



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Structural Analysis					
CODE: CE321		SEMESTER: FALL			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: - CO-REQUISITES: -		THEORY	PRACTICAL	CREDIT	ECTS
WEEKLY HOURS: 4		4	0	4	5

CONTENT OF THE COURSE:

Types of structures, Supports and loads. Idealization of structures and loads. Geometric stability and determinacy. Analysis of determinate trusses, beams, plane frames and arches; reaction computation; axial force, shear force and bending moment diagrams. Influence lines of determinate structures. Introduction to indeterminate structures.

OBJECTIVE OF THE COURSE:

To enable students to understand and apply the concepts of structural analysis on different types of statically determinate structures (beams, frames, trusses) subjected to dead loads and moving loads.

WEEKLY SCHEDULE AND PRE-STUDY PAGES

Week	Topics
1	Chapter A: Types of Structures and Loads
2	Chapter A: Types of Structures and Loads
3	Chapter A: Types of Structures and Loads
4	Chapter B: Analysis of Statically Determinate Structures
5	Chapter B: Analysis of Statically Determinate Structures
6	Chapter C: Analysis of Statically Determinate Trusses
7	Chapter C: Analysis of Statically Determinate Trusses
8	Midterm Week
9	Chapter D: Internal Loads Developed in Structural Members
10	Chapter D: Internal Loads Developed in Structural Members
11	Chapter D: Internal Loads Developed in Structural Members
12	Chapter E: Influence Lines for Statically Determinate Structures
13	Chapter E: Influence Lines for Statically Determinate Structures
14	Chapter E: Influence Lines for Statically Determinate Structures

- **TEXTBOOK: Russell G. Hibbeler, “Structural Analysis”, 10th edition, Pearson Prentice – Hall, 2017.**

REFERENCE BOOKS

- Chajes, “Structural Analysis”, Latest edition, Pearson Prentice – Hall.
- Reddy C.S., “Basic Structural Analysis”, Tata McGraw Hill, (Latest edition).
- Pandit & Gupta, “Matrix Methods in Structural Analysis”, Tata McGraw Hill.

- Junnarkar S.B., “Structural Mechanics”, Vol II, Charotar Publishers, (Latest edition).
- Wang C.K., “Intermediate Structural Analysis”, Tata McGraw Hill, (Latest edition).
- Negi L.S. & Jangid R.S., “Structural Analysis”, Tata McGraw Hill, (Latest edition).
- Yuan Yu Hsieh, “Elementary Theory of Structures”, Pearson Prentice Hall, (Latest edition).
- Chajes A., “Structural Analysis”, Pearson Prentice Hall, (Latest edition).

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	0	3	3	3	0	0	0	0	0	0	0
LO2	0	3	3	3	0	0	0	0	0	0	0
LO3	0	3	3	3	0	0	0	0	0	0	0
LO4	0	3	3	3	0	0	0	0	0	0	0
LO5	0	3	3	3	0	0	0	0	0	0	0
PO: Program Outcomes LO: Learning Outcomes Values: 0: None 1: Low 2: Medium 3: High											

INSTRUCTOR(S):	Assoc. Prof. Dr. Amjad Khabaz
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:

- LO1:** To analyze statically determinate structures (beams, frames and trusses)
LO2: To draw normal force, shear force and bending moment's diagrams
LO3: To construct influence lines functions at critical sections and determination the maximum values of these functions due to different types of moving loads in statically determinate structures
LO4: To calculate the forces at truss members using section and joint method
LO5: To get an idea about indeterminate structures

CONTRIBUTION OF THE COURSE TOWARDS PROVIDING VOCATIONAL EDUCATION: In this course, students gain the ability to use and apply basic principles and advanced analysis methods for load analysis of structures.