

Syllabus: GEOS F619 – F01 Spring 2006 - CRN 33915
Advanced X-ray Spectrometry
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The purpose of this course is to allow the students to expand their knowledge of electron microprobe and XRF analytical techniques. Topics to be covered include standard and sample preparation, quantification methods, x-ray mapping and classification, and error analysis.

This course is only offered graded. Grades will be assigned as follows:

- A: 90-100%
- B: 80-89%
- C: 70-79%
- D: 65-69%
- F: <65%

Each student will develop a project (or projects) that allows him or her to explore the limits of x-ray analysis. Four formal oral presentations are required:

- 1) Plan of Project (~10 minutes, 10% of grade)
- 2) Progress report on Project (~10-15 minutes, 15% of grade)
- 3) Final Report on Project (~20 minutes, 25% of grade)
- 4) Talk on some topic in x-ray spectroscopy (~20-30 minutes, 15% of grade)

30% of the grade will be on a “cookbook” style written report on the student’s project. It is due May 11 by 5pm. Make it in a style so that a future user could easily follow your methods. Look at the “blue notebook” in the probe lab for some good examples.

And the last 5% is class participation as determined by the instructor.

When students are not making presentations the instructor will lecture on topics chosen by the students.

Suggested Texts (available from the instructor):

Potts PJ. 1987. *A Handbook of Silicate Rock Analysis*. Blackie. Glasgow, UK. 622 pages. A great reference but WAY pricey (and I think out of print now).

Scott, VD, Love, G, and Reed, SJB. 1995. *Quantitative Electron-Probe Microanalysis*. Second Edition. Ellis Horwood, New York. 311 pages.

Tertian, R, and Claisse, F. 1982. *Principles of Quantitative X-Ray Fluorescence Analysis*. Heyden, London, Philadelphia, Rheine. 385 pages.