

Structural Geology I

Earth Sciences 204

Section: D100

Term: 2010 Spring

Instructor: Dr. Dan Gibson

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Discussion Topics: This course introduces the fundamental concepts and principles of structural geology with a emphasis on practical applications. Lectures will cover the nature of structural geology; which includes the description and analysis of deformation and deformation processes at scales ranging from minerals to mountain belts. Topics will cover major types of structures and fabrics (folds, faults, joints, cleavage, foliation, etc.), dynamic analysis (stress and strain), kinematic analysis of deformation, and an introduction to concepts of plate tectonics. Laboratory exercises will emphasize practical techniques applicable to the field analysis of geologic structures, including interpretation of geologic maps, stereographic projection and analysis of structural data, and cross section construction and interpretation.

Grading: Lecture Midterms: 20%

Final Exam: 35%

Laboratory Exercises: 20%

Laboratory Exam: 25%

Required Texts: Structural Geology of Rocks and Regions. Davis, G.H. and Reynolds, S. 2nd Edition, 1996, John and Wiley and Sons. ISBN 978-0-471-52621-6

Recommended Texts: Basic Methods of Structural Geology, Marshak/Mitra, G. 1998, G.Prentice Hall. 978-0-13-065178-5

Materials/Supplies: Mechanical pencil, colored pencils (hard lead), good eraser, ruler, tracing paper, protractor, plastic triangle, calculator.

Prerequisite/Corequisite: Prerequisite: EASC 101, EASC 102, PHYS 120

Notes: The laboratory exercises will include a Saturday or Sunday field exercise late in the term. There will be lectures and a laboratory exercise the first week of classes. Be aware that during the field trip there will be hiking, hiking close to cliffs and crossing roads with busy traffic. Appropriate clothing and footwear should be worn. Further details regarding safety, food, housing and field supplies will be discussed prior to the field trip.

There will be a supplemental fee of \$30.00.

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