

## Elastic Behavior of Materials- Lesson 1 Student Note Sheet

What is stiffness?

When does elastic loading occur: when a load is first applied, or right before a material fails?

Connect the mode of loading with its example structure or shape

Axial Tension	Beams
Compressive loads	Ties
Bending moments	Shells
Torsion	Columns
Hydrostatic Pressure	Shafts

Define engineering stress experienced by materials with an equation

What are the three stress states covered in this Lesson?

What is strain? How is it represented mathematically?

Hydrostatic strain is called \_\_\_\_\_ and represents \_\_\_\_\_ change, notated by  $\Delta$

What variable represents shear strain?

Sketch a stress strain curve and label the three general regions of mechanical behavior: elastic, plastic, and failure



What does Poisson's ratio tell us?