Instructor: Dr. Sarah Penniston-Dorland Spring 2008

Lecture: M,F 9:00-9:50 am, Plant Sciences Building Rm. 1117
Lab: W 9:00 am-12:00 pm or 1:00 pm-4:00 pm, Geology Building Rm. 2117
Office hours: Fridays, 10:00-11:00 am, or by appointment, Chemistry Building 1221B
email: sarahpd@geol.umd.edu

Teaching Assistant: Rachel Potter, Chemistry Building 1221A
email: rhpotter@geol.umd.edu

Required textbooks:
Introduction to Optical Mineralogy 3rd ed. by William D. Nesse
Recommended CD (should come packaged with Nesse text):
An Atlas of Minerals in Thin Section by Daniel J. Schulze

Course Description: The optical behavior of crystals with emphasis on the theory and application of the petrographic microscope.

Absences:
Attendance will not be taken, however examinations will be based largely on material presented in the class/lab as well as the reading assignments. If you miss a lecture or lab, it is your responsibility to obtain notes from a colleague. If you are absent from any lecture/lab it is your responsibility to provide the instructor with documentation of a university-approved absence. Upon receipt of proper documentation you will be permitted to make up any missed work.

Grading:

Lab Exercises	25%
2 Midterm Exams	20%
Mineral Project	20%
Comprehensive Final	10%
Final Lab Exam	10%
Homework Exercises	5%
Class wiki	5%
Participation	5%

There will be no extra credit opportunities offered.

Exams: There will be two midterm exams and a comprehensive final. Exams will consist of multiple choice, definition, short answer and/or essay questions. You may not use notes or any other study aids on exams or quizzes. There are no specially scheduled or makeup exams. Exceptions will be made for students with disabilities or extenuating circumstances that have been officially recognized by the university. Arrangements must be made at least one week in advance of the examination.

Project: There will be a "pet mineral" project that spans the course of the entire semester. In this project each student will receive an unknown mineral. Students will be required to describe and identify their unknown mineral using a wide variety of techniques. Students will be required to hand in a written report based on their results and present the results in an oral presentation to the class.

Class Wiki: Each week there will be a mineral of the week. The course has a wiki site through http://geowiki.umd.edu/. Each class member has a section on the mineral of the week wiki page. Students will be required to look up information about each mineral and add images, links and information about the mineral to the page by the end of each week.

Academic Integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu/whatis.html.

Lecture, Lab and Project Schedule

Date	Lecture topic	Reading	Lab Exercise	Project
1/28 1/30 2/1	Light Light	 Chapter 1	***Introduction Petrographic Microscope (Chap 2)***	**Mineral assignments**
2/4 2/6 2/8	Refractometry Optics of isotropic minerals	Chapter 3 Chapter 4	***Index of refraction Chapter 3***	
2/11 2/13 2/15	Optics of anisotropic minerals Optics of anisotropic minerals	Chapter 4	***Isotropic minerals Chapter 4***	**Hand sample results Sample preparation Appendix A**

Lecture, Lab and Project Schedule (cont.)

Date	Lecture topic	Reading	Lab Exercise	Project
2/18 2/20 2/22	Optics of anisotropic minerals Uniaxial optics	Chapter 5 Chapter 6	***Interference phenomena Chapter 5***	
2/25 2/27 2/29	Uniaxial optics Uniaxial optics		***Uniaxial minerals I Chapter 6***	
3/3 3/5 3/7	X-ray diffraction MIDTERM I		***Uniaxial minerals II Chapter 6***	**Grain mount results**
3/10 3/12 3/14	Biaxial optics Biaxial optics	Chapter 7	***Biaxial minerals I Chapter 7***	
Spring Break				
3/24 3/26 3/28	Biaxial optics Biaxial optics		***Biaxial minerals II Chapter 7***	**X-ray diffraction results**
3/31 4/2 4/4	Feldspars Biaxial optics	p. 134-140, 144-146	***Intermediate and felsic rocks Chapter 9***	**Thin section**
4/7 4/9 4/11	Biaxial optics Biaxial optics		***Mafic and ultramafic rocks***	
4/14 4/16 4/18	Aluminosilicates Biaxial optics		***Pelitic rocks (aluminous)***	**Electron microprobe results (Friday)**
4/21 4/23 4/25	MIDTERM II Carbonates and calc-silicates		***Calc-silicate rocks***	
4/28 4/30 5/2	Reflected light Reflected light		***LAB FINAL EXAM***	
5/5 5/7 5/9	Oral presentations Oral presentations	 Chapter 8	***Opaque minerals Chapter 8***	**Oral presentations**
5/12	Oral presentations			**Oral presentations**
	COMPREHENSIVE FINAL EXAM Monday, May 19 8:00-10:00 am			

This schedule is tentative and may be modified at any point during the semester.

Reading: The student is expected to read the reading assignment ***before*** the class or lab time for which it is assigned.

Labs: The labs may require more than the three-hour lab period to complete. The key to the microscope cabinets is accessible to registered students in this course. You may retrieve the key from Ms. Dorothy Brown or Ms. Ginette Villeneuve in the administrative office on the first floor of the Geology Building, Geol 1120.

Late penalty:
10% of the grade will be deducted for ***each day*** that an assignment (lab, homework, etc.) is handed in after the due date. Exceptions will be made for absences due to ***documented*** university-approved absences.

Supplies needed for lab and/or class:

calculator

colored pencils

ruler

protractor