



MR306 August 3:0

Electron Microscopy in Materials Characterization

Instructor

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Department: Materials Research Centre

Course Time: Tue., Thu., 1030AM-12Noon

Lecture venue: MRC Auditorium

Detailed Course Page:

Announcements

Brief description of the course

The course will cover the fundamentals of electron microscopy including basics, principles of operation and interpretation of images. Both SEM and TEM basics will be covered.

Prerequisites

None

Syllabus

SEM - principles of operation, Instrumentation

TEM - Instrumentation, Basics of Diffraction, Imaging and Spectroscopy

Course outcomes

Fundamental understanding of principles of operation of SEM, TEM and interpretation of images and diffraction patterns. This course will be a prerequisite for undergoing hands-on training on TEM at AFMM.

Grading policy

50% for Sessional including assignments

50% for Finals

2 mid-term tests and 1 final exam

Assignments

4 assignments at roughly equal intervals during the semester

Resources

1. Scanning Electron Microscopy and X-Ray Microanalysis: A Textbook for Biologists, Materials Scientists and Geologists

J.I. Goldstein, A.D. Romig, D.E. Newbury, C.E. Lyman, P. Echlin, C. Fiori, D.C. Joy and E. Lifshin

2. Transmission Electron Microscopy – A Textbook for Materials Science

David B Williams and C. Barry Carter

Lecture notes (ppt) will be provided to the students