

**Physical Geology  
GEOL 1403; Section A8  
Blinn College, Bryan Campus  
Course Information Sheet**

**FALL 2009**

**Instructor:** Dr. Irina GOLL  
**Classroom:** r. G 216  
**Office:** r. G 247  
**Tel:** (979) 209-7461

**Class Schedule:** MW 5:40 - 8:20 *p.m.*  
**Office Hours:** MW 3:00 - 5:00 *p.m.*; F 11:50 - 1:00 *p.m.*  
Tues. *Open Lab* 7:00 – 8:30 *p.m.* r.215  
**E-mail:** [irina.goll@blinn.edu](mailto:irina.goll@blinn.edu)

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## **General Course Information**

**Course Description:** General principles of physical geology. An introduction to the origin, composition, structure and dynamics of planet Earth. Topics are explored within the general context of plate tectonic theory and include: minerals and rocks, weathering and erosion, geological time, earthquakes, volcanoes, mountain building, oceans, landforms, and natural resources. Laboratory work involves the practical application of geological principles such as rock and mineral identification, geologic and topographic map interpretation, and geological data analysis. Three class hours and three laboratory hours per week. Credit: Four semester hours.

**Prerequisites:** none

**Core Curriculum Course:** This is a course in the 42-hour Core Curriculum of Blinn College. As such, students will develop proficiency in appropriate intellectual competencies, exemplary educational objectives and general perspectives. The URL of the Blinn College Core Curriculum Web Site is <http://www.blinn.edu/corecurriculum.htm>.

**Course Objectives and Student Learning Outcomes:** Upon completion of the course, the student will have an overall average of > 60% of the combined lecture and laboratory components of the course. This includes at least 3 major exams and quizzes given at the discretion of the Instructor. In the laboratory, the student will demonstrate an understanding of the lab activities through analysis of materials presented in lab and by being able to use these materials to solve problems and explain geological processes.

These learning outcomes will include the student demonstrating competence in the course objectives listed below:

1. Relate topics from physical geology to Earth's history (e.g., plate tectonics, rock cycle).
2. Analyze the formation, classification and interpretation of sedimentary rocks.
3. Apply stratigraphic principles to interpret the rock record.
4. Apply relative and absolute dating principles to interpret the geologic history of rock units.
5. Explain evolutionary theory and relate it to changes in the fossil record through time.
6. Identify and classify fossils (including mode of preservation) and apply them to interpret age and environment of strata.
7. Characterize each time period of Earth's history (beginning with its origin) with regard to changes in the paleogeography, environment, and biota.

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**From Lab:**

1. To apply the scientific method in developing and testing geological hypotheses.
2. To identify and interpret rocks and minerals.
3. To determine the relative and absolute age of rock formations and geological events.
4. To learn how to calculate rates and directions of tectonic plate motion.
5. To assess a geohazard risk (earthquake, volcanic eruption, flood, etc.).
6. To analyze geologic maps and structures
7. To identify landforms based on topographic map data and remote imagery.

**Textbooks and Other Materials:****Required Textbooks:**

**EARTH** *An Introduction to Physical Geology* : by Tarbuck and Lutgens, 9<sup>th</sup> Edition, Prentice Hall, 2008.

*(optional) Rocks and Minerals (Smithsonian Handbook)* by Pellant, Dorling Kindersley, 2002

**Required Laboratory Materials:**

Laboratory Manual in Physical Geology.8<sup>th</sup> Edition, Ed. Busch & Tasa

Other materials are provided by Blinn College.

**Course Requirements:**

The student should do each of the following:

1. Read the assigned chapters in the textbook
2. Participate in class discussions
3. Complete assigned outside reading material and homework
4. View audiovisual materials on selected topics and be able to give Presentations (as a paper copy of Power Point).
5. Complete the exams on the assigned dates; the exams may include questions like give a definition and essay.
6. Read and comprehend each exercise assigned in the laboratory manual.
7. Successfully complete each laboratory exercise in class.
8. Learn to use and/or analyze geological material and maps as needed to complete the laboratory exercise.

**ADA Statement:** Students with physical or learning disabilities must present documentation to the instructor from the Office of Disability Services (Room S157, Science Building) to receive accommodation on exams and assignments.

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**Class Policies :**

**Eating and Drinking:** Neither eating nor drinking is allowed in classrooms or laboratories.

**Scholastic Honesty:** Blinn College does not tolerate cheating, plagiarism or other acts of dishonesty. Definitions of these acts and procedures for dealing with them are described under Scholastic Dishonesty in the *Blinn College Student Handbook*. Copies are available at the information desk in the Administration Building.

**Blinn College Civility Statement:** Members of the Blinn College community, which includes faculty, staff and students, are expected to act honestly and responsibly in all

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aspects of campus life. Blinn College holds all members accountable for their actions and words. Therefore, all members should commit themselves to behave in a manner that recognizes personal respect, and demonstrates concern for the personal dignity, rights and freedoms of every member of the College community, including respect for College property and the physical and intellectual property of others.

**If a student is asked to leave classroom because of uncivil behavior (rudeness, cell phone text messages, sleeping in the classroom), the student may not return to that class until he or she arranges a conference with the instructor. It is the student's responsibility to arrange for this conference.**

**Attendance:** The College District believes that class attendance is essential for student success; therefore, students are required to promptly and regularly attend all their classes. Each class meeting builds the foundation for subsequent class meetings. Without full participation and regular class attendance, students shall find themselves at a severe disadvantage for achieving success in college. Class participation shall constitute at least ten percent of the final course grade. It is the responsibility of each faculty member, in consultation with the division chair, to determine how participation is achieved in his or her class. Faculty will require students to regularly attend class and will keep a record of attendance from the first day of class and/or the first day the student's name appears on the roster through final examinations. If a student has **one week's worth of absences** during the semester, **he/she will be sent an e-mail** by the College requiring the student **to contact his/her instructor and schedule a conference** immediately to discuss his/her attendance issues. If the student subsequently **accumulates two weeks worth of absences**, he/she will be **administratively withdrawn** from class.

There are **three forms of excused absence** officially designated by Blinn College: (1) Observance of religious holy days: The student should notify his/her instructor(s) not later than the 15<sup>th</sup> day of the semester concerning the specific date(s) that the student will be absent for any religious holy day(s); and (2) Representing Blinn College at an official institutional function; and (3) official involvement in a high school activity for "dual credit" students. Other excuses will be considered and may be considered excusable at the instructor's discretion, with documentation.

Unexcused absences: Missing lecture or lab or both will **count as one absence**.

**How attendance will be implemented in my class:** Attendance will be taken in each lecture and lab class. A lecture **sign-in sheet** will be posted during lecture and a lab sheet will be posted for students to sign upon completion of the lab work; **it is the student's responsibility to sign each time!** You must be present from the **start** of the lab class to the **end** in order to receive credit for the lab (unless a special arrangement has been made with me in advance). If you must miss a class meeting and know in advance please **contact me in advance** (by e-mail) and make arrangements to get the information that is to be covered. In some cases prior arrangements may be made to attend another lab or lecture section but this must be cleared with me in advance.

If a student chooses to drop the course, it is that student's responsibility to complete a drop form at the Office of Admissions and Records. Failure to do so could result in a grade of F in the course.

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### **Section Specific Information:**

**TENTATIVE SCHEDULE**  
**GEOL 1403 Physical Geology – Sect. A8**  
**Fall Semester, 2009**

	<b>Lecture Topic</b>	<b>Reading Assignment</b>	<b>Lab Exercise</b>
Aug 31	Intro to Geology	EARTH, Ch. 1	Movie Rock Cycle
Sep 2	The Third Planet	EARTH, Ch. 1 & 24	Origins (movie & quiz)
Sep 7	Plate Tectonics	EARTH, Ch. 2	Lab 1(part) and 2 (part)
Sep 9	Matter & Minerals	EARTH, Ch. 3	Lab 3, Mineral Properties
Sep 14	Matter & Minerals (p.2)	EARTH, Ch. 3	Lab 3a, Identification of Min
Sep 16	Igneous Rocks	EARTH, Ch. 4	Lab 4, Igneous Rocks
Sep 21	Volcanoes	EARTH, Ch. 5	Lab 5, Igneous Rocks
<b>Sep 23</b>	<b>Lecture EXAM #1</b>	<b>EARTH, Ch. 1 – Ch. 5</b>	Lab -movie "Weathering"
Sep 28	Sedimentary Rocks	EARTH, Ch. 7	Lab 6a, Sedimentary Rocks
Sep 30	Sedimentary Rocks	EARTH, Ch. 7	Lab 6b, Sedimentary Rocks
<b>Oct 5</b>	Metamorphism	EARTH, Ch. 8	<b>Student Projects</b>
Oct 7	Geologic Time	EARTH, Ch. 9	Lab 7a, Metamorphic Rocks
			Lab 7b, Metamorphic Rocks
<b>Oct 12</b>	<b>Lab Exam # 1</b>	<b>Rocks &amp; Minerals</b>	
Oct 14	Geologic Time	EARTH, Ch. 9 & 22	Lab 8 Dating of Rocks & Fossils
Oct 19	Crustal Deformation	EARTH, Ch. 10	Lab 10, Geologic Structures
<b>Oct 21</b>	<b>Lecture EXAM #2</b>	<b>EARTH, Chs. 5 – 10 &amp; 22</b>	<i>Labs make up</i>
Oct 26	Earthquakes	EARTH, Ch. 11	Lab 16, Earthquakes
Oct 28	Earth's Interior	EARTH, Ch. 12	Movie "Earth Interior"
Nov 2	Divergent boundaries	EARTH, Ch. 13	Lab 9 (pt.A,B) Topo Maps
Nov 4	Convergent boundaries	EARTH, Ch. 14	Lab 9 (pt.C,D) Topo Maps
Nov 9	Mass Wasting	EARTH, Ch. 15	Labs 8-10 & 16 completed
<b>Nov 11</b>	<b>Lecture EXAM #3</b>	<b>EARTH, Ch. 11-15;</b>	
Nov 16	Running Water	EARTH, Ch. 16	Lab 11, Stream Processes
Nov 18	Groundwater	EARTH, Ch. 17	Lab 12, Groundwater
Nov 23	Glaciers & Glaciations	EARTH, Ch. 18	Lab 13, Glacial Processes
Nov 30	Deserts and Winds	EARTH, Ch. 19	Lab 14, Dryland Landforms
Dec 2	Shorelines	EARTH, Ch. 20, 21	Lab 15, Coastal Processes
<b>Dec 7</b>	<b>Lecture EXAM #4</b>	<b>EARTH, Ch. 16 – Ch. 21</b>	<i>Labs. 11-15 completed</i>
<b>Dec 9</b>	<b>Lab EXAM #2</b>	<b>on Labs 8 - 16</b>	

**Final EXAM: December 11, 2009, Friday, 5:30 – 7:30 p.m., r. 216**

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**e-Campus Support:** Office of Distance learning, Blinn College:  
<http://www.blinn.edu/disted/index.htm>, [support@blinn.edu](mailto:support@blinn.edu), or (979) 209-7298

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**Criteria for determining Final Grade:**

Lecture Exams and Assignments: 46%

Labs and Lab Exams: 34%

Comprehensive Final Exam: 20%

**POINTS DISTRIBUTION**

		<b>GRADES</b>
Lecture Exams (4 @ 100 points each)	<b>400</b> points	
Lab Assignments (24 @ 5 points each)	<b>120</b> points	900-1000 points = <b>A</b>
Home quizzes (20 @ 3 points each)	<b>60</b> points	800-899 points = <b>B</b>
Project (1 @ 20 points)	<b>20</b> points	700-799 points = <b>C</b>
Lab Exams (2 @ 100 points each)	<b>200</b> points	600-699 points = <b>D</b>
		<i>below 600 points = F</i>
Final Exam:	<b>200</b> points	
<b>Total:</b>	<b>1000</b> points	

The **Lecture Exams** and **Final Exam** may contain a variety of **question formats** including: *multiple choice, true-false, word analysis and visual.*

Please, bring **Green Scantron** and a #2 pencil for each EXAM. **If you cannot take the Lecture Exams** at Blinn College Campus together with your class (see: **Make-ups** paragraph) **contact your instructor**, so that other arrangements can be made at the Learning Center.

The **Lab Exams** are practical “hands-on” exams. They will be administered at the Blinn College Campus class rooms and **can not** be taken at the Learning Center.

**Lab and Lecture Assignments:** Students have to read the recommended chapters and Lab works **before** the classes. Lab Manual (**new**) must be brought for every lab work.

**Home Quizzes** - every student will be asked to do **20 quizzes** (see Points Distribution paragraph) covering material from **ch 1** through **ch 20** (see tentative schedule). How to find questions for the quiz? Please, use **CD** (*enclosed with your text book*). It is called **GEODE: EARTH**. At the *end of every chapter* there is a quiz. Students are to **answer** the questions, **print** the completed quiz and **bring** a paper copy to class. The quizzes will be collected at the beginning of every class and graded by your instructor. If your book did not have a CD you will find a copy of it at the Library.

**Make-ups:** There will be no make-up exams or graded assignments, except special cases (Example: sick / hospitalized before or the day of exam; got into a car accident the day of exam; death in the family). For the cases mentioned above a document (*photocopy of doctor's note, police report, obituary etc*) must be presented.

**Extra Credit:** Students can **earn extra credit points** toward the final grade in a way:

1. Answering the extra credit points questions given at the end of each lecture exam.
2. 98-100 % participation in the lectures and labs – 20 points.
3. Students best projects will be awarded from 1 to 5 bonus points
4. Best teams and team leaders will get up to 10 bonus points

*Extra credit points* will be totaled with the other credit points.