

**ERTH 301 Mineralogy
Fall 2008**

Instructor: Dr. Sarah Hanson

Phone: 264-3944

Office: Peelle 204

e-mail: slhanson@adrian.edu

Office Hours: 2:00-3:00 MWF

Required text: Mineral Science; by Klein & Dutrow

<u>Date</u>	<u>Lecture Topic</u>	<u>Reading</u>
Week 1 (Aug 25-29)	Introduction Minerals Defined	
Week 2 (Sept 1-5)	Labor Day – No Class Crystallography: Rows & Nets	143-156
Week 3 (Sept 8-12)	Space Lattices & 2-D Symmetry External 3-D Symmetry: 32point groups	156-165 109-128
Week 4 (Sept 15-19)	32 Crystal Classes Crystallographic Notation, Miller Indices	129-131 131-142
Week 5 (Sept 22-26)	Twinning Catch up / Review for exam	226-234
Week 6 (Sept 29 -Oct 3)	EXAM 1 Crystal Projections - SHAPE	Handout
Week 7 (Oct 6-10)	Crystal Projections – SHAPE Project Instructor at Conference – No Class	
Week 8 (Oct 13-17)	Fall Break Mineral Properties	Ch. 2
Week 9 (Oct 20-24)	Crystal Chemistry I Crystal Chemistry: Coordination Numbers	Ch. 3 Ch. 4
Week 10 (Oct 27-31)	Crystal Chemistry: Pauling's Rules Polymorphs etc.	Ch. 4
Week 11 (Nov 3-7)	EXAM 2 Chemical variation in minerals	Ch. 5
Week 12 (Nov 10-14)	Mineral Chemistry: Chemical Analyses Color in Minerals	Ch. 5 234-241
Week 13 (Nov 17-21)	Mineral Stability Silicates	Ch. 11 Ch. 19
Week 14 (Nov 24-28)	Silicates Turkey Day break – No Class!!	Ch. 19
Week 15 (Dec 1-5)	Optical Mineralogy Optical Mineralogy	Ch. 13 Ch. 13

Final Exam: Thursday Dec 11th 12:00-2:00

Field Trip to Arkansas: Thursday Nov. 13– Sunday Nov. 16

Lab Schedule

<u>Date:</u>	<u>Topic</u>	<u>Reading</u>
Aug 28	No Lab	
Sept 4	Introduction to Symmetry - Bravais Lattices	p. 156-164
Sept 11	Names and Symmetry of Crystal Models	p. 182-208
Sept 18	Miller Indices and Point Group Symmetry of Crystal Models	p. 182-208
Sept 25	Lab Exam	
Oct 2	Native Elements, Sulfides Sulfosalts, Oxides, Hydroxides, Halides	Ch.15 & 16
Oct 9	Carbonates, Nitrates, Borates, Sulfates, Chromates, Tungstates, Molybdates, Phosphates, Arsenates, Vanadates	Ch. 17
Oct 16	Nesosilicates, Sorosilicates, Cyclosilicates	p. 484-505
Oct 23	Inosilicates	p. 505-519
Oct 30	Phyllosilicates	p. 519-534
Nov 6	Tectosilicates	p. 534-552
Nov 13	Field Trip – no lab	
Nov 20	Optical Mineralogy	Ch. 13
Nov 27	Turkey Day break – No Lab!!	
Dec 4	Lab Final	

Course Policies and Procedures

Attendance:

It is imperative that you attend all scheduled classes and labs. Attendance will not be taken in lecture. However, it is **your** responsibility to get any homework assignments which may have been given in class and the lecture material (some of which may not be covered in the text). Attendance **will** be taken in lab. If you miss a lab, it is **YOUR** responsibility to get and complete the assignment in the allotted time. Lab Assignments will be due at the beginning of the following lab period. Points **WILL** be deducted for late assignments. Quizzes will generally take place during the first ten minutes of lab. No extra time will be allowed for late arrivals.

Exams:

You **MUST** notify me in advance if you are going to miss an exam. Make-up exams will be given **ONLY** if you have a substantiated emergency (i.e. medical emergency, death in family etc.).

Grades:

Lecture:

3 exams @ 15% each	45%
Homework	5%

Lab:

Lab exercises	10%
Lab quizzes	10%
2 exams @ 15% each	30%

If necessary, I will adjust the grade scale for each exam *upwards* to a class mean of 75%. No extra credit assignments will be given. Final grades will be calculated as follows:

94 – 100%	A
90 – 93%	A-
87 – 89 %	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
63 – 66%	D
60 – 62%	D-
Below 60%	F