

MIDDLE EAST TECHNICAL UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
COURSE OUTLINE – FALL 2009

CE 383 – STRUCTURAL ANALYSIS

INSTRUCTORS:

01 – UĞURHAN AKYÜZ - Room K2-204
02 – AYŞEGÜL ASKAN GÜNDOĞAN - Room K7-104
03 – AHMET YAKUT - Room K2-209
04 – MURAT ALTUĞ ERBERİK - Room K7-103
05 – OĞUZHAN HASANÇEBİ - Room K2-211

Teaching Assistants:

Beliz Uğurhan - Room K6-108, İsmail Ozan Demirel - Room K2-105

Textbook:

R.C.Hibbeler Structural Analysis, Sixth Edition, Prentice Hall, 2006.

Reference Books:

L. Geschwinder *Fundamentals of Structural Analysis, Wiley, 2002 (Second Edition)*
K.Leet, C.-M. Uang *Fundamentals of Structural Analysis, McGraw Hill, 2002*
C.K.Wang *Intermediate Structural Analysis, McGraw Hill, 1983.*
L.P.Felton, R.B.Nelson *Matrix Structural Analysis, Wiley, 1997.*
M.Hoit *Computer Assisted Structural Analysis and Modeling, Prentice Hall, 1995.*
R.E.Sennett *Matrix Analysis of Structures, Prentice Hall, 1994.*

Entire course will follow the Textbook. Content of the course and reading assignments are given below, refer to Chapters and Sections in the Textbook. All solved examples in the Textbook, related to the sections included in the course, are to be considered as also solved on the board in the classroom.

There will be problem solving tutorials taught by the Teaching Assistants. There will be two term tests and a final examination.

There will be six homeworks during the semester. Best five grades out of six will be included in the final grade; therefore there will be no late submission.

Do not collaborate in solving assignments. Otherwise you may see your submission returned with UNACCEPTABLE grade assigned to it.

Information regarding the course can be found at the web site www.ce.metu.edu.tr/~ce383. Homework assignments and additional examples may be downloaded from here. Please check web site regularly.

Composition of the Final Mark: Term Tests (55%); Final Examination (40%), Homeworks (5%)

Attendance and problem solving experience are essential for success in this fundamental course.

COURSE CONTENT

Ch	TOPIC	Sections	Assigned Problems
1	Types of Structures and Loads	1,2	
2	Analysis of Statically Determinate Structures	3,4	9,10,13,14,15
4	Internal Loadings Developed in Structural Members	1*,2*,3*,4*,5*	7,9,25,42,63,66
9	Deflections Using Energy Methods	1*,2*,3,4,5	1,3,9,11,35,46,50,51,54,55,57,93
10	Analysis of Statically Indeterminate Structures by the Force Method	1,2,3,4,5,6	1,5,11,19,23,30,34,35
11	Displacement Method of Analysis: Slope-Deflection Equations	1,2,3,4,5	1,13,18,26
12	Displacement Method of Analysis: Moment Distribution	1,2,3,4	1,9,11,14
14	Truss Analysis Using the Stiffness Method	1,2,3,4,5,6	1,2,3,14,15
15	Beam Analysis Using the Stiffness Method	1,2,3,4	1,5,7,13
16	Plane Frame Analysis Using the Stiffness Method	1,2,3,4	1,13,15
A	Matrix Algebra for Structural Analysis	A1*,A2*,A3*,A4*,A5*	

*Reading Assignments