Announcements

• In-class Written Quiz 4 (No CBTF) – Friday, October 26
  • 50 minutes: arrive early – we will start on time!
  • Must attend registered lecture section.
  • Bring student ID card.
  • Closed book, closed notes. Calculators allowed.
  • DRES accommodations must be made with DRES office before Wednesday (10/24), schedule the quiz for Friday (10/26) afternoon.
  • Conflict quiz must be scheduled before Wednesday (10/24) upon excused absence request approval.

• Upcoming deadlines:
  • Tuesday (10/23)
  • PL HW
Recap: Internal Forces and Moment
Determine the normal force, shear force, and bending moment at C of the beam.
Determine the normal force, shear force, and bending moment at C.
Shear and Moment Diagram

Beams: structural members designed to support loadings applied perpendicular to their axes.

Simply supported beam

Cantilever beam
Shear and Moment Diagram

**Goal:** provide detailed knowledge of the variations of internal loadings (V and M) throughout the beam

**Procedure**
1. Find support reactions (free-body diagram of entire structure)
2. Specify coordinates $x$
3. Divide the beam into regions
4. Draw FBD of a segment
5. Apply equations of equilibrium to derive V and M as functions of $x$
Shear and Moment Diagram

Draw the shear and moment diagrams for the beam.

7 kN

12 kN·m

A

2 m

2 m

4 m

B
Shear and Moment Diagram

Draw the shear and moment diagrams for the beam.