**GEOL 207/L: Mineralogy FALL 2011**

Course information

Units: 3/1

Location: Live Oak 1210

Times: M & W, 11:00-12:15 (lecture)

M 2:00 – 4:45 (lab)

Instructor information

Professor: Robinson Cecil TA: John Johnson

Office: Live Oak 1230 Email: dajjucla@aol.com\*

Office hours: T & W, 2-3 pm (or by appt) \* please include GEOL207 in

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

Phone:

**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:

* Introduce crystal chemistry, crystallography, and mineral systems
* Explain the relevance of mineralogy to other fields of geosciences, as well as to fields more removed, such as material sciences, physics, viticulture (science of winemaking)
* Introduce modern methodology used in mineralogy
* Explain how minerals are classified
* Identify minerals in hand sample and thin section

**Required materials**:

Text: *Introduction to Mineralogy*, by William D. Nesse

Also, you must purchase or acquire a hand lens (info on how / where to get these to be announced)

Flash cards (suggested, not required)

**Field Trips (required)**: This class will take 1 weekend field trip (Friday October 28 – Sunday October 30). An additional field trip during one of the lab periods is planned.

**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 not be accepted, unless you have made a special arrangement with me ahead of time or you are unfortunate enough to have an accident or medical emergency, in which casewritten documentation must be presented (e.g. doctor’s note, police report, etc.).

**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 and will be reported to the Office of the Vice President of Students Affairs. Bottom line: pay attention, study, learn, and turn do your own work!

**How will I be evaluated**?

Your final grade will be 60% from lecture assignments / exams and 40% from lab assignments / exams (see details below). The “assignments” I refer to will include homework sets, announced and unannounced quizzes, field trip reports, lab exercises, and a term project (more on that later in the semester). In addition, a small part of your total grade will be derived 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!

Lecture (totaling 100%): Lab (totaling 100%):

Exams (3): 45% (15 each) Labs: 60%

Homeworks: 30% Term project: 30%

Quizzes: 10% Final exam: 10%

Field trip: 10%

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.

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 Syllabus (*subject to change*) FALL 2011**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WEEK** | **DATES** | **TOPIC** | **READING\*** | **ASSIGNMENTS** | **LAB** |
| 1 | 8/29  8/31 | Introduction  Elements and Minerals | 3-5  39-55 |  | NO LAB |
| 2 | 9/7 | No class Monday (holiday)  Crystal chemistry | 39-55 |  | NO LAB - HOLIDAY |
| 3 | 9/12  9/14 | Crystal structure and growth | 57-94 | **HW #1** due 9/12 | Field trip |
| 4 | 9/19  9/21 | Mineral Properties  Optical mineralogy | 97-112;  114-139 |  | Mineral Properties  Mineral review |
| 5 | 9/26  9/28 | Igneous minerals / Intro to silicates | 183-190;  201-228 | **HW#2**  due 9/26 | Optical Properties / Pleochroism & relief |
| 6 | 10/3  10/5 | Igneous minerals / silicates  **MIDTERM #1** | 228-260 |  | Tectosilicates |
| 7 | 10/10  10/12 | Metamorphic minerals | 261-320 | **HW#3**  due 10/10 | Ino- and sheet silicates |
| 8 | 10/17  10/19 | Sedimentary minerals |  |  | Ortho- and ring silicates |
| 9 | 10/24  10/26 | Carbonates, sulfates, oxides  ***\*\*field trip 10/28 – 10/30*** | 326-376 | **HW#4**  due 10/24 | Sulfides and carbonates |
| 10 | 10/31  11/2 | Sulfides and ore deposits | 378-393 |  | NO LAB – work on field trip reports |
| 11 | 11/7  11/9 | … / review  **MIDTERM #2** |  | **FT report**  due 11/7 | Term project;  Natives and oxides |
| 12 | 11/14  11/16 | Crystal symmetry  Crystallography | 6-34 |  | Halides, sulfates, and others |
| 13 | 11/21  11/23 | Mineral identification | 114-139 | **HW#5**  due 11/21 | Crystallography |
| 14 | 11/28  11/30 | TBD |  |  | **Term project**  **Presentations** |
| 15 | 12/5  12/7 | Lab final review  (out of town at AGU) |  |  | **LAB FINAL** |
| 16 | 12/12  12/14 | **FINAL EXAM** |  |  |  |

\*all readings are in the Nesse course text, unless otherwise indicated

***Final exam will be held 12/14 in LO 1210 at 10 am.***