

ES 103-3B: EARTH SCIENCE – HISTORICAL GEOLOGY

Spring semester, 2004 - Prof. Scott Brande
 Office: Chemistry Building (CHM), Rm. 289
 tel. & voicemail: 934-8280; Fax: 934-2543;
 email: sbrande@uab.edu
 Class website: <http://courses.uab.edu>

GOALS: We will study the action of physical processes on Earth, examine various modern and ancient environments, explore the planet's biosphere and fossil record, and apply present day knowledge to the interpretation of ancient rocks and fossils for a better understanding of the modern and ancient Earth. We will learn, practice, and employ critical thinking skills to analyze and solve scientific problems in earth science.

COURSE TYPE LECTURE-3B,

Mon. & Wed., 5:30 PM – 6:45 PM,
 EB - Room 133

OFFICE HOURS Tuesday 10:00 AM – 11:00 AM, open hours, or any convenient time; call me to schedule an appointment

TEXTBOOK Stanley, *Earth System History*, 1999; Jim Lacefield, *Lost Worlds in Alabama Rocks*, 2000 (also used for ES104 lab).

POLICIES AND PROCEDURES

1. **Expected study:** UAB expects you to study about 2 hours outside of class for each hour of lecture. Therefore, UAB expects you to study about 5 hours/week (2 x 2.5 hr. lecture/week), or about an hour per day for this course.
2. **Tests:** 4 hourlies, 1 final exam (not cumulative) (see calendar of reading assignments and exam schedule). All tests begin promptly at the beginning of class. The final exam begins at the time published in the course schedule (also see below). No review questions answered on exam day – ask your questions during previous class periods. ***If you arrive late to an exam, you may not be permitted to take the test.***
3. **Drop Policy: The lowest TWO scores of the four exam grades will be dropped!!!** The final exam is not one of the dropped tests. Plan your schedule carefully – if you miss an exam for any reason, including circumstances beyond your control (health, accident, work, weather, etc.), you will receive a zero for any exam that you miss. ***If you miss three of the four hourly exams, you will receive an “F” for the course. No make-ups for any missed exam!*** If you cannot take at least two of the hourlies and the final exam, you should withdraw from this course and enroll later when you have more time for this course.
4. **Optional Final Exam: The final exam is optional only for those students who 1) take all four exams, and 2) who achieve a 90% or higher average on all four exams (without dropping any).**
5. ***If you miss the final exam -- very serious business!*** If you believe you may miss the final exam, you must contact me **before** your absence, or else no later than 24 hours after the exam. ***No make-up final exam for***

any unexcused absence – you will fail the course if you miss the final exam without a documented and approved excuse!

6. **Calculation of Final Grade:** The two-quiz average counts 2/3rds towards your final grade; the final exam counts 1/3rd towards your final average (rounded to nearest whole number).
 7. **Approximate grading scale:** Your course letter grade is determined from your final average grade (see #4, #6 above). A:100-90 B:89-80 C:79-70 D:69-60 F:below 60. **Grades for this course are scaled to a class average of 75. If the final class average is below 75, a bonus score (same for each student) will be added to each student's final average in order to raise the class average to 75. Such a bonus may or may not increase the letter grade for an individual student.**
 8. **Extra credit work:** Because of the drop policy, ***no extra credit work is available for any reason.***
9. ***A #2 pencil is required for the scantron exam sheets. If you forget a pencil, or if you forget to write your name/number on your exam, your grade may be reduced by 5% (1/2 letter grade).***
10. **ATTENDANCE:** You are responsible for all information presented in this class and in the assigned readings. Test questions are heavily weighted towards lecture material. Exams will emphasize critical thinking skills that will be demonstrated in class. It is important that you attend lectures, keep up with the assignments, review your notes regularly, and study according to UAB's expectation.
 11. **UAB official closing:** In the event of severe weather or other conditions that may make it hazardous for you to attend class, you may wish to know whether a class has been canceled. WBHM, 90.3 FM, is the official voice of UAB, and will announce any closing of UAB. No class in this course will be held during an official closing. However, if you miss a class because of weather (or any other reason) and the class has not been officially canceled, your absence will be governed by the procedures specified above (#2, #3, #5).
 12. **Notes:** My class notes are available for free Web access. Instructions for download will be provided in class.
 13. **Math:** Some problems to be solved are quantitative and require mostly pre-college math skills. If you lack such skills, you should complete your UAB math requirement before taking this course. Please bring a calculator to class.
 14. **Disability:** If you require accommodations, you must identify yourself to me.
 15. **Honesty:** UAB academic misconduct policies (see the UAB catalogue) will be followed in this course.

PLEASE INTERRUPT ME TO ASK QUESTIONS.
Silence all cellphones during lecture.
No snacks or meals during lectures.
Remove hats during exams.

ES 103 - Spring semester, 2004				
PROF. S. BRANDE				
Stanley, Earth System History				
APPROXIMATE CLASS SCHEDULE: subject to change				
PERIOD	DATE	CHAPTERS	TOPICS	EXAM
1	7-Jan	1	Introduction	
2	12-Jan	1	Introduction	
3	14-Jan	2	Rock-forming minerals and Rocks	
4	19-Jan		No lecture - Martin Luther King, Jr. Day	
5	21-Jan	2	Rock-forming minerals and Rocks	
6	26-Jan	5	Sed. Environments	
7	28-Jan		Exam #1, no lecture	#1
8	2-Feb	5	Sed. Environments	
9	4-Feb	4	Environments and Life	
10	9-Feb	4	Environments and Life	
11	11-Feb	3	Diversity of Life	
12	16-Feb	3	Diversity of Life	
13	18-Feb		Exam #2, no lecture	#2
14	23-Feb	1,6	Correlation, Geologic Time	
15	25-Feb	1,6	Correlation, Geologic Time	
16	1-Mar	7	Evolution	
17	3-Mar	7	Evolution	
	9-Mar		Last day to withdraw with "W"	
18	8-Mar	7	Evolution	
19	10-Mar		Exam #3, no lecture	#3
20	15-Mar	8	Plate Tectonics	
21	17-Mar	9	Mountains + PT	
22	22-Mar		No class - Spring Break	
23	24-Mar		No class - Spring Break	
24	29-Mar	11	Archaean	
25	31-Mar	12	Proterozoic	
24	5-Apr	13, 14	Early Paleozoic, Mid Paleoz.	
25	7-Apr		Exam #4, no lecture	#4
26	12-Apr	14, 15	Mid-Paleozoic, Late Paleoz.	
27	14-Apr	16	Early Mesozoic	
28	19-Apr	17	Late Mesozoic	
29	21-Apr	18,19	Early Cenozoic	
30	26-Apr	19, 20	Late Cenozoic	
	5-May	FINAL EXAMINATION, 4:15pm-6:45pm		

HISTORICAL GEOLOGY LABORATORY -- ES 104

Spring Semester, 2004

Prof. Scott Brande

Office: Chemistry Building (CHM), Rm. 289

Tel. & voicemail: **934-8280**; Fax: **934-2543**, e-mail: **sbrande@uab.edu**

WebCT course website: <http://courses.uab.edu/>

Laboratory: Tuesday, 5:30PM to 8:30PM

Lab manual: **Lost Worlds in Alabama Rocks**, Lacefield, 2000 (required); also, obtain notes from web page (see handout for access)

Office Hours: any convenient time, call Prof. Brande for an appointment

Grading: **80%** quizzes; **20%** weekly write-ups

- a. 6 quizzes, 1 final quiz. You must take at least 4 of the 6 quizzes. If you miss more than two quizzes, you will receive an "F" for the course, *even if your absences are caused by circumstances beyond your control*. If during the term you miss two quizzes, please note that on missing a third quiz, you will automatically fail the course. If you believe that your personal schedule may prevent you from taking all the required exams (4 of 6 quizzes), you should consider withdrawing from this course and return another term when you are able to attend class, rather than putting your money and grade at risk should you miss a third exam.
- b. All tests begin promptly at the beginning of class. ***If you arrive late to an exam, you may not be permitted to take the test.***
- c. **Lowest two** grades of 6 quizzes are dropped. ***No make-up quizzes as the lowest two grades are dropped.***
- d. Each of the 4 quizzes and the final counts 16% (80% total) towards the final average.
- e. Final quiz is neither optional nor cumulative, and cannot be dropped. The final exam begins at the time published in the course schedule (also see below). If you fail to take the final exam, you fail the course.
- f. **Before turning in your weekly lab write-up, make and keep copies of all papers.** If you have any concerns about your graded papers, please make an appointment with Prof. Brande to discuss your concerns.
- g. You must turn in your complete lab write-up on ***new and original pages*** for grading. If you do not own a mini-stapler, purchase one right now. ***Multiple sheet labs must be stapled for credit. Any write-up that is unstapled, and which does not identify your name and section number, will not receive credit.*** Each satisfactory lab receives 100% credit if
 - i) all questions are attempted with relevant answers,
 - ii) web exercise write-up (if assigned) is complete and stapled to lab write-up, and
 - iii) lab is stapled and properly identified with your name and your section number,
 - iv) lab is turned into the Chemistry office during the week of, and no later than, the day of the assigned deadline (labs may be done earlier, but cannot be turned in early for credit – turn in labs only during the week it is due).50% or less partial credit for less than satisfactory work. Unsatisfactory completion receives no credit (0%). Web exercise, if assigned, counts 1/3rd of the weekly lab write-up credit.
- h. ***Answer key will be posted weekly on the course website. See the handout sheet for instructions for accessing the website.***
- i. ***Late labs will not be accepted for grading, as the answer key will be posted on-line after on-time labs are marked and returned.***
- j. ***You are responsible for downloading and reviewing the answer key and correcting your own errors.*** Please see Prof. Brande if you need help understanding the answer key.
- g. Approximate grading scale (final average is rounded to nearest whole number)
A: 100-90 % B: 89-80 C: 79-70 D: 69-60 F: below 60 %

If the final class average is below 75, the final class average is scaled up to 75. The bonus required to bring the class average up to 75 (if necessary) may or may not increase the letter grade for an individual student.

In the event of severe weather or other conditions that may make it hazardous for you to attend class, you may wish to know whether a class is canceled. WBHM, 90.3 FM, is the official voice of UAB, and will announce any closing of UAB. You may wish to listen to, or call, WBHM for any official information. No class in this course will be held during an official closing. However, if you miss a class because of weather (or any other reason) and the class

has not been officially canceled, your absence will be governed by the procedures specified above (a through g).

Some abilities required for this course:

Exercises in this course require the following: 1) ability to read, write, interpret, and work word problems in the English language, 2) ability to work math problems mostly at the pre-college level, 3) ability to distinguish colors. If you have significant difficulty with any of the language or math expectations, you should withdraw from this class and only return after you strengthen these required skills in other courses.

Weekly grading of homework:

Hand in your original, completed and stapled write-up by Thursday, 1:00 PM of the week each lab is due (see calendar below) to one of the Chemistry Department staff members and ask them to put it in Prof. Brande's mail box. You may pick up your graded labs from the wall box outside Prof. Brande's office in the chemistry building, CHM 289, by late Thursday afternoon. Retrieve the posted answer key after 2:00 PM from the class WebCT site, review your answers, make corrections, ask Prof. Brande questions, and review for the weekly quiz.

Bring a calculator, a 6" to 12" plastic ruler (English/Metric), and a pencil (with eraser) to each lab. You will also need these materials for the exams. Note: You will not be permitted to borrow calculators or rulers during exams. Do not forget your required tools!

Beginning lab schedule; tentative; final assignments made in class and posted on WebCT site

LAB	Date	Topic	Exam Schedule	Answer all questions on these pages	Time lab is due	Date lab is due
1	6-Jan	Introduction				
2	13-Jan	Minerals		Mineral identification chart; web exercise	1:00 PM	15-Jan
3	20-Jan	Soil		Lab write-up + Web exercise	1:00 PM	22-Jan
4	27-Jan	Sedimentary rocks	Quiz 1 (Labs 2,3)	Lab write-up + Web exercise	1:00 PM	29-Jan
5	3-Feb	Sedimentary rock textures		Lab write-up + Web exercise	1:00 PM	5-Feb
6	10-Feb	Invertebrate fossils I	Quiz 2 (Labs 4,5)	Lab write-up + Web exercise	1:00 PM	12-Feb
7	17-Feb	Invertebrate fossils II		Lab write-up + Web exercise	1:00 PM	19-Feb
8	24-Feb	Stratigraphy & age-dating principles	Quiz 3 (Labs 6,7)	Lab write-up + Web exercise	1:00 PM	26-Feb
9	2-Mar	Correlation		Lab write-up + Web exercise	1:00 PM	4-Mar
10	9-Mar	Evolution and the Origin of Flight (on the web)	Quiz 4 (Labs 8,9)	Lab write-up + Web exercise	1:00 PM	11-Mar
11	16-Mar	Plate Tectonics on the Web		Web exercise	1:00 PM	18-Mar
	23-Mar	Spring break - No lab			1:00 PM	25-Mar
12	30-Mar	Fossils on the Web - no meeting	Quiz 5 (Labs 10,11)	Web exercise		
13	6-Apr	Invertebrate fossils III - Paleocology		Lab write-up + Web exercise	1:00 PM	8-Apr
14	13-Apr	Historical Geology on the Moon and Mars	Quiz 6 (Labs 12,13)	Lab write-up + Web exercise	1:00 PM	15-Apr
15	20-Apr		FINAL QUIZ (Lab 14)			