

AM2200: STRENGTH OF MATERIALS

Course Content:

The course content is as follows: 1. Definition of stress and strain in 1D, 2D and 3D 2. Transformation of stress and strain in 2D, Mohr's Circle 3. Constitutive relations, understanding of plane stress and plane strain phenomenon 4. Stress, strain, deformation of determinate and indeterminate axial members 5. Stress, strain, rotation of determinate and indeterminate torsional members 6. Bending stress and strain in beams 7. Composite beams, equivalent theory 8. Shear stresses in beams 9. Unsymmetric beams 10. Deflections in beams, Compatibility conditions for indeterminate beams 11. Stability in columns 12. Introduction to strain energy and determination of deflection 13. Introduction to failure theories

TextBooks:

1. Mechanics of Materials, 8th Edition | **Russell C. Hibbeler** | Pearson Education
2. Elements Of Strength Of Materials | **SP Timoshenko** |

ReferenceBooks:

1. An Introduction to Mechanics of Solids, 3rd Edition | **SH Crandall, NC Dahl, TJ Lardner, MS Sivakumar** | **Mc Graw Hill**
2. Lecture notes

Prerequisite:

NA