

EASC 309 - 3 Global Tectonics

Section: D100 - 2011 Fall

Instructor: Kevin Gillen

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Description Topic:

General: The Plate Tectonics paradigm is the fundamental basis for all aspects of our current understanding of the Earth Sciences. We will examine the fundamentals of plate tectonics, mechanics of plate motions, characteristics of major plate boundaries, neotectonics, formation of orogenic belts, tectonic controls on major sedimentary basins, tectonic controls on the formation and location of all major economic deposits (metal, hydrocarbon and industrial), the evolution of tectonic processes over time, tectonic controls on climate change and the evolution of life, and many other aspects of how plate tectonics drives our world and how the planet drives plate tectonics. Student seminars will provide in depth information on specific topics. Labs will include simple exercises in plate motions, paleomagnetism, structural geology and use of G.I.S. systems to study tectonic systems.

Grading:

Midterm Exams: 2 at 12.5% each

Laboratory Exercises/Assignments: 30%

Seminar Presentation: 10%

Term Paper: 10%

Final Exam: 25%

Required Text:

Edition 3 of "Global Tectonics" by Kearey, P., Klepeis, K.A. and Vine, F.J.; Blackwell Publishing, 2008. ISBN 9781405107778

Recommended Text:

Geological dictionary.

Material List:

None.

Prerequisite/Corequisite:

EASC 201, 204, 205, 206 and 207.

Notes:

There will be lectures and a laboratory exercise during the first week of classes - show up!