

**Course information:**

Units: 3/1

Location: Live Oak 1210

Times: M & W, 11:00-12:15 (lecture)  
W, 2:00 – 4:45 (lab)

**Instructor information:**

Professor: Robinson Cecil

Office: Live Oak 1230

Office hours: M 2-4 pm, or by appt

Email: [robinson.cecil@csun.edu](mailto:robinson.cecil@csun.edu)

Office phone: (818) 677-7009

**Course description** (from the course catalog): Study of the nonsilicate and silicate minerals with emphasis on crystallography, mineral chemistry, physical properties, occurrence, origin and associations. Lecture 3 hours, lab 3 hours, field trips.

*What it's really about:* how minerals are formed (structurally, chemically, etc.), where they are found (i.e. in what geologic settings and with what other minerals), and how to identify them, in both hand sample and thin section.

**Course objectives:** The primary objectives of this course are to:

- Understand how atoms join to form minerals and how the structure and chemistry of a mineral determines its properties and occurrence.
- Identify minerals in hand sample and thin section.
- Understand how minerals are classified.
- Understand the importance of minerals to society and the study of the Earth.

**Course materials:**

- Text: *Earth Materials*, by Klein and Philpotts

- 10x hand lens

- Some kind of mineral atlas, to be discussed in lab (*recommended*)

- Flash cards (*recommended*)

**Field Trips (required):** This class will take a Saturday field trip Oct. 18. More information about the field trip will be provided later in the semester. Please set aside this date now!

You will also take a trip to view the excellent gem and mineral exhibit at LA's Natural History Museum. We will not do this as a group; you will be required to tour the exhibit on your own – more to come on this in class...

## Class policies:

**1) Missed labs and /or exams.** Labs and /or exams cannot be made up after the fact except in the event of an accident or medical emergency, in which case written documentation must be presented (e.g. doctor's note, police report, etc.). If you know in advance that you will not be able to attend a lab or take an exam, please speak with me about that in advance, keeping in mind that I'm not likely to make a special arrangement for you unless your circumstances are particularly difficult.

**2) Late work.** Late work will be accepted, but it comes at a price! For every **day** (not class meeting!) that your assignment is late, 15% will be taken off of your score.

**3) No cell phone use in class or lab!** Please be respectful of your instructors and fellow students by turning off / putting away cell phones during class times.

**4) Academic dishonesty.** Academic dishonesty (e.g. cheating, plagiarism, fabrication; please review student conduct in the current schedule of classes and in the university catalog) will not be tolerated under any circumstances. Honor code violations may be reported to the Office of the Vice President of Students Affairs and will result in a zero for the assignment and potential failure of the class. Bottom line: pay attention, study, learn, and do your own work!

## How will I be evaluated?

Your lecture grade will be based on your performance on exams, homework assignments, quizzes, and a field trip report (see details below). In addition, a small part of your lecture grade will derive from your attendance and participation in the course. Mineralogy is a fascinating – but *challenging* – field of study and it will be very difficult to do well in this course without attending all lectures and labs. I **strenuously** encourage you to come to class and to be prepared to learn. The more you put into it, the more you will get out of it!

Your lab grade will be based on your weekly lab reports and a final exam (see below).

Lecture (totaling 100%):

Exams: 45%

Homeworks: 30%

Quizzes: 15%

Field trip: 10%

Lab (totaling 100%):

Labs: 75%

Final exam: 20%

Attendance / Participation: 5%

**Grades:** The three lecture exams will be curved by multiplying all grades by the number necessary to bring the mean grade to 73%. If the mean grade is greater than 73%, the exam will not be curved. The final exam will be treated the same as the two midterms; it will be worth the same amount of your grade and will not be cumulative.

You will be required to complete four homework assignments. You will not be able to complete them at the last minute, so please plan accordingly. Make sure to read my policy on late work.

Quizzes will be given throughout the course of the semester. Some will be announced, others will not.

Letter grades will be assigned using the scale below. Although the cut-offs for each letter grade will not be determined until the end of the semester, they will be no *higher* than those below. For example, if at the end of the semester your score is a 76%, then the *lowest* grade you could receive is a C.

A	93
A-	90
B+	87
B	83
B-	80
C+	77
C	73
C-	70
D+	67
D	63
D-	60

**GEOL 207/L: Mineralogy Course schedule (subject to change) FALL 2014**

WEEK	DATES	TOPIC	READING*	ASSIGNMENTS	LAB
1	8/25 8/27	Introduction Atoms and Elements	Ch.1 Pgs. 75-80		NO LAB – read pgs. 39-52
2	9/1 9/3	Labor Day: <b>NO CLASS</b> Chemical bonding		<i>Form. Quiz #1</i> <i>9/3</i>	Mineral Properties
3	9/8 9/10	Mineral composition Substitutions	Pgs. 80-83 Pgs. 158-162	<b>HW#1</b> due 9/10	NO LAB – go to gem and mineral exhibit
4	9/15 9/17	Crystal Structure Coordination	Pgs. 64-74	<b>HW#2</b> due 9/17	Coordination and crystal structure
5	9/22 9/24	Crystal systems Miller indices	Pgs. 88-95	<i>Form. Quiz #2</i> <i>9/24</i>	Crystal systems
6	9/29 10/1	<b>MIDTERM #1</b> Igneous rocks	Pgs. 193-199		Silicates 1
7	10/6 10/8	Intro to silicates Igneous minerals	Pgs. 162-189 Pgs. 207-210	<i>Form. Quiz #3</i> <i>10/8</i>	Silicates 2
8	10/13 10/15	Metamorphic rocks Metamorphic minerals	Pgs.391-410 Ch. 13	<b>**field trip Oct.</b> <b>18</b>	Sulfides and carbonates
9	10/20 10/22	Sedimentary rocks Sedimentary minerals	Pgs. 309-320 Ch. 10	<b>HW#3</b> due 10/22	NO LAB – work on field trip reports
10	10/27 10/29	In class review exercise <b>MIDTERM #2</b>		<b>Field trip</b> <b>report</b> due 10/27	Halides, sulfates, and others
11	11/3 11/5	Ores / economic minerals Mineral resources	Ch. 16		Natives and oxides
12	11/10 11/12	Veteran's Day: <b>NO CLASS</b> Light	Handout		Optical 1: relief and pleochroism
13	11/17 11/19	Optical mineralogy	Pgs. 136-148	<b>HW#4</b> due 11/19	Optical 2: interference colors
14	11/24 11/26	Mineral ID charts NO CLASS: Thanksgiving	Pgs. 53-56		Optical 3: TBD
15	12/1 12/3	XRD & electron beam techniques Lab final review	Pgs. 57-59		<b>LAB FINAL</b>
16	12/8 12/10	Class review <b>FINAL 10:15 am</b>			

\*all readings are from the Klein and Philpotts course text, unless otherwise indicated  
Dates shaded in blue indicate they are being taught by a substitute instructor.

**NOTE: Final exam will be held 12/10 in LO 1210 at 10:15 am.**