

Lecture notes for ME120 Solid Mechanics

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Tufts University, 2022

Course description

Strain tensor, stress tensor, elastic stress analysis, isotropic and anisotropic materials, torsion problem, inelastic behavior of materials, elements of plasticity and creep.

Inventory of lecture notes

- Lecture 1: Tensors – 1
- Lecture 2: Tensors – 2 (eigenvalue problem)
- Lecture 3: Strains – 1
- Lecture 4: Strains – 2
- Lecture 5: Strains – 3 (processing of field data)
- Lecture 6: Stresses
- Lecture 7: Hooke's Law
- Lecture 8: Elastic Stress Analysis
- Lecture 9: Bending problem
- Lecture 10: Torsion problem – 1
- Lecture 11: Torsion problem – 2
- Lecture 12: Plane problem – 1
- Lecture 13: Plane problem – 2
- Lecture 14: Beyond Elastic Limit
- Lecture 15: Limit Loads – 1
- Lecture 16: Limit Loads – 2