

**CE 5305: Advanced Structural Analysis
Spring 2024**

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Office Hours: Flexible, schedule via Outlook or a phone call

Time: Tuesday/Thursday: 4:30 PM to 5:50 PM

Classroom: CCSB Rm 1.0204

Textbook (Required)

Hibbeler, R.C. "Structural Analysis" 10th Edition (2018)

Course Objectives

By the end of this course, you should be able to:

1. Solve statically indeterminate structures using the force method
2. Solve statically indeterminate structures using the displacement method
3. Solve complex structural analysis problems using approximate methods
4. Develop a global stiffness matrix and solve statically indeterminate structures using matrix methods
5. Develop an understanding of current structural engineering practice
6. Generate finite element model and interpret results of structural analysis software

Homework

- Complete homework assignments on engineering paper.
- Use sharp pencils and a straight-edge for your work. Write precisely and neatly.
- Include your name on every page of your homework.
- Number, title and date the pages of your homework.
- Clearly sketch out any diagrams with labels as required.
- Box answers so they can be readily identified.
- List any external references used in the homework (i.e., textbook tables)
- Make a clean digital copy for submission.

Computer Policy:

We will be writing code in Matlab throughout the term to conduct structural analysis. The goal is to get some exposure to the mechanics of how structural analysis software works.

We will use the educational version of RISA 2D, which can be downloaded and installed from:

<https://blog.risa.com/post/risa-2d-educational-version>

Grading:

Three exams: 75%

Homework and quizzes: 25 %