GEO 6950 Reviews of Earth Science
and
Geology and Geophysics Masters Comprehensive Exam
Fall Semester, 2011

Objectives

The sequence of the class Geo 6950 “Reviews in Earth Science” and the comprehensive exam have the following joint objectives:
(a) to bring students of disparate backgrounds in the geosciences and related subjects to a common, high level of understanding in selected, general topics in Earth Science,
(b) to introduce new students, in their first semester at the University, to many faculty in the department,
(c) to promote cooperative learning, working in teams, and a sense of community among the incoming cohort of graduate students,
(d) to stress the importance of integration and synthesis of information from different areas of Earth Science (geology, geophysics, geochemistry, hydrology, paleontology)
(e) to build and sharpen communication (presentation and writing) skills.

Graduate seminar - "Reviews of Earth Science"

A one-semester graduate seminar called "Reviews of Earth Science" is offered in the Fall semester of each year as a compulsory program for all new masters graduate students and optional for doctoral students.

Over the course of the semester, the graduate seminar addresses pre announced themes or topics about which all graduate students should be knowledgeable. Each theme should include, where possible, multiple aspects of geology and geophysics; specific emphasis should be placed on integrating knowledge from multiple sub disciplines in the geosciences.

Six topics will be addressed in the Fall semester. Two or three week periods will be devoted to a single topic. The first week for each topic will be used to introduce the topic and assign mini-topics to be investigated in small groups. In the second (and sometimes third) week, each group will present results in the typical Earth Science 10 minute oral presentation format, and the class as a whole will discuss findings and engage in a synthesis of the information presented for the topic. Emphasis is on student rather than faculty activity.

Selected faculty will attend sessions and provide suggestions about the completeness and balance of the data and analysis. They may speak about their own research as it relates to the Reviews topic. They are available as resource persons to comment on how problems have been solved in the past and on the interrelationships between subjects.

Improvement of communication skills is a specific objective of the seminar. Active participation in the seminar is encouraged, and oral presentations will be evaluated and critiqued. Short written assignments such as a GSA/AGU/AAPG/SEG type abstract for topics may be included as part of the seminar. All students will have opportunities to build skills in the following: preparation of an abstract, preparation of an effective illustration, oral presentation, Powerpoint presentation, web presentation.
Comprehensive exam

The seminar "Reviews in Earth Science" will be followed by a comprehensive examination covering broad themes in the Earth Sciences, and emphasizing the synthesis and integration of knowledge. The comprehensive exam shall be taken by all new masters candidates graduate students early in the Spring semester of their first, full year at the University.

The comprehensive exam consists of six questions, one for each broad topic covered in the preceding graduate seminar “Reviews of Earth Science”. The questions will be broad in nature, open-ended in style, and designed to reward students who are able both to integrate material from multiple sub disciplines within geology and geophysics yet advance detailed arguments from a specific perspective. Specialization, which is both necessary and important in our disciplines, is thus rewarded when placed in context of general understanding of a problem or process.

High standing in the examination may be used as a criteria for awards and as one of several indices to merit advancing toward a Ph.D. degree. Very low overall standing, in extreme cases, may lead to redirection out of the graduate program. Prior to dismissal, however, and before the start of classes for the Autumn semester, students will be given an opportunity to retake a comprehensive examination.

A note on teaching philosophy

GEO 6950 "Reviews of Earth Science" can be a very rewarding class. It provides both a "big picture capstone" for recent Earth Science majors, and a good introduction to graduate school. The course is taught with multiple objectives listed above. To these course objectives I would add the following:

(g) to extend your qualitative familiarity to a quantitative understanding of concepts,
(h) to learn how to solve problems, estimate order of magnitude of quantities and effects, and to discriminate between strong and weak arguments,
(i) to learn to enjoy thinking critically, and to take pride in constructing a tight physical argument.

Finally, I approach our subject with curiosity and enthusiasm. I invite you to do the same.

David S. Chapman,
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and Dean Emeritus of The Graduate School

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See also University regulations:
http://www.sa.utah.edu/regist/calendar/datesDeadlines/Fall2011.htm

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.