of one or more scholarly papers from primary literature of computer science; (2) The writing of a significant scientific paper or substantial document to give the student experience in writing for a scientific audience; (3) An oral presentation to students and/or faculty.

CSCI 391, -2; 491, -2 **Independent Study** (1, 2, 3 or 4)

CSCI 295, -6; 395, -6; 495 **Special Topics in Computer Science** (1, 2, 3 or 4 OD)
Previous topics include: wireless Java; Java message service; wavelets: neural networks; C#; and NET.

CSCI 496 **Honors in Computer Science** (4)

Earth Science (concentration in General Science)

Department of Physics and Earth Science: Mark E. Yuly, chair. Keith A. Horn, Associate Dean

Faculty: Donell Brandon Hoffman, Christopher M. Wells, Mark E. Yuly
Web site: www.houghton.edu/academics/programs/physics
Phone: 585.567.9280

General Information
Courses support current environmental and space interests and lead to the concentration required for a general science major. General science majors are required to take Physical Geology (ESCI 101) and another four-hour Earth Science course or General Astronomy (PHYS 102); an Earth Science concentration in General Science is fulfilled by adding eight more hours, including independent study.

COURSE DESCRIPTIONS

ESCI 101 **Physical Geology** (4, F11)
Study of materials, structure, and dynamics of the Earth's crust. Identification of rocks and minerals; topographic map studies. Three lecture, three laboratory hours each week. Lab Science or 2nd Science.

ESCI 212 **Environmental Earth Science** (4, OD)
Relationship between humans and Earth systems in the atmosphere, hydrosphere, lithosphere. Environmental problem solving. The laboratory will focus on applications of GIS and GPS to environmental and earth science problems. Three lecture, three laboratory hours each week. Lab Science or 2nd Science.

ESCI 224 **Atmospheric Science** (4, OD)
Comparative study of planetary atmospheres. Phenomena of Earth's atmosphere and aerospace, weather, meteorology, and climatology. Three lecture, three laboratory hours each week.

ESCI 230 **Hydrology** (4, OD)
A study of the properties and circulation of water on the surface of the land, underground and in the atmosphere. Topics to be covered include fluid mechanics, groundwater, wastewater, and environmental concerns. An engineering perspective will be used. Three lecture, three laboratory hours each week.

ESCI 291, 292, 391, 392, 491, 492 **Independent Study** (1, 2, 3 or 4)

ESCI 295, 395, 495 **Special Topics in Earth Science** (1, 2, 3 or 4)

ESCI 480 **Senior Capstone: General Science Seminar** (1, S)
Written thesis and oral presentation on a topic selected for interdisciplinary breadth describing current scientific research in the area of the student's concentration, based on a thorough review of scientific literature.