Principles of Mineralogy- GLY3200
Fall Semester, 2015

Instructor:	Dr. Jon Martin
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Email:	jbmartin@ufl.edu
Office Hours:	2-3 PM Mon./Wed. or by appointment (call or email first)
Meeting Place:	202 Williamson Hall
Meeting Time:	M W F, 3rd period (9:35 – 10:25 AM)
Required Text:	Nesse: *Introduction to Mineralogy, 2nd edition.* You may purchase the 1st edition, but it differs slightly from the 2nd edition, especially in page and figure numbering and in the addition of new figures.
Useful Text:	Deer, Howie, and Zussman: *An Introduction to the Rock Forming Minerals* Klein and Hurlbut, *Manual of Mineralogy, 21st edition revised* Nesse: *Introduction to Optical Mineralogy*
TA:	Charelle Trim (M 10-11, section 3012; T 6-7; section 5117) Sara Mills (T 8-9, section 6371; R 2-3, section 7897)

Course objectives:

1) Introduce crystallography, crystal chemistry, and systematic mineralogy;
2) Relate the physical properties of minerals to their chemical compositions and crystal structures;
3) Introduce analytical methods used in mineralogy, particularly the polarizing microscope and X-ray diffractometer.
4) Learn mineral classification schemes, and how to identify the important (i.e. most common) rock-forming minerals in hand sample and thin section;

Pertinent information and helpful hints:

1) Do not fall behind in your work – it will be impossible to catch up. For this reason:

NO LATE WORK WILL BE ACCEPTED

2) Make up exams are highly discouraged, but will be granted if a written excuse is brought from a doctor (for illness) or mortician (for a death in the family).

3) I will be posting various bits of information on Canvas website. More information to come

4) Attend all classes – most of the test material will come from the lectures and most, but not all, lecture material will come from the text. Attendance will count for 5% of your grade and role will be taken at random times during the semester. If you miss a class when role was taken, you may be give credit with a written excuse from a doctor (for illness) or mortician (for a death in the family).

5) 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.

6) I expect professional behavior in the class at all times. Please show up for class on time and turn off cell phones. Discussion is welcome, but you must speak loudly enough for all in the class to hear your questions and/or comments. Whispering to your friends will not be tolerated. If you whisper to your friends, I may ask you to speak up so we can all hear.

7) All students are expected to follow the University honor code: neither give nor receive unauthorized aid in doing any assignment. Not adhering to this policy will result in a failing grade for the class.

Grading policy and scale:

Work Required	**Value (%)**	**Total Value (%)**
Attendance	5	5
Laboratory	30	30
Take home/in class exercises	25	25
Two in-class exams	10 (each)	20
Final	20	20
Total		**100**

Grading scale: $\geq$93 = A; 90-92 = A-; 87-89 = B+; 83-86 = B; 80-82 = B-, 77-79 C+, 73-76 C, 72-70, C-, 67-69, D+, 63-66, D, $\leq$ 63 E. Values will be rounded to nearest whole numbers

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Introduction:

Edition	1	2
Introduction	Chap. 1	Chap. 1

Crystallography

Symmetry and point groups	6-18	11-23
Crystal faces and miller indices	19-23	25-30
Zones, Forms, and Habits	23-34	31-47

Mineral studies

X-ray diffraction	160-168	184-193
Introduction to optics and the microscope	114-121	136-143-
Refractometry	151-156	175-190
Interference figures & Isotropic indicatrix	121-122	143-144
Introduction to and optics of anisotropic minerals	122-159	144-183
Optical Indicatrix	130-133	152-157
Color, pleochroism, extinction angle, elongation	136-139	158-159

Crystal Chemistry

Basic chemistry	Chap. 3	Chap. 3
Crystal structure and Pauling's Rules	57–65	67-76
Substitutions and Ternary Diagrams	65-72	76-84
Mineral Stability and Stability Diagrams	74-84	85-98
Twinning and Postcrystallization Processes	87-93	98-115

Systematic mineralogy

Systematic mineralogy and introduction to silicates	183-200	211-229
Nesosilicates	305-325	338-358
Soro-, and cyclo-silicates	291-305	323-358
Ino and Phyllosilicates	235-289	266-322
Tectosilicates	201-234	231-264
Carbonates, sulfides, phosphates	326-355	359-389
Oxides, hydroxides, halides, native elements	356-404	390-413
Rocks and minerals – introduction to petrology		

Classes Canceled

Labor Day	**Sept. 7**
Homecoming	**Nov. 6**
Veterans Day	**Nov. 11**
Thanksgiving	**Nov. 25 and 29**

Field Methods field trip: Sept. 25 (Friday) – Sept. 28 (Monday)

Possible Mid-term Exam dates (subject to change):

1st Mid-term, October 2

2nd Mid-term, November 4

FINAL EXAM – Cumulative and mandatory; Thursday, Dec. 17th, 12:30 to 2:30 pm