

GLY4400 Structural Geology and Tectonics
Syllabus Spring 2015

MWF Lecture 12:50 202 Williamson Hall

Textbooks:

EARTH STRUCTURE: AN INTRODUCTION TO STRUCTURAL GEOLOGY AND TECTONICS

Author: Van der Pluijm & Marshak

2ND edition, ISBN: Publisher: W.W. NORTON & CO.

BASIC METHODS OF STRUCTURAL GEOLOGY Author: STEPHEN MARSHAK

ISBN: 0131439820 Publisher: PRENTICE HALL

Instructor: Dr. Jim Vogl
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Materials, including this syllabus, lecture/reading schedule, & assignments, will be available on E-learning in Canvas

Course objectives

Introduce you to a wide variety of structures and rock fabrics formed at range of scales, temperature/depth conditions, and tectonic settings

Provide a qualitative and quantitative understanding of the forces and stresses responsible for the development of geologic structures

Provide the background necessary for the kinematic interpretation of structures and strain observed in rocks

Expand your knowledge gained about structures, strain, and stress to a larger scale and place it in framework of a range of plate tectonic settings

Topics to be covered are grouped under the following main headings:

- Stress
- Strain
- Rheology
- Faulting & brittle deformation
- Ductile-plastic strain
- Tectonics
- Deformation patterns in contractional, extensional, & strike-slip settings

Fieldtrip (required)

Five-day trip to the Appalachians

Tentative dates: April 2-6 (Thursday-Monday)

Assignment from the fieldtrip will be included in Lab grade

Exams

Will be held during class time and will consist of a variety of different types of questions, ranging from multiple choice, fill in the blank, short answer to calculations and half-page explanations.

There will be three exams during the semester and a cumulative final exam during finals week

Material for exam will be covered in lecture. In some instances, however, I may assign specific reading topics for which you will be responsible. Any such instances will be clearly communicated.

Course grading – tentative grade breakdown

45% Three in-class exams during term
Lowest score 10%, other two exams each 17.5%

20% Final Exam

30-35% Lab assignments

0-5% Quizzes