SUBJECT NO-ME60432, SUBJECT NAME- MICRO MECHANICS AND NANOMECHANICS

LTP- 3-1-0,CRD- 4

SYLLABUS :-

What are micromechanics and nanaomechanics? Basic equations of continuum mechanics, micromechanical homogenization theory: Ergodicity principle, representative volume element, eigenstrain, eigenstress, inclusions; Effective elastic modulus: self-consistent method, Mori-Tanaka method, Eshelby method, Multi-inclusions problems; Voigt and Ruess bounds, Hashin-shtrikman variational principles, Micromechanical damage theory, Dislocation theory, Micromechanics of phase transformation in solids; Nanomechanics: Linear atomic chains, two-three dimensional lattices, Molecular mechanics, Cauchy-Born rule, Mechanics of Carbon nanotubes