ARCE 223: MECHANICS OF STRUCTURAL MEMBERS

Prerequisite: ARCE 212
Corequisite: ARCE 351

Office: Building 21, Room 219 C, Phone: 756-1343
Office Hours: M 9-10, W 2-4, TH 11-1 and by appointment

E-mail: anuenho@calpoly.edu


Lectures: MWF 8-9.00, Building 38, Room 227

Grading: Grading will be based on the following scheme:

<table>
<thead>
<tr>
<th>Scheme 1</th>
<th>Scheme 2</th>
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<tbody>
<tr>
<td>10% Homework</td>
<td>10% Homework</td>
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<tr>
<td>40% Quizzes</td>
<td>20% Quizzes</td>
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<tr>
<td>20% Midterm</td>
<td>10% Midterm</td>
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<tr>
<td>30% Final</td>
<td>60% Final</td>
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The grade received will be the higher calculated from the two schemes. Lowest quiz and homework grades will be dropped. Late assignments will receive 50% credit within the first week, no credit thereafter. No make-up exams except for documented medical or family emergencies. The grade for the laboratory portion of the class is factored into the overall grade for ARCE 223 (75% lecture, 25% laboratory).

Learning Outcomes

1. Ability to formulate the theory behind and to calculate the stresses on a cross-section/2D plane under various conditions.

2. Formulate and apply stress transformations and related extensions to principal stresses and maximum in-plane shear stress.

3. Compute shear flow and location of shear center for any thin-walled cross-section.

4. Understand the derivation and application of flexural deformation using basic principles
   A. Slope and displacement of a beam by integration.
   B. Slope and displacement of a beam by moment-area.
   C. Indeterminate beam reactions using moment-area.

5. Formulation and application of the Euler buckling formula.