GEOPHYSICS (GPH)

GPH 501. RESEARCH. (1-16 Credits)
Original research work that will not be part of the data used in a thesis. Graded P/N.
This course is repeatable for 24 credits.

GPH 503. THESIS. (1-16 Credits)
Thesis research and writing.
This course is repeatable for 999 credits.

GPH 505. READING AND CONFERENCE. (1-16 Credits)
Independent reading and library research on specialized topics in geophysics, guided by discussions with supervising faculty. A written report may be required.
This course is repeatable for 16 credits.

GPH 507. SEMINAR. (1-16 Credits)
This course is repeatable for 48 credits.

GPH 601. RESEARCH. (1-16 Credits)
Original research work that will not be part of the data used in a thesis. Graded P/N.
This course is repeatable for 36 credits.

GPH 603. THESIS. (1-16 Credits)
Thesis research and writing.
This course is repeatable for 999 credits.

GPH 605. READING AND CONFERENCE. (1-16 Credits)
Independent reading and library research on specialized topics in geophysics, guided by discussions with supervising faculty. A written report may be required.
This course is repeatable for 16 credits.

GPH 607. SEMINAR. (1-16 Credits)
This course is repeatable for 48 credits.

GPH 630. ELEMENTS OF SEISMOLOGY. (4 Credits)
Survey of basic concepts in global seismology: world seismicity; elastic structure of the earth; seismic wave paths in the earth; locating earthquakes; earthquake focal mechanisms, magnitudes, stress drop, energy; stress and strain, elasticity, wave equation, plane waves in homogeneous and layered media, surface waves, free oscillations; ray theory; seismometry; earthquake prediction. Laboratory exercises include interpretation and analysis of seismograms from global seismographic networks.

GPH 632. CRUSTAL SEISMOLOGY. (3 Credits)
Structure of the earth’s crust and upper mantle from seismic reflection and large offset (refraction, wide-angle reflection) data. Methods of data collection, data processing theory and practice, modeling and interpretation techniques, correlation of seismic results with laboratory measurements of rock properties, and regional case studies.
Prerequisites: GPH 630 with C or better

GPH 640. GEODESY. (4 Credits)
Physical and observational geodesy; including the Earth’s gravity field and potential and determination of the Earth’s geoid. Interpretation of geoid, geoid anomalies, and isostatic compensation. Gravity, point-position and remote sensing geodetic measurement techniques, including GPS, InSAR, VLBI, leveling, triangulation/trilateration, and low-Earth orbit gravity satellite missions are covered as are geodetic reference frames. Offered alternate years.