

**ME 320 "Mechanics of Composite Strength and Life"
Spring 2003**

Course Description:

This course is intended to provide an opportunity for students concerned with mechanical behavior to develop an understanding of the physical and chemical processes that control the strength, remaining strength, and life of composite materials, and to develop analytical models and interpretive skills to apply that understanding to the estimation of design allowables, reliability, residual strength, and life of composite material components. The course will utilize computational tools provided to the students in basic form, and enhanced during the development of the subject. Classical behavior such as fatigue, creep, stress rupture, and stiffness degradation will be studied, and analysis methods to combine those effects to predict long-term behavior will be presented. Comparisons with physical behavior will be emphasized. Work-place examples will be incorporated in the course whenever possible.

Prerequisites:

A basic understanding of mechanics of deformable bodies, stress, strain, and strength are required. Some skill in the manipulation of equations in a computer code (or in an Excel spreadsheet) is also required.