

**GEO 384R and 365N (27579) Data Processing;  
Geophysical Time Series Analysis  
Spring 2013**

**Instructor: Clark R. Wilson**

**Meeting Times: Lectures in Room TBD; M 1-3**

**Wednesday meetings will be in the computer lab, JGB 2.134**

**Office Hours: M-Th 9-10 Geo 4.220C**

**Course notes: about \$15 at the Texas Union Copy Center, located in Welch Hall**

**Blackboard is used to post homework and other documents**

This is an introduction to geophysical data analysis methods, with a focus on time series, for first year graduate students. We use MATLAB in many demonstrations and in homework, and students are expected to be familiar with it use, as a pre-requisite. The main topics covered in the lectures are: Review of data processing and linear system concepts; Fourier Transforms of continuous functions; Linear digital filter analysis, design, and applications; Frequency domain methods for filtering, and spectrum estimation and related extensions to 2 dimensions.

There will be some review of material covered in GEO 325K / 383D taught in the Fall semester, but the main emphasis is to build upon topics found in this course, which is a pre-requisite for undergraduates (enrolled under the GEO 365N number). Graduate students who have not had GEO 325K/383D should have taken courses in mathematics at least to the level of Math 427L, and have familiarity with linear algebra, computer programming, and complex variables. Topics from 325K/383D are in the first 7 sections of the course notes. These sections and will serve as a reference for students who did not take that course in reading sections 8, 9, and 10. In addition to course notes, there are many helpful websites that cover related topics in time series analysis.

Course work will include homework, and exams. Approximate grade distribution will be: Exams (2 in-class and perhaps a final) 60%, Homework 40%.

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disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 471-6259