

Structure Analysis I



GLOBAL
EDITION



Structural Analysis

Tenth Edition in SI Units

R. C. Hibbeler



Structural Analysis I

ECIV 3314

Course Outline

Structural Analysis I

- **Course Details**

- Course title: Structure Analysis I
- Course code: ECIV 3314
- Prerequisites: Mechanics of Materials (ECIV 2313)

- **Instructor**

- PROF. MOHAMMED ARAFA

Objectives

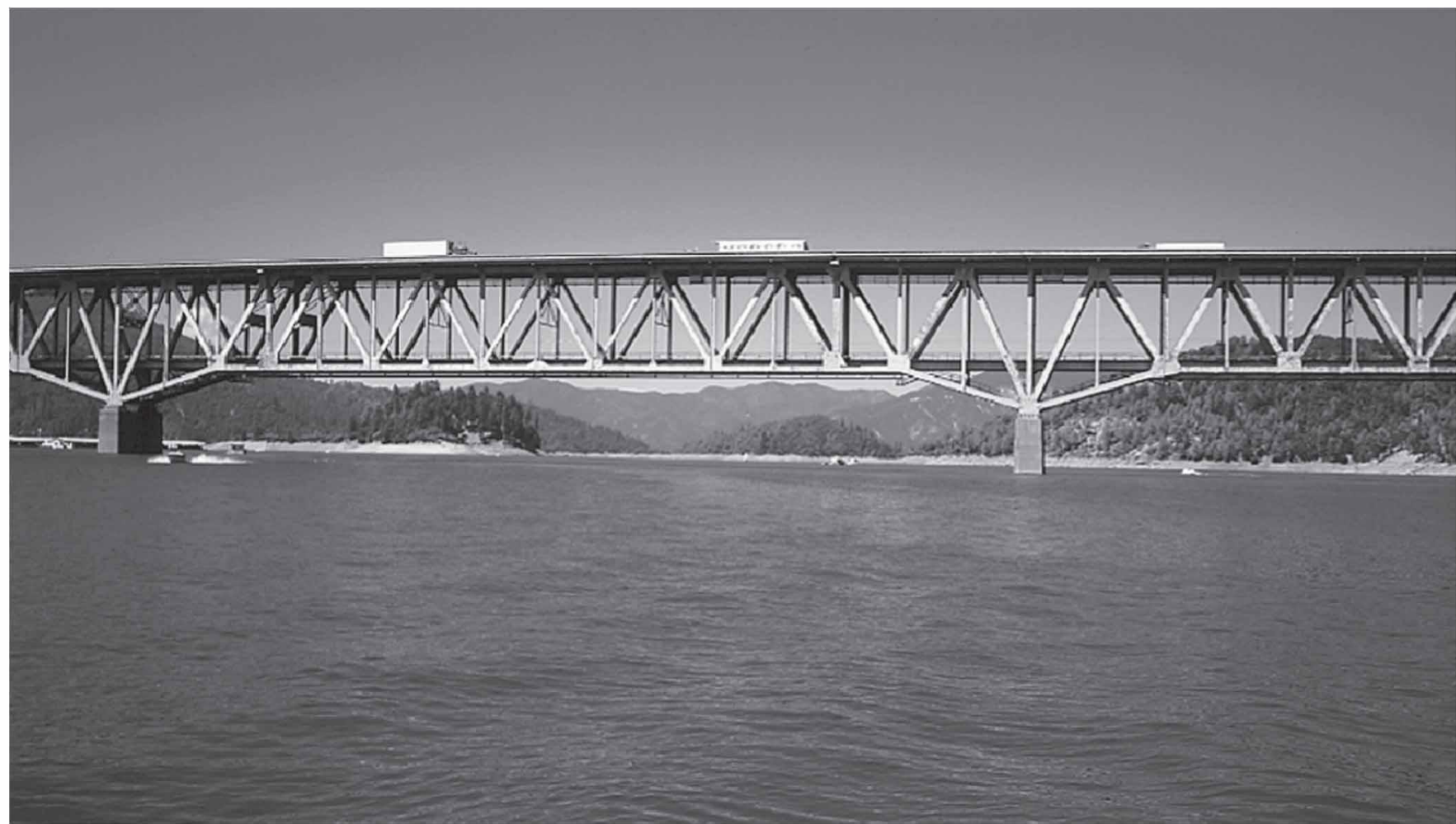
- To understand basic principles and methods for analysis of statically determinate structures.
- **To practice problem solving in:**
 - Analysis of statically determinate structures
 - Analysis of Trusses
 - Internal loading (Moment, Shear diagram),
 - Cables, Arches
 - Influence line
 - Deflections
 - Analyzing of simple structures using computer software.

Course Intended Learning Outcomes:

- Understanding the different type of structures and loading
- Analysis of statically determinate structures.
- Draw Shear Force(SFD) and Bending Moment diagrams (BMD) for beams and Frames.
- Calculate the deflection of structures due to load system using deferent methods.
- Draw the influence line of determinate structures
- Analyzing of real structure problems.
- Using Structural Analysis Software in analyzing of simple structures.

This Course is considered the basis and prerequisite of many courses such as: **Structural Analysis II, Advance Structural Analysis, Reinforced Concrete Design and Design of Steel Structure.**



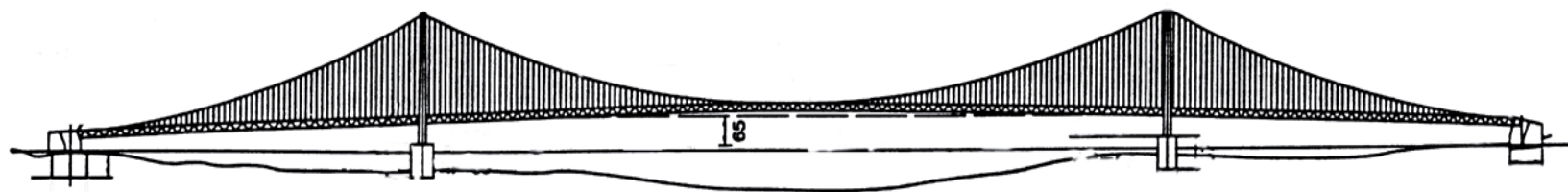
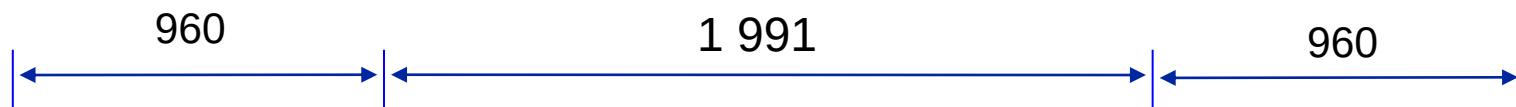


<i>Chapter</i>	<i>Weeks</i>	<i>Lectures</i>	<i>Topic</i>
1	1	2	Introduction: Type of loads and structures
2	2	2	Analysis of statically determinate structures
3	3-4	4	Analysis of Statically Determinate Trusses, Space truss
4	5-6	5	Internal loading in structural member (Shear/Moment diagram)
5	7-8	3	Cables and Arches
6	9-10	5	Influence Lines for statically determinate structures
7	11-12	4	Deflections
8	13-14	4	Deflections using energy method
	15	1	Review
Total	15	30	

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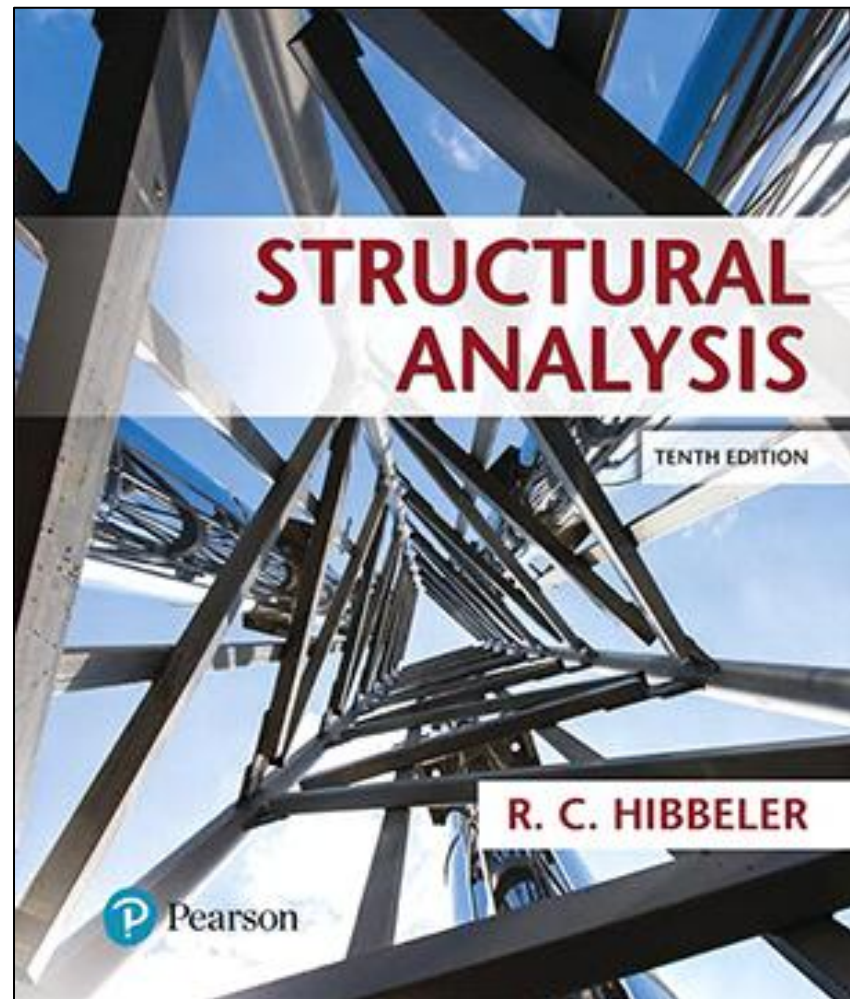


Grading

- Midterm Exam 30%
- Homework, Quizzes and Course Works 20%
- Final Exam 50%

Text book

Structural Analysis, by R.C. HIBBLELER , TENTH Edition, Prentice Hall, Inc. 2019



Reference

- Any Structural Analysis Book
- Structural Analysis, by R.C. Hibbleler , Previous Editions (2-8)Ed, Prentice Hall.
- Fundamental of Structural Analysis, by Leet, Chia and Uang , McGraw-Hill Science, 2010.
- Structural Analysis using Clasical and Matrix Methods by Jack McCormac, John Wiley & Sons, 2014
- Structural Analysis, by Aslam Kassimali, Cengage Learning, 2014