

EM - Engineering Mechanics

EM 506 Advanced Dynamics: 3 Credits (3 Lec)

PREREQUISITE: EGEN 335. () On demand. Kinematics of particles, rigid bodies, and mechanisms. Lagrange's equations, constraints, applications, and numerical solutions. -

EM 510 Elastic & Inelastic Analysis I: 3 Credits (3 Lec)

PREREQUISITE: EM 525 or EGEN 415. Fundamentals of linear elasticity, linear viscoelasticity and plasticity. Correspondence principles for elastic and viscoelastic materials and analogy between elastic and inelastic materials will be presented. Constitutive theories of linear elasticity, linear viscoelasticity, and plasticity. Application to static structural theories for beams, torsion, plane stress, and plane strain will be covered for elastic and inelastic behavior. -

EM 518 Theory Plates & Shells: 2 Credits (2 Lec)

PREREQUISITE: EGEN 415. () Spring, even years. Theory of small plate deformations, membrane shell theory, shell bending

EM 525 Continuum Mechanics: 3 Credits (3 Lec)

PREREQUISITE: EGEN 415 or EMEC 444 or undergraduate ME degree. (Sp) Solid and fluid mechanics, laws of vector and tensor transformations, vector and tensor calculus using Cartesian tensors, theory of deformation, principles of thermodynamics, constitutive equations

EM 560 Finite Elem Analys in Engr: 3 Credits (2 Lec, 2 Lab)

PREREQUISITE: EGEN 415 or EGEN 435. General finite element analysis. Application to the classical equations of fluid, solid, and thermal mechanics

EM 591 Special Topics: 1-4 Credits (1-4 Lec)

PREREQUISITE: Upper division courses and others as determined for each offering. On demand. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number

Repeatable up to 12 credits.

EM 592 Independent Study: 1-3 Credits (1 Other)

PREREQUISITE: Graduate standing, consent of instructor, approval of Department Head and Dean of Graduate Studies. (F, Sp, Su) Directed research and study on an individual basis

Repeatable up to 4 credits.