

To: The Faculty of the College of Engineering

From: Construction Engineering & Management

Date: February 24, 2021

RE: Revised Plan of Study in the Construction Engineering & Management curriculum (B.S. CNE);  
reduction of credit hours

The faculty of Construction Engineering & Management has approved a change in the plan of study for the B. S. CNE curriculum. The revised plan of study reduces the total number of credit hours required from 126 to 125. This is accomplished by changing the credit hour requirements for a reinforced concrete design course from 4 to 3.

**Summary of Changes:**

1. Allow students to take any ABET recognized reinforced concrete design course, 3 credit hour minimum.
2. Remove CE 47300 – Reinforced Concrete Design as the only reinforced concrete design course.

**Reason:**

The CEM (Construction Engineering and Management) faculty have recognized that Purdue University Lyles School of Civil Engineering's Reinforced Concrete Design course (CE 47300) is uniquely structured in relationship to the delivery method (structure) relative to peer institutions. In recent semesters, it has become increasingly obvious that there are differences as students seek alternate options for taking the course due to academic and professional circumstances associated with the COVID-19 pandemic, as a result we have evaluated the differences and provide this EFD to address. The major difference is that the Purdue course is 4-credit hours and nationally similar courses are 3-credit hours. It is important for student success and professional development for students to take a reinforced concrete design course from any ABET recognized program which may include an on-line course.

The Lyles School of Civil Engineering's Reinforced Concrete Design course (CE 47300) includes a lab component (1-cr) which historically has provided additional problem sets and theoretical calculation exercises. There was a time (recent 10 yrs) in which the lab component provided hands-on experience with reinforced concrete materials in addition to the exercises described. The hands-on experience has been eliminated in the past few years. Investigation into other ABET programs by the CEM faculty recognized peer institutions offer a similar course which is mostly 3 credit hours minimum (fewer than 10% of the 268 ABET accredited programs offer a 4-cr hr reinforced concrete design course). The additional exercises are a value add but considering that CEM students receive sufficient exposure to reinforced concrete materials in one of their three required internships, it is the objective of this EFD to fundamentally normalize the minimum requirement for degree requirements for reinforced concrete to 3-cr hr versus 4-cr hr ultimately reducing the CEM degree requirement from 126 hrs to 125hrs and reducing the burden for students relative to academic mobility.

The revised plan of study will become effective fall 2021 for all entering freshmen. Sophomore students enrolling in Construction Engineering will have the option to follow the new POS while students currently enrolled in Construction Engineering will utilize a temporary solution which addresses the current POS while incorporating the best features of the revised POS.

*Makarand Hastak*

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Makarand Hastak, Professor and Head  
Division of Construction Engineering & Mgmt.

<b>Present</b>	<b>Total Credit Hours</b>	<b>126</b>	<b>Proposed</b>	<b>Total Credit Hours</b>	<b>125</b>
<i>Courses</i>		<i>Credit Hours</i>	<i>Courses</i>		<i>Credit Hours</i>
<b>Mathematics and Basic Sciences</b>			<b>Mathematics and Basic Sciences</b>		
Calculus: MA16500, 16600, 26100, 26600		<b>16</b>	Calculus: MA16500, 16600, 26100, 26200		<b>16</b>
Chemistry: CMH 11500		<b>4</b>	Chemistry: CHM 11500		<b>4</b>
Physics: PHYS 17200, 24100		<b>7</b>	PHYS 17200, 24100		<b>7</b>
Statistics: STAT 51100		<b>3</b>	Statistics: STAT 51100		<b>3</b>
Science Electives:		<b>3</b>	Science Electives:		<b>3</b>
<b>Engineering Tools and Skills</b>			<b>Engineering Tools and Skills</b>		
ENGR 13100, 13200, CGT 16400		<b>6</b>	ENGR 13100, 13200, CGT 16400		<b>6</b>
<b>Professional Development</b>			<b>Professional Development</b>		
CEM 19100*, 29100*, 39100*, 32400, 42500†, 48500		<b>10</b>	CEM 19100*, 29100*, 39100*, 32400, 42500†, 48500		<b>10</b>
<b>General Education</b>			<b>General Education</b>		
Students must satisfy the requirements of the College of Engineering's General Education Program. Selections must be chosen from approved lists in accordance with counsel from an advisor and include courses in oral and written communication and management (MGMT 20000 & 30400 and CEM 28000 & 38000). The remaining credit hours needed to attain the minimum of 24 should be chosen carefully.		<b>24</b>	Students must satisfy the requirements of the College of Engineering's General Education Program. Selections must be chosen from approved lists in accordance with counsel from an advisor and include courses in oral and written communication and management (MGMT 20000 & 30400 and CEM 28000 & 38000). The remaining credit hours needed to attain the minimum of 24 should be chosen carefully.		<b>24</b>
<b>Core Engineering Courses</b>			<b>Core Engineering Courses</b>		
CE 20300, 23100, 27000, 29700, 29800, 34000/34300, 37100, 38300, 47300; ME 20000, CEM 20100, 30100, 32100, 45500; and three technical electives courses in CEM		<b>53</b>	CE 20300, 23100, 27000, 29700, 29800, 34000/34300, 37100, 38300, 47300 (or equivalent ABET course); ME 20000, CEM 20100, 30100, 32100, 45500; and three technical electives courses in CEM		<b>52</b>

\* 19100, 29100, 39100 are zero credit hour internships required by the program.

† 42500 is the CNE Capstone course, repeatable across two semesters