Course Title: Basic Structural Analysis
Credits: #3
Format: Lecture/Online
Prerequisites: CE2110 Applied Mechanics I: Statics, CE3110 Mechanics of Materials
Class meets: MWF 11:15 – 12:05 PM in MCHU 301 and online after 3/23
Professor: Shinae Jang, Ph.D., P.E.
Email: shinae.jang@uconn.edu
Telephone: 860-486-0540
Office location: Engineering II building, 309 (will not be available in the office after 3/23)
Office Hours/Availability: Mondays and Wednesdays 3:30 – 4:30 PM by appointment
- A web link to the conference call will be sent individually (either Collaborate or Webex)
Teaching Assistants: Zhixia Ding (zhixia.ding@uconn.edu), Shalini Shial (shalini.shial@uconn.edu)
Office Hours/Availability: Tuesdays 2-3PM and Thursdays 4-5PM or by appointment
- Blackboard Collaborate Ultra, go to 'Office Hour’ tab

Email Communications: Please include [CE3610] in the subject line

Required course materials should be obtained before the first week of class. Textbook and i>clickers are available through UConn Bookstore or online bookstore/vendors.

Required Materials:
Online Learning Platform: The technology ensuring your online learning environment is required: internet service, computer, microphone and webcam.

Text book: Structural Analysis

i>clicker 2: The mobile application, REEF Polling is NOT allowed. You must register your i>clicker on HuskyCT by the add/drop deadline, 2/3/2020. I consider bringing a fellow student’s i>clicker to class to be cheating and a violation of the University Code of Conduct. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all clicker points and may face additional disciplinary action. In case you didn’t bring your i>clicker although you attended after 2/3, you will receive full participation grade upon in-person request right after the class for only one time basis. It is your responsibility to check whether your i>clicker is properly working without technical issues – battery, wrong channel, etc. If you lost your current i>clicker, you need to replace it and register the new i>clicker immediately. Check the HuskyCT Grade center frequently for the clicker points, noted by ‘Session #.’
Course Objectives

After completion of the course students should be able to:

1. Given adequate information, construct the bending moment, shear, and axial force diagrams for a typical element of a framed structure.
2. Given a two-dimensional structure, evaluate whether the structure is determinate or indeterminate and assess its stability.
3. Given a simple determinate structure, be able to analyze the structure. (Analysis includes calculation of reactions, internal forces and moments, deflections at key points.)
4. Given a simple indeterminate structure, be able to analyze the structure using flexibility methods, stiffness methods and virtual work methods.
5. Ability to identify different types of structural systems.
6. For a simple determinate structure, construct the influence line for some response quantity of interest.
7. Given an influence line, understand how to interpret it and use it for positioning live loads.
8. Given a two-dimensional structure, be able to create a computer model of the structure. (This involves understanding boundary conditions, element releases, specification of loads, and specification of member properties.)
9. Given a distributed floor or wall loading, use tributary load and load path concepts to evaluate how the load is resisted by the structure

Course Requirements and Grading

Summary of Course Grading:

<table>
<thead>
<tr>
<th>Course Components</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exams</td>
<td>45%</td>
</tr>
<tr>
<td>Final exam</td>
<td>35%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Class Project or Writing Assignment</td>
<td>5%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

Homework

- There are 10 sets of Home works during the semester. You will upload HWs to HuskyCT under “Assignments” and get feedback online. You need to upload your assignments before the due date
to HuskyCT. The due is the date listed on the syllabus at 11:59PM. The due dates are also available on course schedule. The course schedule file is located in HuskyCT under Syllabus folder. Expect technical problems such as scanner, wifi, or HuskyCT, therefore, submit your homework ahead of time (not in the last minute). The homework solution will be released at 7AM after the deadline, submitted between the deadline and 7AM will be accepted with 50% credit deduction. **Last submission after the time solution is posted will NOT be accepted.** You need to expect technical issues (internet, scanner, HuskyCT, etc) and address them ahead of time. **To come up with a possible emergency situation, the lowest homework grade will be dropped.**

- Strictly follow the homework template to receive full credit.
- You need to scan your homeworks and save as a **single** Pdf file using the scanner located in Homer library or your smartphone device. The scanners in library are free to use, available 8AM-midnight, and are located in Plaza level by the i-desk and second level by the commons desk.

**Midterm exams**

- **Midterm exam 1: 2/26 (50 minutes in class)**
  - Midterm exams contain 3-5 questions. You have 50 minutes to answer questions.
  - Exams are closed book, and closed notes. You can only have your calculator, pencil and eraser. There is no restriction on the calculator model for the exam
  - There are review sessions in the class before midterm exams. You can send your questions to instructor in advance to be addressed in the review sessions.
  - Solution to midterm exams will be available in HuskyCT under Course Resources/Exam Solutions.

- **Midterm exam 2: 4/3 (60 minutes online using Lockdown browser)**
  - To set up your computer setting, complete the practice exam 2 by the deadline. The instruction will be posted to set up the Lockdown browser.
  - Midterm exams contain 3-5 questions. You have 60 minutes to answer questions.
  - After completing the exam, you must submit the scanned exam to the following assignment link in the same folder within 10 minutes after the exam. Failure to do so will result in zero credit of your midterm 2.

- **Make up exams** will be offered to students only in following cases for one time basis.
  - Students with disability can contact CSD to schedule exam in a private room with extended time. For online exams, contact the instructor before the exam to make sure all your accommodations are fulfilled (ahead of time).
  - Athletic team members also can reschedule exam with a letter from their coach (in case of conflict between exams and their tournaments).

**Final Exam**

- **5/4 10AM – 12PM (2 hours)**
- Final exam will be cumulative.
- **It will be online exam with Respondus Lockdown browser.**
- The final exam can be rescheduled because of bunched exam or other reasons. This should be allowed by the registrar’s office, and once you are allowed, you need to schedule the date with the instructor ahead of time.
- Students with disability may contact CSD as well as the instructor to schedule the final exam with necessary accommodations. If you need to use the rescheduled exam date, you must discuss the date and get approved by the instructor ahead of time.

**Course Project or Online Discussion**

- Students can choose whether he or she will be working on a modeling project with Staad.Pro or Online discussion. More detailed information regarding online discussion credit will be discussed after 3/23.
- The course project is a team-based modeling project using software Staad.Pro. A series of online
tutorials will be available on HuskyCT. The detailed course project description will be available after midterm exam 1, separately.

Class Participation
- In-class activities using i>clicker are included in this score. Participation score is not based on correct or wrong, but based on participation. If there are multiple activities in one class, only 1 participation point will be counted.
- After 3/23, other online activities will be included in this grade.

Grading Scale: (It is subjected to change)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Letter Grade</th>
<th>GPA</th>
<th>Grade</th>
<th>Letter Grade</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>93-100</td>
<td>A</td>
<td>4.0</td>
<td>73-76.99</td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>90-92.99</td>
<td>A-</td>
<td>3.7</td>
<td>70-72.99</td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>87-89.99</td>
<td>B+</td>
<td>3.3</td>
<td>67-69.99</td>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>83-86.99</td>
<td>B</td>
<td>3.0</td>
<td>63-66.99</td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>80-82.99</td>
<td>B-</td>
<td>2.7</td>
<td>60-62.99</td>
<td>D-</td>
<td>0.7</td>
</tr>
<tr>
<td>77-79.99</td>
<td>C+</td>
<td>2.3</td>
<td>&lt;60.99</td>
<td>F</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Due Dates and Late Policy

All course due dates are identified in the calendar available in HuskyCT under Syllabus& Calendars. Deadlines are based on Eastern Standard Time; if you are in a different time zone, please adjust your submittal times accordingly. The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.

Homework Template

This format is used for most professional engineering work. You do not need to use engineering paper, but to follow the format below to receive full credit. An example homework template is shown in Fig. 1.
- Header: Print your full name, course and section number, date, and page number
- Writing mechanics: all homework should be carefully printed and not written in cursive, printed in pencil and not in ink, neat and clean with no smudges or cross-outs
- Calculations: all homework calculations should include all necessary equations, and intermediate steps, units, and clearly indicate the final solution by boxing it in with a rectangle
- Problem order: problems should be presented in the order assigned with exact problem number
- Problem essentials: problem solutions should include the following items in order
  o Problem number
  o The given information – problem statement
  o The required information for solution
  o Diagrams that clearly illustrate the problem
  o The solution of the problem including all required steps and calculations
- Submission: the scanned homework should be submitted to the correct file. The homework will not be graded and the grade will be zero, for the following cases.
  o Late homework submission after 11:59PM on the deadline
  o Wrong homework submission to wrong folder
  o When only a part of homework was submitted, only submitted portion will be graded.
Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. This section provides a brief overview to important standards, policies and resources.

Figure 1. Sample homework in proper format
Student Code

You are responsible for acting in accordance with the University of Connecticut's Student Code. Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on Academic Integrity:

- Academic Integrity in Undergraduate Education and Research
- Academic Integrity in Graduate Education and Research

Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- Plagiarism: How to Recognize it and How to Avoid It
- Instructional Module about Plagiarism
- University of Connecticut Libraries’ Student Instruction (includes research, citing and writing resources)

Copyright

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

Netiquette and Communication

At all times, course communication with fellow students and the instructor are to be professional and courteous. It is expected that you proofread all your written communication, including discussion posts, assignment submissions, and mail messages. If you are new to online learning or need a netiquette refresher, please look at this guide titled, The Core Rules of Netiquette.

Adding or Dropping a Course

If you should decide to add or drop a course, there are official procedures to follow:

- Matriculated students should add or drop a course through the Student Administration System.
- Non-degree students should refer to Non-Degree Add/Drop Information located on the registrar’s website.

You must officially drop a course to avoid receiving an "F" on your permanent transcript. Simply discontinuing class or informing the instructor you want to drop does not constitute an official drop of the course. For more information, refer to the:

- Undergraduate Catalog
- Graduate Catalog

Academic Calendar

The University's Academic Calendar contains important semester dates.

Academic Support Resources

Technology and Academic Help provides a guide to technical and academic assistance.

Students with Disabilities

Students needing special accommodations should work with the University's Center for Students with
Disabilities (CSD). You may contact CSD by calling (860) 486-2020 or by emailing csd@uconn.edu. If your request for accommodation is approved, CSD will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each semester.)

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government.” (Retrieved March 24, 2013 from http://www.blackboard.com/platforms/learn/resources/accessibility.aspx)

Software Requirements and Technical Help

- Word processing software
- Adobe Acrobat Reader
- Internet access

(add additional items as needed and link to http://ecampus.uconn.edu/plug-ins.html)

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, online students have access to the in person/live person support options available during regular business hours in the Digital Learning Center (www.dlc.uconn.edu). Students also have 24x7 access to live chat, phone and support documents through www.ecampus24x7.uconn.edu.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

(add additional items as needed and link to http://ecampus.uconn.edu/plug-ins.html)

University students are expected to demonstrate competency in Computer Technology. Explore the Computer Technology Competencies page for more information.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University’s standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE). Additional informal formative surveys may also be administered within the course as an optional evaluation tool.