

İzmir Institute of Technology / Department of Civil Engineering
CE 322 Introduction to Structural Analysis / Fall 26-27 - Course Outline

COURSE

INSTRUCTOR Dr. Korkut Kaynardag

Department of Civil Engineering

Office Hour: Thursday 3:00 to 5:30

Office: C220

E-mail: korkutkaynardag@iyte.edu.tr

COURSE

ASSISTANT Ergun Alper Kurt

Department of Civil Engineering

Office Hour: [TBA]

Office: [TBA]

E-mail: ergunkurt@iyte.edu.tr

COURSE

SCHEDULE Friday 9:45 to 12:30 Room: B212

COURSE PAGE

A course page (Teams, or an equivalent platform) will be activated at the start of the semester and used throughout for announcements, lecture material, and problem sets.

TEXTBOOK/REFERENCES

- Structural Analysis, A. Kassimali, 5th Edition, Cengage Learning, 2015, (Textbook),
- Structural Analysis, R.C. Hibbeler, 10th Edition, Pearson, 2017,
- Structural Analysis: Using Classical and Matrix Methods, J.C. McCormac & J.K. Nelson, 4th Edition, Wiley, 2006,
- Matrix Structural Analysis, W. McGuire, R.H. Gallagher & R.D. Ziemian, 2nd Edition, Wiley, 2000.

OBJECTIVES

The objective is to learn the displacement based structural analysis techniques commonly used for the analysis of statically indeterminate structures. By the end of the course, students should be able to:

- Determine the degree of static and kinematic indeterminacy of beams and frames,
- Analyze indeterminate beams and frames using the slope deflection method,
- Analyze indeterminate beams and frames using the moment distribution method,
- Formulate member and structure stiffness matrices for the direct stiffness method,
- Assemble and solve the global stiffness equations for beams and frames using the direct stiffness method.

COURSE CONTENT

- Introduction to Structural Analysis
- Deflections
- Displacement Method of Analysis: Slope-Deflection Equations
- Displacement Method of Analysis: Moment-Distribution
- Truss Analysis Using the Stiffness Method
- Beam and Frame Analysis Using Stiffness Methods

- Influence Lines
- Introduction to SAP200 – Structural Analysis and Design Program

GRADING

The tentative overall grade constitution is as follows:

- Midterm: 30 % *Week 7, tentative*
- Quizzes: 20 % *Throughout the semester*
- Homework: 10 % *Throughout the semester*
- Final Examination: 40 % *University final exam period, tentative*

COURSE CONDUCT

Attendance to lectures is COMPULSORY as stated by the regulations of İzmir Institute of Technology.

Academic integrity is expected in accordance with İYTE's academic integrity and student conduct regulations.

A makeup examination is offered only with a documented excuse recognized by the university, arranged in advance whenever possible.