

DEPARTMENT OF MECHANICAL ENGINEERING

ME 440 MATERIALS FOR AGGRESSIVE ENVIRONMENTS

FALL 2003

Section 1 - TTh 8:00 a.m. - 9:15 a.m., 301 Lowry

Instructor:

Dr. Mica Grujicic, Professor of Mechanical Engineering
Office: 241 EIB, Tel. 656-5639, e-mail: mica@ces.clemson.edu

Textbook:

No textbook

Reference:

Various technical reports and journal articles
Hand-out material provided by instructor.

<http://education.lanl.gov/resources/fuelcells/fuelcells.pdf>

<http://www.voltaicpower.com/Modules/Modules.htm>

<http://www.spinglass.net/scooters/pdf/ch3c.pdf>

Goals and Objective:

1. To provide the student with a basic understanding of the properties engineering materials must possess to be used in aggressive environments.
2. To provide the student with a working knowledge of the selection of engineering materials for aggressive environments.
3. To have the student understand the use of engineering materials in electrochemical power generators (fuel cells).

Class policy:

My expectations of you are similar to those you have of me. I assume that you will attend class, that you will be on time and prepared, and that we will maintain a professional, courteous relationship. Policy on academic dishonesty is that stated in the Clemson University Undergraduate Announcements. Students may discuss approaches to the homework problems, however, all work turned in for grading is expected to be the individual's effort, not a group or joint effort! Simple copying or paraphrasing is not allowed.

Homework:

Representative problems will be assigned for all topics. Homework is due one week after it is assigned. Solutions will be placed on reserve in the library after the problems are due, and therefore, late homework will NOT be accepted.

Since each student has ready access to computers and printers, all work submitted for grading **MUST** be produced on a computer word processing system and printed via a computer printer.

Homework must be submitted in a hard-copy form. No electronic submission of the homework is allowed.

Semester Tests:

Two 75-minute, closed-book, close-notes tests will be given. Oral make up tests will be given **ONLY** for **DOCUMENTED** personal illness or immediate family emergency.

Grading:

Final grades for this course will be determined according to the following percentages:

Homework	30%
Semester tests (35% each)	70%

Grades will be assigned as following: A - 90 or higher; B - 80 to 89; C - 70 to 79; D - 60 to 69; F - 59 or lower.

Prerequisites:

“Any course taken which will later be used as a specified prerequisite for any ME or EM course must be completed with a minimum grade of “C”.” All required 300-level ME and EM courses are prerequisites for ME440.

Test Dates:

Tuesday, September 29, 2003 - Review for Test 1

Thursday, October 2, 2003 - Test 1

Tuesday, November 18, 2003 - Review for Test 2

Thursday, November 20, 2003 - Test 2