

CE 521 REINFORCED CONCRETE MEMBERS

Fall 2025-2026

Instructor: Dr. Cemalettin Dönmez
Izmir Institute of Technology, Civil Engineering Department
Room #: C-207 Phone #: 750-6811, cemalettindonmez@iyte.edu.tr

Class Time: Tentative hours, Monday 9:45-12:30

Course Objectives:

The objective of the course is to introduce the details of the reinforced concrete member design with an emphasis on behaviour and with a critical review of specifications. The course is designed for students with basic reinforced concrete knowledge.

Prerequisites: Graduate standing or consent of instructor

Recommended

Text:

- TS 500-2000 Betonarme Yapıların Tasarım ve Yapım Kuralları
- ACI 318-11 Building Code Requirements for Structural Concrete and Commentary
- Reinforced Concrete Mechanics and Design, 3rd Edition, James G. MacGREGOR
- Reinforced Concrete , METU, Uğur ERSOY
- Reinforced Concrete Fundamentals, Phil Moss FERGUSON
- Assigned Readings

Tentative Course Outline:

1. Structural Design Goals / Performance Objectives / Design Codes
2. RC materials
3. Flexure (Beams)
4. Flexure and Axial Load (Columns)
5. Shear
6. Serviceability and Durability Issues
7. Anchorage
8. Shear Walls
9. Deep Beams

Grading:	Assignments (7*9%)	63%
	Final Exam	40%
		103%

Note: Assignments should be the result of individual students own work. There will be zero tolerance for assignment sharing among students.

Computer Use:

There will be assignments with computer applications. Beginning to medium level programming capability is needed.

Presentation Standards for Assignments:

It is expected that as graduate students, you already know and follow professional practices for presentation of your work. However, the following presentation standards are provided as minimum requirements. These standards must be followed in order to receive full credit for your work.

1. Work must be prepared on a clean standard paper. Please use pencil to avoid crossing out mistakes.
2. Begin each problem on a new sheet of paper. Use only one side of the paper.
3. The complete solution to each problem must be neat and legible. Homework that cannot be deciphered will receive a warning the first time and a grade of zero if this continues to be a problem.
4. Provide a title page with course and section number, full name and signature, assignment number, date assigned and date due
5. For additional pages' use heading with name, date, course number and page number.
6. Use consistent units and state them clearly.
7. Organization of problem solution:
 - Problem: Give problem number.
 - Given: State known facts about the problem.
 - Required: State what you intend to find. Be clear and concise.
 - Solution: Present the solution in a stepwise logical fashion. Add comments for clarity and clearly list all assumptions. Include appropriate diagrams and sketches with pertinent dimensions, etc. Clearly indicate the answer. UNITS!

Late Assignment Policy:

All homework assignments must be turned in printed form at the beginning of class on the day the assignment is due. Homework assignments turned in after the beginning of class will lose 10% of the total points possible for each day it is late (i.e., an assignment received at 5 pm on the day it is due will lose 10%). No credit will be given for a homework assignment turned in later than 3 days after the date it is due.