construction Management problems. S1</td><td>SO2</td></tr> <tr> <td>CLO2. Apply new theories and IT tools by using appropriate learning strategies to solve real-life construction problems. S1</td><td>SO2</td></tr> <tr> <td>CLO3. Design and evaluate real construction projects taking into consideration the industry requirements and needs. S4</td><td>SO5</td></tr> </tbody> </table>	Course Learning Outcomes (CLOs)	Related Student Outcomes (SO)	CLO1. Apply updated tools and techniques in solving Construction Management problems. S1	SO2	CLO2. Apply new theories and IT tools by using appropriate learning strategies to solve real-life construction problems. S1	SO2	CLO3. Design and evaluate real construction projects taking into consideration the industry requirements and needs. S4	SO5
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CLO3. Design and evaluate real construction projects taking into consideration the industry requirements and needs. S4	SO5								
<b>Student Outcomes related to this Course</b>	<p>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.</p> <p>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</p>								
<b>Topics Covered</b>	<table> <thead> <tr> <th>List of Topics</th><th>Related CLOs</th></tr> </thead> <tbody> <tr> <td>1. Introduction to new techniques</td><td>CLO 1, 2</td></tr> <tr> <td>2. Software and IT solutions in construction management</td><td>CLO 3</td></tr> <tr> <td>3. Advanced management tools in engineering and construction management.</td><td>CLO 1, 2</td></tr> </tbody> </table>	List of Topics	Related CLOs	1. Introduction to new techniques	CLO 1, 2	2. Software and IT solutions in construction management	CLO 3	3. Advanced management tools in engineering and construction management.	CLO 1, 2
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<b>Textbook(s) and Other Required Material</b>	<ul style="list-style-type: none"> <li>References chosen by the course instructor based on the emerging topics covered in the course.</li> <li>Students are encouraged to read various journal papers related to research in Construction Engineering and Management, particularly those concerning new tools and techniques relevant to the course topics.</li> </ul>								

<b>Grading System</b>	Participation and Discussions	10%
	Course Project Assignments	30%
	Mid-term exams	20 %
	Final Exam	40 %
<b>Instructors</b>	Dr. Abdulrahman A. Bin Mahmoud	
<b>Date of Review</b>	March 2025	