

 Lebanese American University	CIE 306 Concrete Structures I	
School of Engineering & Architecture	Course Title: Concrete Structures I	3 credits
Department of CIVIL ENGINEERING	Hours: 9:30-10:45; 11 – 12:15TTH	Room: Eng 403,5
Course syllabus	Instructor: Camille A. Issa,PhD.,PE.	Term: Spring 14
	Office Hours: 10-11 MW/1-2TTR	Office: 306 Bassil
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Catalog Description

Beams: Single Reinforced, Double Reinforced, and T- Beams; One-Way Slab Systems: Solid and Joist Slabs; Shear Reinforcement; Development Length, Bond, and Anchorage; Short Columns.

Prerequisites

CIE 302 Structural Analysis

Co-requisites

CIE307 Concrete Structure I -SOFT

Courses that require this course as a prerequisite

CIE512 Concrete Structures II

Textbooks and/or other required material

Concrete Design Manuscript by Camille A. Issa, Ph.D., P.E., F. ASCE
ACI Building Code – 2011

Grading Policy

2 Tests	50%
Homework/Participation	10%
Final Exam	40%

No make up tests will be given. For excused students, Final Exam will replace missed tests. Unexcused absentees will be awarded a zero grade for missed tests.

Letter grades will be assigned as follows:	A	90 – 100
	A⁻	87 – 89
	B⁺	83 – 86
	B	80 – 82
	B⁻	77– 79
	C⁺	73 – 76
	C	70 – 72
	C⁻	67 – 69
	D⁺	63 – 66
	D	60– 62
	F	0 – 59

Course learning objectives (Instructional Objectives)

At the end of the course, the students will be able to:

1. Design of Singly Reinforced Beams
2. Design of Doubly Reinforced Beams
3. Design of T-Beams
4. Design of One-Way Slabs: Solid and Joist
5. Design of Beams for Shear Reinforcement
6. Design of Short Columns

Topics covered

BEAMS

Design and Analysis of Single Reinforced Beams
 Design and Analysis of Double Reinforced Beams
 Design and Analysis of T-Beams

ONE-WAY SLABS

Design and Analysis of One-Way Solid Slabs
 Design and Analysis of Joist Slabs

SHEAR REINFORCEMENT

Analysis and Design for Shear Reinforcement

BOND, ANCHORAGE, and DEVELOPMENT LENGTH

Flexural Bond Design
 Anchorage Requirements
 Bar Cutoff

COLUMNS

Design and Analysis of Axially Loaded Short Columns
 Design and Analysis of Axially Loaded Short Columns with Eccentricity

NOTE: Coverage of the syllabus material is contingent upon the availability of time and student progress in grasping the subjects covered.

Structure

	Description
Lecture	Two 75 minutes lectures per week
Laboratory	none
Medium	all material explained in class and on the blackboard
Tests	2 tests, 90 minutes each
Final	180 minutes, comprehensive, closed book
Homework	6 assignments , after grading, solution is posted

Contribution of course to meeting the professional component

Professional Component	Credits
Mathematics and Basic Sciences	0
Engineering Topic	3
General Education	0

Relationship of course to program outcomes

0 = Very little or no emphasis 1 = Some emphasis 2 = Moderate emphasis 3 = Substantial emphasis		
3	a	an ability to apply knowledge of mathematics, science, and engineering
0	b	an ability to design and conduct experiments, as well as to analyze and interpret data
3	c	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
1	d	an ability to function on multi-disciplinary teams
3	e	an ability to identify, formulate, and solve engineering problems
0	f	an understanding of professional and ethical responsibility
2	g	an ability to communicate effectively
1	h	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
2	i	a recognition of the need for, and an ability to engage in life-long learning
0	j	a knowledge of contemporary issues
3	k	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

General Remarks

1. All material for the course will be posted on the Engineering Web
2. Homework is meant as a practice and learning tool rather than a grade achieving tool, it is worth only 10 %. Start your work on the HW as soon as it is assigned.
3. Daily review and keeping up with the material covered in class is strongly advised try to avoid crunching the material just before the tests.

Additional Notes

Academic Integrity	<ul style="list-style-type: none"> ❖ LAU expects all students to maintain the highest level of integrity. Cheating or plagiarism will not be tolerated. University policies regarding academic integrity are available in http://www.lau.edu/policies ❖ The instructor will adhere to all LAU policies regarding academic integrity as stated. ❖ All work must be the result of students' own efforts. ❖ Students who are suspected of plagiarism or other violations of academic
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	integrity codes will face investigation. Those found guilty will face disciplinary action. Repeated offenses will result in permanent expulsion from the University.
<i>Homework Policy</i>	Homework must be neat and legible or it will not be graded, and must be turned in at the beginning of class on the day it is due, with no exceptions.
<i>Course Website</i>	Syllabus, solution of homework, solution of tests, solution of previous tests, handouts, and any relevant material are placed on “courses online” at http://services.sea.lau.edu.lb/academia/courses/main.asp
<i>Cheating</i>	Students caught cheating on an exam receive a grade of zero on the exam in the first cheating attempt and a warning. Students caught cheating for the second time in the same course receives an F grade in the course and a second warning.

Person who prepared this description and date of preparation

Camille A. Issa, PhD, P.E., F.ASCE

February17, 2014