**Programs that Bring Together Geoscience and Sustainability**

**The Environmental Studies and Sciences Department at Ithaca College**

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The Department of Environmental Studies and Science (ENVS) at Ithaca College was created as a stand-alone program in September 2009 with the goal of becoming a nationally prominent undergraduate education and research program. Prior to that, it existed as an inter-departmental program based in the Department of Biology. The department offers two undergraduate degrees: a B.A. in Environmental Studies and a B.S. in Environmental Science, and a minor in Environmental. The creation of ENVS was supported by an institutional commitment to provide three new faculty lines in geography, earth science, and humanities as well as laboratory equipment and physical space. At this point, the core faculty members are four tenured or tenure-eligible professors, a half appointment of a tenured professor of history, and two part-time, non-tenure eligible faculty. The core faculty members teach most required courses while affiliated faculty members in other departments teach the remaining required and elective courses.

The department is dedicated to graduating students that are active inquirers and socially engaged leaders – the people we need to create a more sustainable future. In order to reach this goal, our curriculum is centered on several core values: experiential learning, systems thinking, and interdisciplinary classwork. The experiential aspect is implemented in several ways. For example, the introductory course for all majors, Environmental Sentinels, is a thoroughly outdoor class that focuses on teaching natural history, biodiversity, and geomorphology in addition to developing a student’s ability to perceive subtle changes in the environment. The understanding and appreciation of the natural environment is critical for the coursework that follows. Other experiential activities include field-based labs, travel courses, internships, and a cultural immersion requirement.

Having an interdisciplinary curriculum can have several meanings. Requiring courses that span several disciplines can be construed as interdisciplinary, but our department does not believe that this is effective. We strive to make each course interdisciplinary in the sense that all relevant subject matter is interwoven with the main course material. For example, a course in Earth System Science will include technology, economics, and policy topics as they relate to impacts on natural material and energy cycles. Creating an interdisciplinary curriculum *within* a specific course can be a challenge because it requires either an instructor that is comfortable navigating several disciplines and/or requires courses to be co-taught by instructors that represent more than one discipline. If implemented successfully, the outcome is that students are able address environmental sustainability using a more holistic approach.

A significant challenge faced by our department is how to effectively teach students with a broad range of interests, strengths, and weaknesses. One can view the “broadness” challenge in terms of content, that is, environmental studies and science covers a vast amount of information and asking both students and instructors to be competent in all areas is impossible. This is addressed in part by requiring students to have a self-designed concentration of fifteen course credits. The concentration allows the student to focus on an area of interest and investigate this topic in greater depth. The concentration often includes an internship and independent research with a faculty mentor. The desired outcome is a graduating student that has a distinct area of specialization.

While the challenge of broad content will always be inherent in the program, the ENVS faculty realize that there are essential skills that are somewhat independent of content. These include project development, geographic information systems, experimental design, and competency in written, oral and visual communication. While many of these skills are incorporated in most classes, one course in particular, Research Methods, is squarely aimed at this. This course is required for both the B.A. and B.S. students and is normally taken during their junior year. Students learn about a variety of applied methods common in environmental research including survey instruments, statistical analysis, and sampling of environmental media. But the central requirement is for each student to prepare and present a research or project proposal. This requires a variety of the aforementioned skills, but taken together, they ready the student for the challenge of approaching and solving complex problems. The desired outcome is that our students are prepared and have the flexibility to adapt to a variety of potential careers.