Course Syllabus: CMGP 07 Structural and Solid Mechanics

Instructors: Dr. Z. Gurdal, Dr. A. Zghal, Dr. S. El-Borgi

Course Outline:

1. Stress
2. Strain
3. Constitutive laws
4. Yield criteria of materials
5. Elastoplastic constitutive models
6. Introduction and constitutive equations of a lamina
7. Classical lamination theory
8. Failure theories and strength analysis

Course Offering:

Quarter 1 of each academic year (Required Course; 45 hours total; 4.5 Credit hours)

Course Grade: Homework (30%); Exam (70%)

References:

1. Boresi,A.P., Schmidt, R.J., "Advanced Mechanics of Materials, 6th Edition", Wiley, 2003
2. Fenster, S.K., Ugural, A.C, Ugural, A.C., "Advanced Strength and Applied Elasticity, 3rd Edition", Prentice Hall 1994
3. Cook, R.D., Young, W.C. "Advanced Mechanics of Materials", Prentice Hall, 1999
4. Ugural, A.C., "Stresses in Plates and Shells, 2nd Edition, McGraw-Hill, 1998
5. Jirsaek, M., Bazant, Z.P., "Inelastic Analysis of Structures", Wiley, 2001
6. Dowling, N.E., "Mechanical Behavior of Materials: Engineering Methods for Deformation, Fracture, and Fatigue, 2nd Edition", Prentice Hall, 1998
7. Nayfeh, A.H., Pai, P.F., "Linear and Nonlinear Structural Mechanics", Wiley Interscience, in preparation