



ME212 Strength of Materials

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Textbooks : “Mechanics of Materials” R.C.Hibbeler, Prentice Hall Inc.

Reference Book : “Mechanics of Materials” F.P.Beer & E.R.Johnston, Mc-Graw Hill Comp.

COURSE PLAN :

1. Week	Equilibrium of a deformable body, average normal and shear stress
2. Week	Allowable stress, factor of safety, Strain, deformation
3. Week	Normal and shear strain, Mechanical Properties Of Materials: the tension test, Hooke's law, Poisson's ratio.
4. Week	AXIAL LOAD: elastic deformation of an axially loaded members, principle of superposition
5. Week	AXIAL LOAD: statically indeterminate axially loaded member, thermal stress
6. Week	TORSION: the torsion formula, power transmission.
7. Week	TORSION: statically indeterminate torque-loaded members
8. Week	BENDING: Shear and moment diagrams, the flexure formula
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10. Week	TRANSVERSE SHEAR: the shear formula, shear stresses in beams, shear flow in built-up members
11. Week	TRANSVERSE SHEAR: the shear formula, shear stresses in beams, shear flow in built-up members
12. Week	COMBINED LOADING: state of stress caused by combined loading.
13. Week	STRESS TRANSFORMATION: plane stress transformation, general equations of plane stress transformation.
14. Week	STRESS TRANSFORMATION: Mohr's circle

Assessment Criteria : Midterm 1 %25
Midterm 2 %25
Quizzes %10
Final Exam %40

ATTENDANCE REQUIREMENTS: $\geq$ %70