**Professor Patricia Kenyon**

**ENVIRONMENTAL GEOPHYSICS - 32446 - EES 79903-0**

Physical measurements at or near the earth’s surface can be used to study subsurface structure. This course covers the application of surface surveying methods to environmental and engineering problems. Surveys of this type are frequently used for such applications as finding buried waste, tracing contaminant plumes of groundwater, and determining depth to bedrock. Classes will include theory and hands-on work with seismic, electrical, electromagnetic, and magnetic instruments and techniques. After an introduction to the basic principles of surveying, the class will carry out and analyze one field survey of each type, including doing computer analysis of the results. Students are expected to have had some calculus and an introductory course sequence in physics. Grades will be based 75% on homework and field reports and 25% on a final exam.

After completing this course, students should be able to:

1. Understand the principles underlying the geophysical surveying methods most commonly used in environmental applications.

2. Design a simple survey to answer a question about the shallow subsurface.

3. Correctly set up and operate the equipment covered.

4. Work with a group to take geophysical data.

5. Use simple computer programs to analyze geophysical data.

6. Write the report of a geophysical investigation.