The objective of this course is to introduce students to the theoretical and practical aspects of experimental materials characterization. A broad range of topics will be covered in order to give exposure to all areas of materials science. The class will introduce the three main aspects of materials characterization: materials structures, chemical analysis and electrical analysis.

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Office Hours: Tuesday 9 AM – 11 AM  
Class Hours: M/W 2:00-3:20 PM  Class Location: D208B

Textbook: The Instructor will supply handouts and references. Course notes for each class (PPT files) will be e-mailed to students

Suggested text books:

Attendance is mandatory  
Midterm Exam: October 16  
Final Exam: December 11  
Project presentations: December 4th and 6th

Grading:
A= 100-90, B=89-80, C=79-70, D=69-60, F=<60  
Homework………………..20%  
Project presentation……20%  
Midterm Exam …………30%  
Final Exam……………….30%

Class Topics:
1. Introduction  
2. X-ray Diffraction Methods  
3. Electron Microscopy (SEM)  
4. Electron Microscopy (TEM)  
5. FTIR and Raman Spectroscopies  
6. Scanning Probe Microscopy  
8. Ion beam spectrometries: RBS and SIMS  
9. Electrical Characterization