

GLG 103 Introduction to Geology I: Physical Geology Lab

Credits/Periods: 1 credit/1 period. Transfers to ASU, UA, and NAU and may be used toward satisfaction of the Natural Science requirement for AA, AAS, and AGS degrees; or the Physical Science requirement of the TGECC degree program.

Course Description: May accompany GLG 101. Study of common rock-forming minerals, rocks, geologic structures, and maps.

Class Pre-requisites: None

Time/Place: T 8:30 AM – 11:00 AM/PS-174

Instructor: Steve Kadel **Office:** PS-107 **Office Phone:** (623) 845-3618

Office Hours: M,F 10:00-11:00, T 11:00 AM -12:00 PM; W 3:30-4:30 PM, R 2:00-3:00 PM; other times by appointment

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Text: Calderone and Johnson, *Physical Geology Laboratory Manual* – Fall 2011 Edition

Welcome to GLG103! GLG103, Physical Geology Laboratory is usually required in conjunction with GLG101 (Physical Geology Lecture) for full Natural Science (SQ) credit in most of our degree programs. The lab is coordinated with the lecture classes and designed to give you "hands-on" experience with many of the lecture topics. The lab, however, may be taken independently of GLG101 and is also designed as an independent class. For the next 16 weeks, we will be learning how to identify rocks and minerals and interpret geologic maps - skills that may prove useful in deciding where to buy or build a house, or perhaps find gold or other precious commodities.

Course objectives - after completing this course, you should be able to:

- Describe how the Scientific Method works.
- Describe how physical properties allow us to distinguish and identify minerals from one another.
- Describe the processes and characteristics that distinguish the different rock types.
- Identify some of the more common minerals and rocks that one might encounter. (Emphasis on AZ and SW)
- Interpret and use groundwater contour maps and determine water flow directions.
- Interpret and use Topographic maps.
- Interpret geologic structures expressed above and below ground on Geologic maps.

Keep track:

Absences: _____ *Uh-oh!*

Quizzes:

| | |
|----------|-----------|
| #1 _____ | #6 _____ |
| #2 _____ | #7 _____ |
| #3 _____ | #8 _____ |
| #4 _____ | #9 _____ |
| #5 _____ | #10 _____ |

Exams:

#1 _____

#2 _____

Attendance (65 pts , -5 per absence):

Final Exam: _____ **Field Lab:** _____

Extra Credit: _____

Study Buddy: _____

E-mail: _____

Phone: _____

GRADE CODE: _____

What do I need to do to successfully (C or better) complete this lab class?

- Attend ALL labs (minus 5 pts per unexcused absence AND minus 10 pt. quiz) and participate
- Complete all lab assignments during lab periods
- STUDY for and complete both semester exams and 10 quizzes on the days they occur
- Go on and complete exercises during in-class field trip lab near end of semester
- Take the FINAL EXAM
- Do as much extra credit as you can
- Achieve 70%+ on the sum total of all these exams and quizzes/attendance + Extra Credit

Remember - only YOU can ensure your success in this class. I facilitate, you EARN your grade.

Resources and Study Strategies: How to get the most out of this class

Geology is a physical science course. Science courses, however, are generally not easy for most people and usually take a bit of work. In addition, we all learn differently. Some of us are very analytical, whereas others may prefer a more "hands-on" approach. Still others may prefer more discussion and visual aids. Handily, there are many resources and study strategies available to you. These resources include:

- **The Lab Lecture** - The brief weekly lab lecture and the lab manual are your primary resources for this course. For most of the topics, I will be lecturing using a variety of formats - emphasizing demonstrations. PLEASE read the lab ahead of time and ask questions.
- **Talking with the Instructor Before or After Class** - you will find that I love to talk geology, so don't be shy about asking questions. I know that many of you may not be at all familiar with geology before this class. Why take the class if you already know it all?! Believe me, I still remember my intro. classes - It wasn't THAT long ago!
- **The Lab Manual** - your Lab Manual has been designed to address the content of the course in the friendliest, most complete, and least expensive manner available. Reading assignments for each course topic are listed in the accompanying course schedule. **I will expect that you have reviewed this material prior to coming to class.** (Indeed, several students have told me that the lab exercises go much faster and more smoothly after they have read the lab manual.) The lab manual also makes an excellent study guide for potential quiz material.
- **Study Groups** - Get together - help each other! I strongly encourage you to form study groups. I do not grade "on a curve" so no one is competing with anyone else for grades. Study groups can be a very effective way of learning and can help reduce some of the stress we may feel when "going it alone".

Help on the way!

Many students enter this class with anxiety - "I'm not really a 'scientific' person" or "Science classes have always been difficult for me." Other students may have various disabilities including test anxiety, which may make traditional classroom environments very difficult. Fear not, almost all such students before you have actually passed this course - many with very high grades! The success of many of these students, though, was in part because they took advantage of the many programs offered to help. Both GCC and the Applied Science department provide special programs to address the various needs of our students. These programs include:

- **GeoAssist** - a program where you can get tutorial help on the course content directly from one of the geology instructors, in an informal, easy-going environment. GeoAssist is usually held during various Instructors' Office Hours (hours for this semester will be posted on the door of PS-174 after the first week of classes). Bring your questions, confusions, & problems - or just use it as time to practice under the supervision of an instructor.
- **Center for Learning (CL)** - The CL provides free support services for all students to assist in improving student learning. These services include: (1) Scheduled and "drop-in", group and one-on-one tutoring in most academic subjects - including geology; (2) Multimedia instructional materials in basic skills areas (English, Reading, Math); and (3) Study Skills Workshops. The CL location and hours of operation are given in your Student Handbook.
- **Disabled Student Resources (DSR)** - The DSR center at Glendale C.C. provides a wide variety of services to students with disabilities which otherwise might impair their ability to function in the typical classroom setting. Hearing-impaired students may be provided with a trained "signer" who translates my lectures in real time. DSR provides reading services and word enlargement services for visually impaired students, and administers quizzes and examinations to these students. Any student who has any recognizable disability that he/she feels may impair their ability to perform the course requirements and expectations should contact me during the first week of class to see how we can accommodate and facilitate your completion of this course.
- **Counseling Center** - The Counseling Center provides students with career counseling, one-on-one counseling, personal counseling, personal development counseling and acts as a "clearinghouse", guiding students to the other services available on campus. Further information on the Counseling Center is provided in your Student Handbook.
- **Child Care Resource** - According to campus policies, only those students enrolled in a particular class are permitted to attend that class. Consequently, children of students are not allowed in the classroom. For emergency childcare, call the Child Care Resource at (602) 244-2678, from 8:30 PM – 5:00 PM, M-F.

Grading

Assessment for this course will be based on 14 lab exercises, 10 short quizzes, two mid-term exams and a final exam. Letter grades will be assigned on a straight 10% basis: 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 0-59% = F. Points below are based on a **total of 360**. Total points may be changed during the semester. The lowest of your quiz scores will be dropped. Extra credit will be offered for a total of ~30 points (~8.5 % of the total points) over the length of the semester. Approximately 15 of these extra credit points will be distributed among the quizzes and exams. The remaining 15 points will be offered in one of two ways (you may choose **only one option**). There will be weekday and weekend field trips, and report-writing options for extra credit. **Specific extra credit option details are TBA, and will be outlined during the first few weeks of lab classes.** There will be **absolutely no further** extra credit offered.

| Point Distribution | |
|--|------------------------------------|
| Labs: 95 pts (13 @ 5 pts + 2 @ 15 pts) | A = >322 pts |
| Quizzes: 90 pts (Best 9 of 10 @ 10 pts) | B = >286 – 322 pts |
| Exams: 100 pts (2 @ 50 pts) | C = >250 - 286 pts |
| Final Exam: 75 pts (24 pts rocks/minerals, 51 pts maps/diag.) | D = >214 - 250 pts F = ≤214 pts |
| Total: 360 pts | |

- Exam and quiz formats:** Multiple choice, matching, listing, true/false, short answer and essay; hand specimen identification of rocks and minerals; practical cross-section drawings and map reading/interpretations.

General Class Policies

- Attendance:** Each student will be expected to attend all classes. After two unexcused absences or disruption of class, the instructor may initiate the withdrawal process. Work missed during officially excused absences may be made up by *prior* arrangement with the instructor. It is the student's responsibility to inform the instructor of an officially excused absence as soon as possible. Absences for emergency situations may be excused unofficially by the instructor. Make-ups for such absences will be at the discretion of the instructor. *There will be no make-ups for unexcused absences.*
- Tardiness:** Although tardiness is generally discouraged, minor tardiness (less than 5 minutes) will be tolerated so long as the student does not disrupt the class. You will not, however, be allowed extra time to make-up for the time lost on quizzes or exams. Quizzes or exams missed by tardiness will be forfeited by the student.
- Withdrawals:** Withdrawals are **not automatic**. If you wish to drop the course, it is your responsibility to complete the appropriate paperwork as prescribed by the Admissions Office. Students who withdraw without completing a Drop/Add form will receive a grade of "F" or "Y". The last dates for student-initiated withdrawals are listed at the bottom of the course schedule on the next page.
- Academic Misconduct and Academic Dishonesty** will not be tolerated. Students engaging in misconduct or dishonest practices on exams or quizzes will be dealt with according to the guidelines established in the Student Handbook.
- Audio/Visual Recording:** Neither audio nor visual recording of laboratories is permitted.

GLG103, Tuesday sections

Spring 2012

| Week | Dates | Topic | Quiz/Exam/Homework |
|------|-------|--|--|
| 1 | 1/17 | Ex 1 Introduction - Plate Tectonics (5 pts) | |
| 2 | 1/24 | Ex 2 Phys Properties of Minerals (5 pts) | Quiz (10 pts) over Plate Tectonics |
| 3 | 1/31 | Ex 2 Mineral Identification (5 pts) | Quiz (10 pts) over Physical Properties |
| 4 | 2/7 | Practical Exam #1: Minerals Ex 3 Rock Textures Part I (5 pts) | Exam (50 pts) 90 minutes |
| 5 | 2/14 | Ex 3 Rock Textures Part II (5 pts) | Quiz (10 pts) over Rock Textures Part I |
| 6 | 2/21 | Ex 4 Igneous Rocks (5 pts) | Quiz (10 pts) over Rock Textures Part II |
| 7 | 2/28 | Ex 5 Sedimentary Rocks (5 pts) | Quiz (10 pts) over Igneous Rocks |
| 8 | 3/6 | Ex 6 Metamorphic Rocks Ex 7 Rock Identification (5 pts) | Quiz (10 pts) over Sedimentary Rocks |
| 9 | 3/13 | Spring Break | No Class Meeting |
| 10 | 3/20 | Practical Exam #2: Rocks Ex 8 Relative & Absolute Dating (5 pts) | Exam (50 pts) 90 minutes |
| 11 | 3/27 | Ex 9 Geological Maps I (5 pts) | Quiz (10 pts) over Relative Dating |
| 12 | 4/3 | Ex 10 Topographic Maps I (5 pts) | Quiz (10 pts) over Geologic Maps |
| 13 | 4/10 | Ex 11 Topographic Maps II Ex 12 Applications of Topo Maps (5 pts) | Quiz (10 pts) over Topo Maps I |
| 14 | 4/17 | Ex 13 Geological Maps II (5 pts) | Quiz (10 pts) over Topo Maps II |
| 15 | 4/24 | Ex 14 Field Trip (15 pts) | |
| 16 | 5/1 | Final Practical Exam: 66% Maps, 33% Rocks & Minerals | Exam (75 pts) full period |

3/2 Last day for student-initiated withdrawal, **without** instructor signature and with a grade of "W"

4/23 Last day for student-initiated withdrawal, **with** instructor signature and with a grade of "W" or "Y"

Course content may vary from this outline to meet the needs of this particular group. The instructor reserves the right to alter the schedule via verbal announcements or instructions in class. The student is responsible for noting such changes and acting accordingly -- even if the student was absent on the day such announcements were made.

I acknowledge that I have received a syllabus for the course described above. I have read it and understand the attendance, withdrawal, grading and other policies. I recognize that to complete this course, I may be required to spend up to 2 to 3 hours of study outside of class for every hour spent in class.

Signature: _____

Printed Name: _____ **GRADE CODE:** _____
(1 letter followed by 3 numbers)

Date: _____

Questionnaire:

How did you select this and other courses for which you are registered this semester? On-line schedule? Paper schedule? Did you visit a campus advisor? If so, what assistance did you receive from this person?

How much Physics, Physical Science, Chemistry, and Math have you had?

Are you (choose answer that is closest to your situation):

- (A) A geology major
- (B) Exploring the possibility of majoring in geology
- (C) Unsure of what you're majoring in
- (D) Sure that you are majoring in something other than geology. If so, what is your major?
- (E) Other (please explain).

What do you hope to get out of this course?

What part (if any) of geology lab do you think will be most interesting to you?