

SUMMER 2006 - ME 590/490
SPECIAL TOPICS: COMPOSITE MATERIALS
EGCB 235, 6:00-8:30PM, T& R
(May 30- July 28, 2006)

INSTRUCTORS

Dr. Jan Gou, EGCB 202, Phone: 460-7457 E-mail: jgou@jaguar1.usouthal.edu

Dr. Kuang-Ting Hsiao, EGCB 204, Phone 460-7889, E-mail: kthsiao@jaguar1.usouthal.edu

OFFICE HOURS

Tuesday, 2:00-5:00pm; or by appointment (Dr. Hsiao)

Thursday 2:00-5:00pm; or by appointment (Dr. Gou)

TEXTBOOK

Fiber Reinforced Composites: Materials, Manufacturing, and Design, by P. K. Mallick, 2th Edition, ISBN: 0-8247-9031-6, Marcel Dekker, Inc., 1993.

COURSE DESCRIPTION

Understand composite materials including the constitutive materials, manufacturing processes, performances, and design approaches.

COURSE OBJECTIVES

1. To be able to select appropriate constitutive materials for polymer composites manufacturing.
2. To be able to use suitable process methods to manufacture polymer composites.
3. To be able to evaluate the properties of polymer composites.
4. To be able to use failure criteria to design composite structures.

TOPICS COVERED

Glass/Carbon/Organic Reinforcements
Thermoset/Thermoplastic Matrices
Mechanics of Composite Materials
Performance of Composite Materials
Manufacturing Processes for Composite Materials
Failure Modes and Design

GRADING POLICY

Class Attendance	10%
Homework	40%
Term Exam	20%
Final Exam	30%
Total	100%

COURSE GRADE: A (90-100); B (80-89); C (70-79); D (60-69); F (<60)

CLASSROOM POLICY

1. Homework assignments will be announced in class and they are due at the beginning of the class period on the due day.
2. There will be one term exam plus a comprehensive final exam. Solutions must be shown clearly and neatly in your exam papers. All examinations missed due to illness or emergency require a written, verified excuse or a grade of zero will be assigned.
3. Class attendance is necessary for satisfactory performance. It is student's responsibility to find out about all the assignments and announcements made in class. The student is held responsible for all missed work and classroom information. Class roll will be taken at the beginning of the term to ensure that students are attending the correct class and section. Class rolls will not be taken each time, but may be taken at any time to identify absentees.
4. Cheating and plagiarism are serious academic matters and they will be handled by the following policy and by the University policy. A grade of zero is assigned for the entire assignment. For example, zero is assigned for the entire test and not for individual parts of the test. Automatic failure of the course can result from a zero grade on an individual assignment. The case will be reported to the Dean of Students for disciplinary action.
5. In accordance with Americans Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodation. The office of Special Student Services will certify a disability and advise faculty members of reasonable accommodations. If you have a specific disability that qualifies you for academic accommodations, please notify your instructor and provide certification from Disability Services (Office of Special Students Services). The Office of Special student Services is directed by Ms. Bernita Pulmas and is located in the Student Center, Room 270, Phone 460-7212.
6. Since all classes do not progress at the same rate, the instructor may wish to modify the syllabus requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of exams, or the number and sequence of assignments. If such a modification is warranted, students will be given adequate notification in writing.

CLASS SCHEDULE

Week 1, 2: Constitutive Materials

Week 3, 4: Manufacturing Processes

Term Exam

Week 5, 6: Mechanics and Performance

Week 7, 8: Composite Design

Final Exam (6:00-8:30pm, Tuesday July 25, 2006.)