

Survey
Course

GEOLOGY 299 — EARTH SYSTEM SCIENCE
FALL 1996

Course Outline — Sept. 9, 1996

Lectures: 12:00-1:00 pm Mon, Wed., Fri., CB108

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Text: Our changing planet: an introduction to earth system science and global environmental change, 1995, by F.T. Mackenzie and J.A. Mackenzie, Prentice Hall, Upper Saddle River, New Jersey, 387 p.

Catalog Description

A non-technical, interdisciplinary course for majors or non-majors. The goal is to introduce the major processes affecting global change in an interdisciplinary context. The course will include a brief introduction to Earth history, the evolution of life on Earth, and the geologic record of past climate and environmental changes. The main emphasis of the course will be the interdependence of processes in the solid Earth, atmosphere, hydrosphere, and biosphere. Humans' role in influencing the course of global change will also be critically examined, along with various societal, political, and economic aspects of environmental change. 3 credits. Prerequisites: none.

Tentative Schedule

Part I. — The Natural Systems Week 1-11 (Sept. 6 - Nov. 15)

<u>Week</u>	<u>Topic</u>	<u>Reading</u>
1-3	Lithosphere	Intro., Ch. 1-2
4-5	Atmosphere	Ch. 3
5-6	Hydrosphere	Ch. 3
	----- Field trip Sat. Oct. 5 (tentative) -----	
7-8	Biosphere (Ecosphere)	Ch. 4
	----- Mid-term exam Fri Oct. 18 -----	
9-10	Biogeochemical cycles	Ch. 5

Part II. — Human Dimensions Week 12-15 (Nov. 18 - Dec. 13)

11-12	Population, resources	Ch. 6
13	Interaction with biosphere	Ch. 7
14	Interaction with lithosphere and hydrosphere	Ch. 8
15	Interaction with atmosphere	Ch. 9-10
15	Global perspectives	Ch. 11
16	----- Final exam week -----	

Evaluation of Performance

Problem sets (approximately six)	40%
Mid-term exam	25%
Final exam	35%