

## CE 419 Construction Management

<b>Credit and Contact hours</b>	4 / 4 (Lectures), 1 (Tutorials), 0 (Laboratory)	
<b>Required, or Elective</b>	Required for a BSCE degree	
<b>Course Description</b>	Introduction to construction industry, Types and productivity of earthmoving equipment, Design of Concrete Formworks, Cost of equipment operation and maintenance, Construction Economics, Introduction to cost estimation. Construction Safety and Ethics, Improving productivity, Introduction to business and public policy, and Professional licensure.	
<b>Prerequisites or Co-requisites</b>	Ninth Level	
<b>Course Learning Outcomes</b>	Students completing this course successfully will be able to	
	<b>CLO</b>	<b>Related Student Outcomes (SO)</b>
	<b>CLO1:</b> Identify basic concepts in construction business that are related to construction management, construction safety; health hazards; ethical responsibility; and productivity improvement.	<b>SO4</b>
	<b>CLO2:</b> Determine earthwork volume and mass diagram for different earthmoving materials and characteristics of soil using modern engineering tools	<b>SO1</b>
	<b>CLO3:</b> Evaluate the productivity of earthmoving equipment for different types of real construction works with consideration of economic factors	<b>SO4</b>
	<b>CLO4:</b> Estimate equipment's operation and maintenance costs for real life projects considering economic and environmental constraints, and introduction to cost estimation.	<b>SO4</b>
	<b>CLO5.</b> Design concrete formworks for different constructions considering public safety, and economics factors.	<b>SO2</b>
	<b>CLO6.</b> Identify basic concepts in project management, business and public policy and explain the importance of professional licensure	<b>PC1</b>

<b>Student Outcomes related to this Course</b>	<p><b>SO1.</b> an ability to <b>identify, formulate, and solve complex engineering</b> problems by applying principles of engineering, science, and mathematics, and using <b>modern engineering tools</b>. [ABET 1]</p> <p><b>SO 2.</b> an ability to apply <b>engineering design</b> to produce solutions that meet specified needs with consideration of <b>public health, safety, and welfare</b>, as well as <b>global, cultural, social, environmental, and economic factors</b>. [ABET 2]</p> <p><b>SO 4.</b>an ability to recognize <b>ethical and professional responsibilities</b> in engineering situations and make <b>informed judgments</b>, which must consider the <b>impact of engineering solutions in global, economic, environmental, and societal contexts</b>. [ABET 4]</p> <p><b>PC1.</b> An ability to explain basic concepts in <b>project management, business, public policy</b>, and explain the importance of <b>professional licensure</b>. [ Program criteria ASCE]</p>																														
<b>Topics Covered</b>	<table border="1" data-bbox="507 801 1449 1527"> <thead> <tr> <th data-bbox="507 801 1220 846">List of Topics</th> <th data-bbox="1220 801 1449 846">Related CLOs</th> </tr> </thead> <tbody> <tr> <td data-bbox="507 846 1220 891">1. Introduction to construction Management issues</td> <td data-bbox="1220 846 1449 891">CLO1</td> </tr> <tr> <td data-bbox="507 891 1220 936">2. Professional Engineering Ethics</td> <td data-bbox="1220 891 1449 936">CLO1</td> </tr> <tr> <td data-bbox="507 936 1220 981">3. Earthmoving Materials and Operations</td> <td data-bbox="1220 936 1449 981">CLO2</td> </tr> <tr> <td data-bbox="507 981 1220 1025">4. Excavating and Lifting equipment</td> <td data-bbox="1220 981 1449 1025">CLO3</td> </tr> <tr> <td data-bbox="507 1025 1220 1070">5. Loading and Hauling equipment</td> <td data-bbox="1220 1025 1449 1070">CLO3</td> </tr> <tr> <td data-bbox="507 1070 1220 1115">6. Compacting and Finishing equipment</td> <td data-bbox="1220 1070 1449 1115">CLO3</td> </tr> <tr> <td data-bbox="507 1115 1220 1160">7. Safety in construction sites</td> <td data-bbox="1220 1115 1449 1160">CLO1</td> </tr> <tr> <td data-bbox="507 1160 1220 1205">8. Concrete Construction (Formwork Design)</td> <td data-bbox="1220 1160 1449 1205">CLO5</td> </tr> <tr> <td data-bbox="507 1205 1220 1249">9. Construction Economics</td> <td data-bbox="1220 1205 1449 1249">CLO4</td> </tr> <tr> <td data-bbox="507 1249 1220 1294">10. Introduction to Cost Estimation..</td> <td data-bbox="1220 1249 1449 1294">CLO4</td> </tr> <tr> <td data-bbox="507 1294 1220 1339">11. Introduction to Project Management</td> <td data-bbox="1220 1294 1449 1339">CLO6</td> </tr> <tr> <td data-bbox="507 1339 1220 1384">12. Contract Construction</td> <td data-bbox="1220 1339 1449 1384">CLO1</td> </tr> <tr> <td data-bbox="507 1384 1220 1429">13. Improving Productivity and Performance</td> <td data-bbox="1220 1384 1449 1429">CLO1</td> </tr> <tr> <td data-bbox="507 1429 1220 1527">14. Introduction to Business and Public Policy and Professional Licensure</td> <td data-bbox="1220 1429 1449 1527">CLO6</td> </tr> </tbody> </table>	List of Topics	Related CLOs	1. Introduction to construction Management issues	CLO1	2. Professional Engineering Ethics	CLO1	3. Earthmoving Materials and Operations	CLO2	4. Excavating and Lifting equipment	CLO3	5. Loading and Hauling equipment	CLO3	6. Compacting and Finishing equipment	CLO3	7. Safety in construction sites	CLO1	8. Concrete Construction (Formwork Design)	CLO5	9. Construction Economics	CLO4	10. Introduction to Cost Estimation..	CLO4	11. Introduction to Project Management	CLO6	12. Contract Construction	CLO1	13. Improving Productivity and Performance	CLO1	14. Introduction to Business and Public Policy and Professional Licensure	CLO6
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<b>Textbook(s) and Other Required Material</b>	S.W. Nunnally, Construction Methods and Management, Prentice-Hall, Inc																														
<b>Grading System</b>	<table data-bbox="466 1684 922 1854"> <tr> <td>Two Mid-term exams</td> <td>40 %</td> </tr> <tr> <td>Quizzes, assignments</td> <td>10%</td> </tr> <tr> <td>Project</td> <td>10%</td> </tr> <tr> <td>Final Exam:</td> <td>40%</td> </tr> </table>	Two Mid-term exams	40 %	Quizzes, assignments	10%	Project	10%	Final Exam:	40%																						
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<b>Instructors</b>	Dr. Abdullah M Alsugair (2A45), email; <a href="mailto:amsugair@ksu.edu.sa">amsugair@ksu.edu.sa</a>																														
<b>Date of Review</b>	10 April 2021																														