CE-GY 6013 Theory of Structural Analysis and Design
Fall 2017
WED 6:00 – 8:30 PM / RH 702

Instructor: Prof. Weihua Jin, Ph.D., P.E.,
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Office Hours: before or after class, or by appointment


Course Outline:

1. Introduction
   Classification of structures, idealization of structural systems, design vs. analysis, role of computer
2. Statics and Analysis of Determinate Structures
   Equilibrium, methods of joints and sections, moment/shear diagrams, sketching deflected shapes
3. Kinematics and Displacements
   Integration methods, moment-area method, conjugate-beam method, energy methods, virtual work, Castigliano’s theorem
4. Influence Lines and Müller-Breslau Principle
5. Analysis of Indeterminate Structures - Force Method
   Compatibility equations, solution of indeterminate structures
6. Analysis of Indeterminate Structures - Displacement Method
   Slope-deflection equations, stiffness equations, direct stiffness method, matrix analysis
7. Approximate Methods
   Moment-distribution method
8. Plastic Analysis
   Collapse load, principle of virtual work

Grading:

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<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>15%</td>
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<tr>
<td>Exam 1</td>
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<td>Exam 2</td>
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<td>Final exam</td>
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Important Notes:

1. Course contents and grading weights are tentative and subject to change at the discretion of the instructor as the course progresses.
2. Only in rare occasions, and upon justification, will late submission of homework be accepted and there will be 30% penalty for such late submissions.
3. Any forms of cheating, copying, or plagiarism in homework, quizzes, and examinations will not be tolerated and will result in zero credit, a “Fail” grade, or disciplinary action by the school.