

# GEOL-4337 Plate Tectonics

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Fall 2017  
MWF 11:00-11:50 AM  
Lee Drain Building, Room 318

**Instructor:** Dr. Gary Acton

**Office:** Lee Drain Building, Room 322

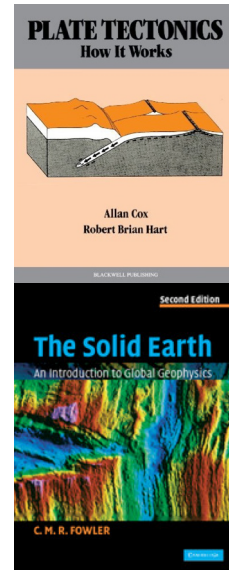
**Phone:** (936) 294-1454

**Email:** [gdacton@shsu.edu](mailto:gdacton@shsu.edu)

**Office Hours:** MW 1:30-3:00 PM; Alternately, drop by my office when the door is open or make an appointment.

**No Required Text Book:** *Electronic reading material will be provided on Blackboard*

**Some good resources if you want a book:** *Plate Tectonics: How it Works* (1986, A. Cox & R. B. Hart) and *The Solid Earth: An Introduction to Global Geophysics* (2005, C. M. R. Fowler).



**Course Description for GEOL-4337:** An introduction to the movement of lithospheric plates. Topics to be covered include earthquakes, volcanism, seismic tomography, the evolution of continents and ocean basins, and the influence of Earth's interior on these processes. Lecture only. Writing enhanced. Prerequisites: GEOL-1403, with GEOL-1404 highly recommended.

## Objectives:

- Understand the theory of plate tectonics and how it explains the evolution of Earth's surface; the formation of ocean basins, the age of the seafloor, and lineated marine magnetic anomalies; the distribution of earthquakes, volcanoes, mountains, trenches, rifts, flora and fauna, and geologic units; and the motions of continents.
- Examine the primary geological and geophysical observations and the methods upon which the theory of plate tectonics was founded, and learn how to evaluate these observations and apply the methods both qualitatively and quantitatively.
- Investigate Earth's internal processes and structures and how these are related to plate tectonics.
- Learn how to determine the velocity of plate motions, reconstruct the past positions of the plates, and determine the stability of plate boundaries.
- Develop computational and problem-solving skills.
- Enhance your skills in extracting information from scientific publications.
- Hone your writing, editing, and presentation skills. ***This is an enhanced writing course!***

**Grading:**

- The standard SHSU grading scale will apply as discussed at <http://www.shsu.edu/gradcat/scholasticrequirements.html>.
- For this course, letter grades will be associated with the following percentiles:  $\geq 90\%$  = A, 89-80% = B, 79-70% = C, 69-60% = D,  $< 60\%$  = F.
- Grades will be curved as necessary.
- Extra credit assignments will be done at the instructor's discretion.
- Grades in this course will be based on the following:

Item	% of Grade	Date
• Midterm Exam #1	10%	Monday 11 Sept
• Midterm Exam #2	10%	Friday 13 Oct
• Homework Assignments & Quizzes	25%	As assigned
• Group Research Paper	10%	To be assigned
• Your Contribution to Group Paper	5%	To be assigned
• Group Research Presentations	10%	To be assigned
• Your Contribution to Presentations	5%	To be assigned
• Class Attendance & Participation	10%	All semester
• Final Exam (comprehensive)	15%	6 Dec, noon-2 pm

**Make-up Exams, Assignments, and Late Work:**

- Make-up exams and assignments will be allowed for documented emergencies only (e.g., severe illness, death of immediate family, etc.). To be eligible to take a make-up for any work you missed, you must notify me **before** the missed exam and present sufficient proof to document your emergency. It is your responsibility to schedule a make-up exam or assignment, which must be completed within one week of the missed exam or assignment. ***There will be no make-up exam for the final.***
- Homework handed in late will have the following amount deducted:
  - 20% if handed in within two work days of the stated deadline.
    - If the stated deadline is the beginning of class, then handing the homework in at the end of that class will result in a 20% deduction.
  - 50% if handed in later than two work days but within a week of the deadline.
  - 100% (no credit) if later than a week after the deadline.

**Class Attendance:** Regular and punctual class attendance is expected. If you miss a lecture, it is your responsibility to obtain the material presented in the lecture from a fellow student. Attendance will be computed as follows:

- The total possible points is 100; Total number of lectures  $\approx 40$
- 100 points for arriving on time and missing no more than 3 lectures.
- If you miss more than 3 lectures, 10 points (1% of your total grade) will be deducted for each additional lecture missed. Hence, you will lose 100 points and 10% of your total grade if you miss 13 or more lectures.
- Three tardies (arriving late for class), will be equivalent to missing one lecture.

**Class Participation:** Full credit for class participation can be attained by paying attention, contributing to the class by answering questions asked by the instructor, raising thoughtful questions particularly when you do not understand something, joining in class discussions, and completing in-class assignments or pop-quizzes. You will lose credit if you are disruptive or cause distractions, such as by texting, emailing, or using social networks during class.

**Special Request:** Please silence and put away your cell phones at the beginning of each class and do not retrieve them or use them until the class has ended.

**SHSU Guidelines and Policies:** This course follows SHSU guidelines and policies. These are listed for [Academic Honesty](#), [Student Absences on Religious Holy Days](#), [Students with Disabilities Act](#), and [Visitors in the Classroom](#) on the SHSU web site at <http://www.shsu.edu/syllabus/>.

**Class Schedule:** The schedule of topics with reading assignments is provided separately and is subject to change. It will be on Blackboard and I will send a Blackboard notification each time it is updated. Likewise, details on research paper topics and guidelines for the paper and presentation will be provided separately.

**The Final Exam date is based on the list at:**

<http://www.shsu.edu/dept/registrar/calendars/final-exam-schedules.html>

**GEOL-4337: Wednesday December 6<sup>th</sup> at Noon – 2 pm**