

GEOL 5315 ADVANCED SEISMIC METHODS

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TR 1030-1150
Geology room 302

Office hours: by appointment

TEXT: There is no official textbook for the class. If you can obtain a copy of *SEG Investigations in Geophysics no. 10: Seismic Data Analysis, vol. 1, by Oz Yilmaz*, do so. I will take a lot of material from that book. The other book I anticipate using a lot is: *Reflection Seismology: A Tool for Energy Resource Exploration by Kenneth H. Waters*. Neither book is readily available to students at a reasonable price so I will not require either one.

GOALS: The Primary purpose of this course is to give students sufficient understanding of the basic principles used in Reflection Seismology so that they can advance on their own well beyond what is covered in this class. We will focus on applications for oil and gas prospecting but the applications can also be applied to shallow engineering, environmental, and mining applications as well as to deep studies of the earth's interior.

FORMAT: This is a combination of a lecture, lab, and seminar course which basically means that students will be expected to be highly motivated and to seek out information on their own as well as attend classes and participate. Assuming we have a license for Promax, we will spend significant time in the computer lab processing data to a much greater extent than we did in the introductory Seismic Methods course. Students will be expected to become proficient at using the help manuals to figure out how to do things. There will also be regular assignments, student presentations, and class discussions of methods.

GRADING: Grading will be based on a combination of assignments, presentations, possible papers, processing, and classroom participation including attendance. These various components will be weighed roughly equally and the final grade will be based on an overall assessment of how well the student understands the material covered during the semester. A grade of "A" will require the student to demonstrate that they can develop solutions to problems in seismic data collection and processing on their own. A grade of "B" will require the student to demonstrate a thorough comprehension of the materials covered in class. Finally anything less than an A or B will indicate the student did not comprehend the material covered in the class and I hope that does not happen. Please ask questions and request clarification when you are confused or when you think the instructor is confused.