

CEE 142L: REINFORCED CONCRETE STRUCTURES LAB

Professor:

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Teaching Assistant:

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Course Information:

Enrollment number: 147-570-200
Lecture 2 hours/week; Laboratory 4 hours/week (4 units)
Time/Room: Tue/Thur. 12:00- 3:50PM ENGR I 1154

Course Objective and Outline:

The objective of the course is to improve your understanding of the behavior of reinforced concrete structural elements by conducting four experiments. The experiments include: (A) Simply-supported Beam with a point load at midspan, (B) Pinned-end slender column test under flexure and axial load, (C) Simply-supported two-way slab test under uniform load, and (D) Beam-column joint test under reversed cyclic loads. Experimental results will be compared with theory and building code requirements. Writing and presentation skills will also be honed.

Course Organization:

Homework will be assigned for each experiment and submitted by each individual prior to execution of the experiment. Late homework will not be accepted (no exceptions).

The experiments and lab reports will be conducted in groups of four. The lab report will be due for each experiment two weeks after the completion of the experiment. One lab report will be submitted by each group – late lab reports will be marked down 5% for each day late beyond the due date.

Each group also will be responsible for preparing and delivering a Powerpoint presentation of one experiment. All group members must participate approximately equally in the oral presentation, and each presenter is responsible for the quality and accuracy of the material they present.

Office Hours:

J. Wallace:	M/W	3:30 - 4:30pm	5731C Boelter Hall
Murat Melek:	TBA		3066C Engineering I

Grading:

Lab Reports	50%	Lab Participation	10%
Homework	20%	Final Presentation	20%

Prerequisites:

C&EE142 – Reinforced Concrete Design

Texts:

MacGregor, J. G., “Reinforced Concrete: Mechanics And Design,” Third Edition, 1997.
“Building Code Requirements for Structural Concrete: ACI 318-99,” American Concrete Institute, Farmington Hills, MI.

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Laboratory Report Layout:

1. Cover Page
2. Abstract
3. Table of Contents
4. List of Figures
5. List of Tables
6. Introduction
7. Objective
8. Scope
9. Background and Theory
10. Experimental Procedure
 - a. Test Set-up
 - b. List of equipment
 - c. Sensor calibration information
 - d. Data collection
11. Analysis of Results
 - a. Theoretical
 - b. Experimental
12. Discussion of Results
13. Conclusions
14. Appendix A: Data
15. Appendix B: Secondary Calculations
16. Appendix C: Error Analysis

The above layout is a guide, and may be modified as appropriate to meet your objectives.

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Table 1: Group Members

GROUP I	GROUP II	GROUP III	GROUP IV

Table 2: Sequence of Experiments

BEAM	JOINT	SLAB	COLUMN
COLUMN	BEAM	JOINT	SLAB
SLAB	COLUMN	BEAM	JOINT
JOINT	SLAB	COLUMN	BEAM