

Lecture 18, Feb 28, 2022

Material Properties

- Force must be normalized per unit area: stress $\sigma = \frac{F}{A}$ in pascals Pa
- Deformation must be normalized per unit length: strain $\epsilon = \frac{\Delta L}{L}$
- To quantify strength and material properties we plot these on a stress-strain curve
- When a material is in its linear region, stress is related to strain by $\sigma = E\epsilon$ where E in pascals is the Young's modulus