

Applied Geophysics

Earth Sciences 307

Section: D100

Term: 2012 Spring

Instructor: Dr. Andrew Calvert

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Discussion Topics: General: REQUIREMENT DESIGNATION: Q

Application of geophysical methods to the study of the subsurface. This course complements the material presented in EASC 207 "Introduction to Geophysics", which covered the simplest of the methods of applied geophysics. In EASC 307, more advanced geophysical survey methods are presented, including ground penetrating radar, time and frequency domain electromagnetic techniques, and seismic reflection methods. The additional complexity of these methods over those of EASC 207 arises from both the more complex relation between the physical measurements and the subsurface properties and the manipulation of the recorded data that is required. An introduction to the use of geophysical methods in the borehole environment, which relies on much of the material from EASC 207, is also presented. The course text is the same as used in EASC 207.

Course Topics:

Representation of the subsurface by a convolutional model

Ground Penetrating Radar

Electromagnetic Surveying

Seismic reflection methods

Borehole geophysics

Grading: 1. Midterm examination 15%

2. Laboratory/Assignments 35%

3. Final examination 50%

Required Texts: Reynolds, J.M., An Introduction to Applied and Environmental Geophysics, Wiley. ISBN 978-0-471-95555-9

Recommended Texts: None.

Materials/Supplies: None.

Prerequisite/Corequisite: EASC 207 or permission of instructor.

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Notes:

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.