

Materials Science and Engineering
Major Analytical Instrumentation Center
EMA 6507C
"Scanning Electron Microscopy & Microanalysis"
Instructor: Luisa Amelia Dempere
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Class Description & Goals:

This course will provide a foundation in the principles and theories of microscopy with a main emphasis on Scanning Electron Microscopy (SEM). The purpose of the class is to provide the necessary theoretical background combined with practical training to become a proficient user of the MAIC SEM facilities. This course leads to be an authorized user of the JEOL SEM-6400 at the MAIC (if maximum grade is achieved in the Lab, otherwise additional training is necessary). Also, this course is a pre-requisite for additional training on the Field Emission Scanning Electron Microscopes at the MAIC and for training on Auger Spectroscopy.

Schedule:

The class will meet formally on Tuesdays (Period 3) and Thursdays (Period 3 & 4) at MAEB 229.

Lab sessions will be 1 hour a week, 2 students per session, schedule TBA.

Lab sessions will take place at MAEC (MAIC) Room 107A.

Office Hours:

Office hours by appointment. Please, try e-mail to set one up.

Course Web Page:

<http://maic.mse.ufl.edu/CoursesSummer2008.htm>

Grading:

Quizzes: 20%

Midterm: 30%

Final: 30%

Lab: 20%

The exams are not comprehensive. That is you will not be expected to remember the nitty-gritty details from the first weeks for the 3rd quiz but you will be expected to understand the concepts. You will need to know the earlier information to understand latter information. A lectures schedule, lecture topics list and lab

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topics list are provided. Exams will cover lecture material and handouts, as well as text material. Make ups will not normally be given without a legitimate reason.

Lab:

The lab final grade will be based on your performance throughout the semester as well as in the Lab Final Exam. Grade scale is 1- 4 (1 = excellent performance, 4 = poor performance).

There will be no makeup lab sessions.

References:

Goldstein, J.I., Newbury, D.E., Echlin, P., Joy, D.C., Romig, A.D. Jr., Lyman, C.E., Fiori, C., and Lifshin, E. *Scanning Electron Microscopy and X-Ray Microanalysis, A Text for Biologists, Materials Scientists, and Geologists*. Third Edition. 2003. ISBN 0-306-47292-9

JEOL. *A Guide to Scanning Microscope Observation*. Available as a PDF file at <http://www.jeol.com>. (Images and examples from this tutorial will be used in the class).

Class Attendance:

Attendance and active participation at all scheduled lectures and labs are required.

Special Accommodations:

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

University's Honesty Policy:

Students are responsible for reading and abiding by the University's honesty policy regarding cheating and use of copyrighted materials. Details of the honesty policy maybe found at <http://www.dso.ufl.edu/stg/>.

Disclaimer:

Changes may be required during the course of the semester. The instructor will consult with the class as a whole and attempt to make changes that cause the least disruption to all students. Changes will be announced as soon as possible.

Lab Coordinator:

Dr. Brad Willenberg (yoda@ufl.edu)