

GLY 5457: Environmental Geophysics

- 2) Electrical methods: theoretical and practical basis of electrical methods (e.g. resistivity, self-potential, and induced polarization)
- 3) Electromagnetic methods: theoretical and practical basis of electromagnetic methods (e.g. ground penetrating radar and terrain conductivity)
- 4) Seismology: theoretical basis of seismic methods with emphasis on environmental applications (e.g. refraction and reflection methods)
- 5) Potential field methods: theoretical basis of potential methods with emphasis on environmental applications (e.g. gravimetric and geomagnetic methods)

Suggested activities:

A short field trip at a local site will serve as the basis for developing a class project that will include: 1) data collection; 2) data processing; 3) data preparation and discussion; 4) data presentation (both oral and written). The project intends to give students a practical overview of the entire routine involved in a geophysical field based study from data acquisition to final data presentation while encouraging critical thinking.

Assessment procedure:

Exams:	Mid-term:	35%
	Final:	35%
Field project (write up and presentation):		25%
Quizzes:		5%

Grading scheme:

A	93-100%
A-	90-92.9%
B+	87-89.9%
B	83-86.9%
B-	80-82.9%
C+	77-79.9%
C	70-76.9%
D	63-69.9%
F	63% or lower

Suggested bibliography:

1. *An Introduction to Applied and Environmental Geophysics*, by J. M. Reynolds, Wiley and Sons, New York, 1997, 726 pp.
2. *Environmental and Engineering Geophysics*, by P. V. Sharma, Cambridge University Press, Cambridge, 1997, 475 pp.

3. *hydrogeophysics*, by Y. Rubin and S. Hubbard, Water and Science Technology