



Course Competencies Template - Form 112

GENERAL INFORMATION											
Name:	Phone #:										
Course Prefix/Number: ETC 2450	Course Title: Concrete Constructions										
Number of Credits: 3											
Degree Type	<input type="checkbox"/> B.A. <input type="checkbox"/> B.S. <input type="checkbox"/> B.A.S. <input type="checkbox"/> A.A. <input type="checkbox"/> A.S. <input type="checkbox"/> A.A.S. <input type="checkbox"/> C.C.C. <input type="checkbox"/> A.T.C. <input type="checkbox"/> V.C.C.										
Date Submitted/Revised:	Effective Year/Term:										
<input type="checkbox"/> New Course Competency <input type="checkbox"/> Revised Course Competency											
Course to be designated as a General Education course (part of the 36 hours of A.A. Gen. Ed. coursework): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
College Wide General Education Student Learning Outcomes (CWGESLO) legend: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">1. Communication</td> <td style="width: 50%;">6. Social Responsibility</td> </tr> <tr> <td>2. Numbers / Data</td> <td>7. Ethical Issues</td> </tr> <tr> <td>3. Critical Thinking</td> <td>8. Computer / Technology Usage</td> </tr> <tr> <td>4. Information Literacy</td> <td>9. Aesthetic / Creative Activities</td> </tr> <tr> <td>5. Cultural / Global Perspective</td> <td>10. Environmental Responsibility</td> </tr> </table>		1. Communication	6. Social Responsibility	2. Numbers / Data	7. Ethical Issues	3. Critical Thinking	8. Computer / Technology Usage	4. Information Literacy	9. Aesthetic / Creative Activities	5. Cultural / Global Perspective	10. Environmental Responsibility
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Course Description (limit to 50 words or less, <b>must correspond with course description on Form 102</b> ):  This course equips students with fundamental knowledge on the use of concrete as a building material. Topics include design of concrete mixtures, production and testing, placement, concrete construction techniques, and procedural quality control measures of concrete construction projects.											
Prerequisite(s): ETG 2502	Corequisite(s):										

**Course Competencies:**

Competency 1:	CWGESLO
The student will demonstrate the understanding of concrete materials and mix design by:	1, 2, 4, 8
a) Defining the properties and characteristics of concrete materials, including aggregates, cement, water, and admixtures. b) Designing concrete mixes that meet specific project requirements.	
Competency 2:	CWGESLO
The student will demonstrate hand-on skills in concrete production and testing by:	2, 8
a) Mixing and transporting concrete samples. b) Performing tests to assess the quality and properties of fresh and hardened concrete, including slump tests, compressive strength tests, and durability assessments.	
Competency 3:	CWGESLO
The student will demonstrate proficiency in formwork and shoring by:	1, 2, 4, 8
a) Designing formwork and shoring systems for various concrete structures. b) Explaining safety precautions and practices related to formwork and shoring.	
Competency 4:	CWGESLO
The student will demonstrate proficiency in Concrete Placement and Finishing by:	1, 2, 4, 8

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- a) Explaining techniques for placing, consolidating, and finishing concrete, including screeding, floating, and troweling.
- b) Explaining methods for curing concrete to ensure proper hydration and strength development.

<b>Competency 5:</b>	<b>CWGESLO</b>
The student will demonstrate an understanding in reinforcement installation by:	1, 3, 4, 8
<ul style="list-style-type: none"> <li>a) Explaining the importance of reinforcement in concrete structures.</li> <li>b) Explaining how to install and tie reinforcement bars correctly, following engineering drawings and specifications.</li> <li>c) Being able to identify and correct errors in reinforcement installations.</li> </ul>	

<b>Competency 6:</b>	<b>CWGESLO</b>
The student will demonstrate an understanding in concrete constructions techniques by:	1, 4, 8
<ul style="list-style-type: none"> <li>a) Explaining various construction techniques for concrete structures, such as cast-in-place concrete, precast concrete, and shotcrete.</li> <li>b) Explaining the advantages and limitations of each technique.</li> </ul>	

<b>Competency 7:</b>	<b>CWGESLO</b>
The student will demonstrate proficiency in concrete repair and rehabilitation by:	1, 2, 3, 4, 8
<ul style="list-style-type: none"> <li>a) Describing methods and materials used in the repair and rehabilitation of deteriorated concrete structural elements.</li> <li>b) Assessing the condition of existing concrete.</li> <li>c) Designing appropriate repair strategies of concrete structural elements.</li> </ul>	

<b>Competency 8:</b>	<b>CWGESLO</b>
The student will demonstrate proficiency in quality control by:	2, 3, 4, 8
<ul style="list-style-type: none"> <li>a) Designing quality control measures to monitor concrete quality throughout the construction process.</li> <li>b) Identifying and addressing common quality issues and defects in concrete construction processes.</li> </ul>	

<b>Competency 9:</b>	<b>CWGESLO</b>
The student will demonstrate proficiency in project managing by:	1, 2, 8
<ul style="list-style-type: none"> <li>a) Creating a Concrete Construction project including scheduling, cost estimation, and resource allocation.</li> <li>b) Explaining how to plan and execute concrete construction projects efficiently.</li> </ul>	

<b>Competency 10:</b>	<b>CWGESLO</b>
The student will demonstrate proficiency in communication and collaboration by:	1, 4, 6
<ul style="list-style-type: none"> <li>a) Showing written and verbal communication skills for effective collaboration with engineers, teams, clients, and regulatory agents.</li> <li>b) Interpreting and communicating construction drawings and specifications.</li> </ul>	

<b>Competency 11:</b>	<b>CWGESLO</b>
The student will demonstrate understanding of ethical considerations by:	1, 6, 7
<ul style="list-style-type: none"> <li>a) Showing understanding of ethical responsibilities of professionals in the construction industry.</li> <li>b) Explaining ethical standards and codes of conduct in the construction industry.</li> </ul>	

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