

From: the EOS Grad Committee  
To: EOS faculty  
Date: February 8, 2010

Breadth Requirement Courses (two courses for MS, three for PhD, from two and three of the emphasis areas, respectively) to be adopted for students starting in fall, 2010.

**Solid Earth:** GEOL 725 or 735

**Ocean and Hydrologic Sciences:** GEOL/MSCI 711 or 781 or 782 or GEOL 770

**Data Analysis:** GEOL 755 or 758 or 783

The grad director will work with the master scheduler to assure that at least one course from two of the three groups is taught each year, and at least one course from each group is taught every two years.

Course Descriptions.

GEOL 725 – Internal Earth Processes (4) Structure and dynamics of the earth's interior and the lithospheric cycle. The goal of the course is to provide students with an understanding of the processes occurring inside the Earth, and the skills necessary to evaluate the complex feedbacks that control these processes. .

GEOL 735 – Regional Tectonics (3) Integrated analysis (from both model and case history approaches) of the regional structural geology of selected classic areas and analysis of the interaction of tectonic and sedimentary processes in the production of the sedimentary sequences of selected

GEOL/MSCI 711 – Paleoclimatology (3) An overview of Earth's climate history during Cenozoic. Emphasis will be placed on Pleistocene glacial-interglacial climate variability and understanding the proxies used to reconstruct past climate changes.

GEOL/MSCI 781 - Physical Oceanography (3) Geographic and hydrodynamic aspects of oceanography, with emphasis on estuaries. Physical properties of sea water and theories and methods involved in ocean currents, air-sea interaction, waves, and tides.

GEOL/MSCI 782 - Chemical Oceanography (3) Chemical characteristics of sea water, distribution of properties, and chemical processes in the oceans, with emphasis on estuaries.

GEOL 770 – Groundwater Geology (3) The evaluation of aquifer characteristics by flow nets, Theis equation and graphic solution technique for water table and artesian conditions. Methodology of pumping tests and data collection. Prediction of aquifer response through time. Analog and computer analysis and interpretation of data.

GEOL 755 – Environmental Measurement and Analysis (3) A field and laboratory course designed to acquaint students with basic techniques needed to measure and analyze various biotic and abiotic environmental parameters in estuarine and shallow water habitats.

GEOL 758 – Analysis of Geological Data (3) Principles used in processing, smoothing, correlating and contouring geological data and simulating geologic processes.

GEOL/MSCI 783 – Oceanographic Time Series Analysis (3) Techniques in the analysis of oceanographic data sequences, including filtering techniques, fast Fourier transforms, and empirical orthogonal functions.