

GY 111-102: Physical Geology
Autumn 2008
Your Host: Dr. Doug Haywick
<http://www.southalabama.edu/geology/haywick>

Objectives and Goals: The subject matter examined in the course covers the basics of physical geology: the chemistry and properties of minerals, the composition of igneous, sedimentary and metamorphic rocks and the primary earth processes responsible for rock deformation. Topics covered are itemised below. If all goes as planned, upon completion of this course, students will 1) be able to identify common rocks and minerals; 2) be able to interpret geological maps and 3) understand major theories of Earth sciences (including plate tectonics). Please note that this is a tentative schedule and the management reserves the right to change some of the material in the event of unforeseen circumstances. You are expected to keep up with the reading prescribed for each week. GY 111 is the first of 2 introductory courses in geology. GY 111L is a required co-requisite.

LECTURE GAME PLAN (revisions are in **RED** text)

Week 1 INTRODUCTION

- Mon: 1) Introduction, Course Structure; Geo-careers
- Wed: 2) Intro to Plate Tectonics
- Fri: 3) Plate Tectonics and the rock cycle

Week 2 MINERALS

- Mon: 4) Basic Chemistry
- Wed: 5) Crystal Chemistry
- Fri: 6) Mineral Classification

Week 3 PLATE TECTONICS AND VOLCANISM

- Mon: 7) Labour Day Holiday (Sept 1)
- Wed: 8) Economic geology
- Fri: 9) Plate tectonics and volcanism

Week 4 VOLCANIC AND PLUTONIC ROCKS

- Mon: 10) Volcanoes and volcanic landforms
- Wed: 11) Bowen's Reaction Series
- Fri: 12) Extrusive Igneous Rocks

Week 5 IGNEOUS AND SEDIMENTARY PROCESSES

- Mon: 13) Intrusive Igneous Rocks
- Wed: 14) **Lecture Test 1 (September 17)**
- Fri: 15) Weathering and erosion

Week 6 SEDIMENTATION

- Mon: 16) Soil development and sediment
- Wed: 17) Sediment classification and transport
- Fri: 18) Terrestrial environments 1: alluvial fans and deserts (**Assignment**)

Week 7 SEDIMENTATION

- Mon: 19) Terrestrial environments 2: rivers and deltas
- Wed: 20) Marine environments 1: beaches
- Fri: 21) Marine environments 2: reefs and carbonate shelves

Week 8 SEDIMENTATION

- Mon: 22) Marine environments 3: deep marine areas
- Wed: 23) Groundwater and hydrogeology (**Assignment**)
- Fr: 24) Lithification

Week 9 GEOLOGICAL TIME AND ROCK DEFORMATION

Mon: 25) Geological time
Wed: 26) Geological maps
Fri: 27) Bedding and attitude (**Assignment**)

Week 10 STRUCTURAL GEOLOGY

Mon: 28) **Lecture test 2 (October 20)**
Wed: 29) Rock Deformation
Fri: 30) Folds

Week 11 STRUCTURAL GEOLOGY

Mon: 31) Faults
Wed: 32) Earthquakes 1
Fri: 33) Earthquakes 2 (**assignment**)

Week 12 METAMORPHISM AND STRUCTURAL GEOLOGY

Mon: 33a) Still more earthquakes
Wed: 34) Agents of metamorphism
Fri: 34a) no lecture

Week 13 METAMORPHISM

Mon: 35) Regional metamorphism
Wed: 37) Contact metamorphism
Fri: 38) Metamorphic facies (**assignment**)

Week 14 MOUNTAIN BUILDING

Mon: 39) Retrograde Metamorphism
Wed: 40) Mountain Building 1 (Isostasy)
Fri: 41) Mountain Building 2 (thrust faults)

Week 15 MOUNTAIN BUILDING

Mon: 42) Mountain building 3 (Appalachians) [**Rock/mineral Assignment Due**]
Wed: 43) None; Turkey Day Holiday (Nov 26-30)
Fri: 44) None; Turkey Day Holiday (Nov 26-30)

November 28-30 [*Mobile Rock and Mineral Society rock/mineral show- Mobile Show grounds*]

Week 16 FINAL STUFF

Mon: 46) Final Exam preparation

Monday Dec 8: Final Exam 10:30 AM- 12:30 PM

Reasonably useful information:

Text book (recommended): Grotzinger, J., Jordan, T.H., Press, F. and Siever, R., 2007. Understanding Earth (5th edition). W.H. Freeman and Co., New York,

Lab Manual (required): Haywick, D. 2001. Earth Materials: an introductory laboratory manual for students in GY 111 (second edition). University of South Alabama, (**Free download**)

<i>Assessment:</i>	Attendance*	15%
	Rock/mineral assignment	15%
	Class Assignments	15%
	Lecture Test 1	10%
	Lecture Test 2	20%
	Final Exam	<u>25%</u>
		100%

Grading: A - 90+ B - 80 to 89 C - 70 to 79 D - 60 to 69 F - 59 and below

Laboratories: You need to be in a GY 111L lab in the same semester that you are doing GY 111. If all is going to plan, the material in each will flow nicely together. Please note: It is up to you to examine the rocks and minerals that are assigned in the lab course and to do any additional laboratory assignments your lab instructor gives you. They will also help with the lecture material.

Missed exams\ lateness penalty: The reason for producing a syllabus is to give students advanced notice of exams and assignment due dates. **Translation:** there is no excuse for missing exams or turning journal assignments in late. As such you will receive an F if you do not turn in your assignments by the due date. If you have a legitimate excuse for missing an exam (i.e. medical problem), you will be permitted to write a make-up during the last week of classes provided that you show me a signed certificate from a medical doctor stating that it was impossible for you to make the exam. **The make up exam will consist of 2 essay questions (i.e. no easy stuff like multiple choice questions).** The rock/mineral assignment is due at the start of class on November 27th. I do not accept late submissions.

Attendance:* It seems that a good number of people who take courses feel they do not have to attend the lectures. Nothing could be further from the truth. Much of the material we will discuss will not be covered in the text book and if you miss the lectures and/or labs you will miss this material. Attendance is mandatory and assessable in GY 111 (it's worth 15% of your mark). I will dock you if you have 4 or more unexcused absences (approximately 10% of the lectures). If you have 8 or more unexcused absences (approximately 20% of the lectures) you will receive 0% for attendance. **If you miss more than 10 lectures/labs, I will drop your final grade an additional 10%. Note: I will base your attendance on the class role I record at the start of the class. If you missed the role because you were late, it is up to you to notify me before the end of the class. Excessive tardiness will be considered equivalent to missing classes. By the way, if your name is not on that roll, you will be marked absent. **There will be no** exceptions to this attendance policy.

Disability disclaimer: In accordance with the American's with Disabilities Act (ADA) students with bona fide disabilities will be afforded any reasonable accommodation. The Office of Special Student Services will certify a disability and advise faculty members of reasonable accommodations. If you have a specific disability that qualifies you for academic accommodations, please provide us with certification from the Office of Special Student Services, directed by Ms. Andrea Agnew, and located in the Student Center, room 270. The phone number is 460-7212.

Changes in Course Requirements: Since all classes do not progress at the same rate, instructors may wish to change the number and frequency of exams, or the number and sequence of assignments. Inclement weather (e.g., hurricanes) may also force rescheduling of lectures, assignments or exams. When ever possible, this material will be made up. Students will be given adequate written notice of any changes in lecture sequence, assignment due dates and/or exam date changes.

The fine print: Plagiarism and cheating are not permitted in this class. In fact, either of them will result in severe embarrassment to you and quite possibly an F for the assignment or exam in question if you are caught. If you are unsure of what constitutes plagiarism or cheating, talk to me. This will be your only warning.

D. Haywick Contact Information and Schedule Fall 2008 Semester

How & where to find Doug: I reside in LSCB room 049. I believe in open office hours, so feel free to pay me a visit anytime between 9:00 am & 5:00 pm (except on my research days!). However, I will generally be in my office during the times posted on my schedule. Should you be unsuccessful in your attempts to find me, fear not! You have two options: 1) check the Where's Doug note on my door for my location during normal office hours, or 2) leave a message for me:

Telephone: 460-7569 (Haywick's office – you can leave a message).

E-mail: dhaywick@jaguar1.usouthal.edu

internet: <http://www.southalabama.edu/geology/haywick>

D. Haywick Hours (Fall 2008 Semester)

Time	Monday	Wednesday	Friday
7:00-7:50			
8:00-8:50			
9:05-9:55	Office	Office	
10:10-11:00	GY 305* (LSCB 337)	GY 305* (LSCB 337)	Office
11:15-12:05	GY111-102 (LSCB 335)	GY111-102 (LSCB 335)	GY111-102 (LSCB 335)
12:20-1:10			Office
1:25-2:15	Office	Office	
2:30-3:20	Reserved for GY Majors and special topics	GY111L-106	
3:35-4:25		(LSCB 335)	

Time	Tuesday	Thursday
8:00-9:15	Office	Office
9:30-10:45		
11:00-12:15	GY 302 (LSCB 337)	GY 302 (LSCB 337)
12:30-1:45		
2:00-3:15	GY 302 Lab (LSCB 337)	GY 305 Lab* (LSCB 337) ends 4:00 pm
3:15-4:50		

* Haywick teaches his component of GY 305 in the first part of the semester

Note: shaded areas are research\committee\personal times: STAY AWAY!



Please turn off all beepers and cellular phones before you enter the classroom. I hate those noisy things and they can really be an embarrassment to you when they go off. (The embarrassment comes primarily from the tennis balls I throw in your direction)