Course meets:
Monday 2:00 - 3:50, Wednesday 2:00 - 2:50 (+/-) in Gould-Simpson Room 203

Instructor:
Clem Chase
Office: 513 Gould-Simpson
Phone number: 621-2417; e-mail address: chase@geo.arizona.edu
Office Hours: Thursday 11:00 – 12:30
Website: http://www.geo.arizona.edu/geo5xx/geo5chase/geo540.084

Text: (This book is a keeper for any quantitative geoscientist.)
Turcotte & Schubert, Geodynamics, 2nd edition, Wiley & Sons

Course intent:
In this course, we apply quantitative methods to geologically motivated problems. Most of the problems we examine deal with continental tectonics, isostasy and flexure, topography, and mechanics of the lithosphere and their interaction with surficial processes, and other matters arising. As participants, you will acquire a toolbox of geophysical and geological techniques that can be used to address large-scale geological and tectonic questions, and the physical insight to use them correctly. We will practice using those tools on interesting problems through readings in the textbooks and the literature, a number of homework problems, and by applying the techniques to new problems and areas, some of your choice. We will also use them to analyze concepts from the published literature.

Course format:
The course is conducted as a mixed lecture/seminar format. In parallel with the lectures, there are relevant readings and problem sets from the texts and the literature. There are various ways you will be asked to give presentations and otherwise speak in the class. You may be given written feedback on your class presentations. You will write a term paper incorporating some form of original quantitative work on your part, on a topic selected by you and approved by me. You can use a range of existing software for this project, develop new software, or use analytical techniques where appropriate. At the end of the semester, you will present the results of your project to the class. There are no examinations in the class, unless by urgent demand from the students. This demand never seems to have developed.

Prerequisites:
Phys 241, Math 254, Geos 304. What this means is that you need some background in introductory-level physics and calculus, and a bit of geology. A good geological background is certainly helpful, but not mandatory.

Grade basis:
Regular basis - A B C D E
40% term paper. See term paper schedule. Requirements differ for undergraduate and graduate students.
40% class participation: both presentations and free discussion.
20% problem sets.
Schedule, term paper, and readings:
See [http://www.geo.arizona.edu/geo5xx/geo5chase/geo540.094](http://www.geo.arizona.edu/geo5xx/geo5chase/geo540.094) for more details

Absences:
Presence in the class and participation in discussions are expected. If you have scheduled an absence, please let me know in advance, and if you are involved in a work-group, please warn your group as well. All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion. Absences pre-approved by the UA Dean of Students (or Dean’s designee) will be honored.

Classroom behavior:
Please don’t use pagers or cell phones in class. That includes texting.

Plagiarism and Academic Integrity:
By now you all know what that means: your work, your thought, and your personal growth must be your own. If you have any doubts, check with [http://deanofstudents.arizona.edu/codeofacademicintegrity/](http://deanofstudents.arizona.edu/codeofacademicintegrity/). If you are working in groups, likely this year, and want to know what the boundaries should be, ask me in advance.

Threatening behavior:
Not acceptable, one strike and you’re out. Painful history led to this policy: [http://policy.web.arizona.edu/~policy/threatening.pdf](http://policy.web.arizona.edu/~policy/threatening.pdf)

Offensive content:
Highly unlikely. Geophysics?

Disability Resource Center:
Students who are registered with the Disability Resource Center must submit appropriate documentation to the instructor (that’s me) if they are requesting reasonable accommodations: [http://drc.arizona.edu/teach/webroster.html](http://drc.arizona.edu/teach/webroster.html). If you’re not registered with DRC and feel it would be appropriate, go to [http://drc.arizona.edu/learn/index.html](http://drc.arizona.edu/learn/index.html) or

Optional statement:
Be so warned: “A statement is permissible indicating that the information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.”