

MECHANICS OF MATERIALS-II(ME-215)

Pre-requisite: None

Credit Hours: 03

Contact Hours: 48

RECOMMENDED BOOK(S)

Mechanics Of Materials 5th Edition By Ferdinand P. Beer & Russell Johnston Jr. HTH McGraw-Hill.

Strength of Materials: Andrew Pytel, Ferdinand L. Singer

REFERENCE BOOK(S)

Mechanics of Engineering Materials by P.P. Benham & R.J. Crawford Longman Sc & Tech (Jul 1987)

D. L. Logan, Mechanics of Materials, Harper Collins, 1991

Gere and Timoshenko, Mechanics of Materials, PWS/ITP Publishing, 1997

COURSE OBJECTIVES

Analysis of stress and strain in two and three dimensions, principal stresses and strains, Mohr's circle for stress and strain, thick walled cylinders, symmetrical and asymmetrical loading, introduction to fracture mechanics, impact loading, fatigue and creep, virtual work, theories of failure. Theory of columns.

S. No.	CLO/PLOS MAPPING	DOMAIN	PLO
1	Analyze beam for safety in terms of both strength and deflection limits.	C4	02
2	Evaluate and Compare different design options for practical engineering structures and select suitable materials and/or configurations for such structures.	C4,C6	03
3	Design a real life structure or component, putting skills gained in the course to actual use.	C5	03

COURSE CONTENTS

Deflection of beams

Transformations of stresses

Principal stresses under a given loading

Columns

Impact loading and thick wall cylinder

Introduction to fatigue fracture creep