İzmir Institute of Technology - Department of Civil Engineering
CE 321 Introduction to Structural Mechanics - Fall 2025-2026 Course Outline

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COURSE INSTRUCTOR	Dr. İzzet Özdemir Department of Civil Engineering Office Hours: To be announced	*Office: C-206* *E-mail:* izzetozdemir@iyte.edu.tr
COURSE ASSISTANTS	Cennet Yeşilyurt Department of Civil Engineering Office Hour: To be announced	*Office: D-108* *E-mail:cennetyesilyurt@iyte.edu.tr*
COURSE SCHEDULE	Tuesday 13:30 - 15:15, Room: B-213 Wednesday 14:30 - 15:15, Room: B-212	
COURSE CONDUCT	The course will be taught in class at the campus. Teams page is going to be activated and used throughout the semester.	

TEXTBOOK & REFERENCE

- Mechanics of Materials, R.C. Hibbeler, 9th Edition, Pearson, 2014 (**TB 1**).
- Structural Analysis, R.C. Hibbeler, T.K. Hwee, 8th Edition, Pearson, 2012 (**TB 2**).
- Fundamentals of Structural Analysis, H.H. West, John Wiley & Sons, 1993.

OBJECTIVES

The objective is to learn the fundamental principles of structural mechanics and their use for analysis of engineering structures.

COURSE CONTENT

- Unsymmetrical Bending of Beams (TB 1 , Chapter 6 (Section 6.5))
- Analysis of Determinate Structures (TB 2 , Chapter 2, 3, 4, 5)
    - Structural behavior of trusses, beams, frames, arches and cables
    - Concept of stability and determinacy
    - Static analysis of beams, frames, arches and cables
- Shear Centre (TB 1 , Chapter 7 (Sections 7.4, 7.5))
- Work and Energy Principles (TB 2 , Chapter 8 & Class notes)
    - Principles related to work
        - Work and complementary work
        - Principle of virtual work
        - Displacement calculations using the unit-dummy load method
    - Principles related to energy
        - Potential and complementary potential energy
        - Castigliano's theorems
        - Maxwell's reciprocal theorem, Betti's law
- Introduction to the Force Method of Analysis (TB 2, Chapter 9)

GRADING

There will be 2 term exams (% 30 each) and a final (% 40). The exam dates will be announced timely.