

EENS 634

Dr. Stephen A. Nelson

snelson@tulane.edu**The Earth****Fall Semester 2006**

Rm 302B Dinwiddie

Office Hours MWF 1:00 - 4:00 PM

I. COURSE GOALS & OBJECTIVES

This course is designed to give the student a fundamental understanding of the Earth, its formation, structure, composition, age, and evolution to its present state. Because much of this information can only be derived from observations we can make at the surface of the earth, we look at how these observations are made and how they constrain our models of the Earth.

II. TEXTBOOKS

The primary text for the course is "The Inaccessible Earth" by Brown and Mussett. This book can be purchased in the Departmental Office. Additional readings and supplementary material will be supplied as handouts in class as needed.

III. COURSE GRADING

Your grade in this course will be determined on a point basis with the distribution of points as follows:

Homework	30%
First Midterm Exam	20%
Second Midterm Exam	20%
Final Exam	30%

IV. WEB PAGE

Some course material and announcements from the instructor can be found at <http://www.tulane.edu/~sanelson/eens634/>. Check the page often as contents will change frequently

V. TENTATIVE SCHEDULE OF LECTURES & LABS

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
Aug. 31	Gravity and the Shape of the Earth	p. 25-30
Sept. 5	Isostasy and Gravity Anomalies Gravity Homework Assigned	
Sept. 7	Seismology - Elastic Waves	p. 11-16
Sept. 12	Seismology - The Structure of the Earth's Interior	p. 16-19
Sept. 14	Free Oscillations of the Earth Seismology Homework Assigned	p. 20 -24

Sept. 19	Density Distribution in the Earth	p. 25-42
Sept. 21	Density Distribution in the Earth Density Distribution Homework Assigned	p. 25-42
Sept. 26	Isotopes and the Age of the Earth	p. 213-215
Sept. 28	MIDTERM EXAM 1	
Oct. 3	Isotopes and the Age of the Earth Isotopes Homework Assigned	p. 213-215
Oct. 5	Formation of the Solar System	p. 43-57
Oct. 10	Meteorites, Nucleosynthesis, and Stellar Evolution	p. 57-72
Oct. 12	Accretion and Differentiation of the Earth Accretion Homework Assigned	p. 73-93
Oct. 17	Accretion and Differentiation of the Earth	p. 73-93
Oct. 19	The Earth's Core	p. 94-107
Oct. 24	The Earth's Magnetic Field	p. 628-636
Oct. 26	The Earth's Magnetic Field Magnetism Homework Assigned	p. 628-636
Oct. 31	MIDTERM EXAM II	
Nov. 2	The Structure and Composition of the Earth's Mantle	p. 108-133
Nov. 7	Evolution of the Earth's Mantle	
Nov. 9	Evolution of the Earth's Mantle	
Nov. 14	Heat Flow Thermodynamic Homework Assigned	
Nov. 16	Heat Flow	p. 143-150
Nov. 21	Origin of the Earth's Crust Heat Flow Homework Assigned	p. 160-204
Nov. 23	HOLIDAY - THANKSGIVING	
Nov. 28	Plate Tectonics - History of the Theory	
Nov. 30	Plate Tectonics - Theory Plate Tectonics Homework Assigned	
Dec. 5	Plate Tectonics - The driving mechanisms	
Dec. 7	Evolution of the Earth's Atmosphere and Oceans	
Dec. 17	Final Examination 8:00 AM to 12:00 PM	

Click [here](#) for a PDF version of the syllabus

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