

CE 203 STRUCTURAL MECHANICS I

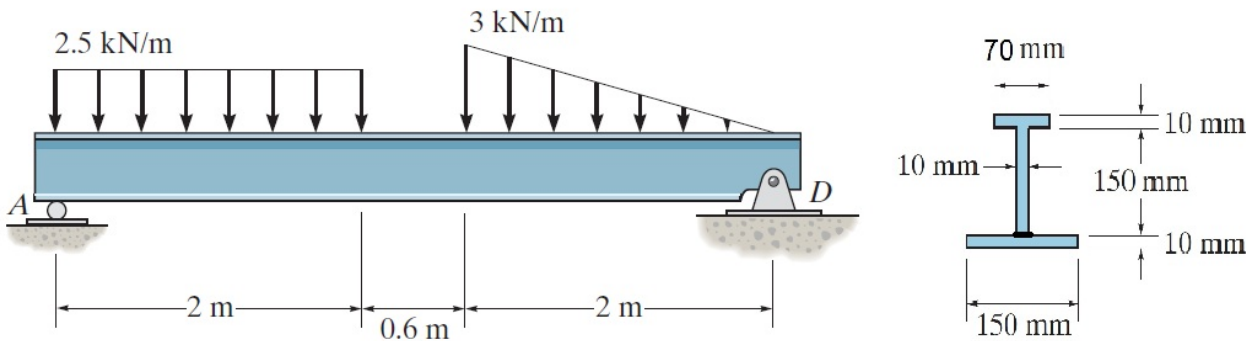
First Semester 2012 / 2013 (121)

HOMEWORK NO. 12

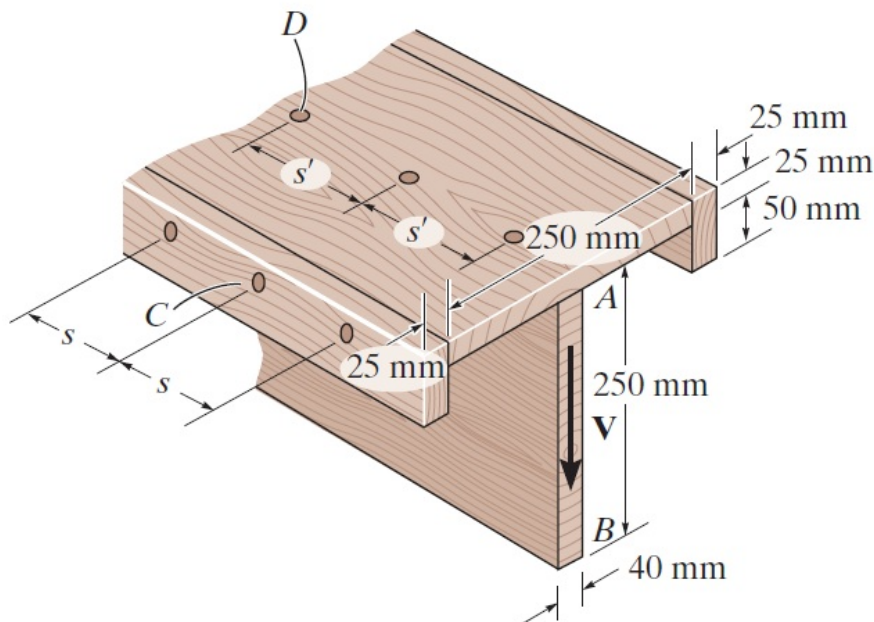
- **Textbook Sections Covered:** 7.3 (Shear Stress in Beams) & Pressure Vessels (8.1)
- **DUE DATE:** **Monday, 10 December 2012**

1 – Solve problem 7-36 in your textbook, but make the following change: **use all thicknesses as 14 mm (instead of 12mm).**

2 - The given beam is loaded as shown and has the given cross section. Determine the required strength of the glue used to connect the bottom flange to the rest of the cross section. (*Hint : answer is controlled by the value of V_{max}*)



3 - The given cross section is subjected to shear force V. Determine the largest value of V that can be safely applied. Given: allowable shear stress of material is 2 MPa , nail capacity is 600 N , and $s = 100$ mm & $s' = 120$ mm .



4 – Solve problem 8-3 in your textbook.

5- The given tank has an inner radius of 800 mm and a thickness of 10 mm. It is filled to the top with water (specific weight = 10 kN/m^3). The tank is made of steel with specific weight = 70 kN/m^3 . Determine the longitudinal and circumferential stresses at point A.

