

ENVIRONMENTAL SCIENCE

<http://www.rit.edu/cos/environmental>

PROGRAM OVERVIEW FOR EMPLOYERS

The Environmental Science Program at RIT is an interdisciplinary program that includes core courses from the College of Science, the College of Liberal Arts, and the College of Applied Science and Technology. The RIT program has a number of distinctive features:

- The curriculum is rich in physical, life sciences and mathematics.
- The ES program is strong in introductory and advanced Liberal Arts courses, creating an understanding of the interdisciplinary nature of ES and how it fits into the “big picture”.
- The curriculum is designed primarily as BS/MS degree program. However, there is sufficient flexibility for students to obtain the BS degree only. An MS degree program is also available for students who have already obtained a BS degree.
- Each student must select and complete an ES concentration sequence of 5-7 courses (beyond the basic curriculum), designed to give them depth in a particular area of Environmental Science.
- ES coursework engages all students in a wide range of “hands on” learning experiences, problem solving skills, and group project opportunities.
- Students are strongly encouraged to participate in additional fieldwork and/or research.

Students are strongly advised to also participate in cooperative education experiences, providing them with paid environmental work experience.

Degree(s) Awarded

Bachelor of Science, Master of Science, Combined BS/MS

Enrollment

Approximately 80 undergraduate and 20 graduate students.

Cooperative Education Component

Although co-op is optional for environmental science majors, participation is strongly encouraged during the summer quarters of the second, third, & fourth years.

Salary Information (Avg/Range)

Co-op: \$13.08 \$10.00 - \$15.00

BS: * \$31,037

* From the National Association of Colleges & Employers (NACE) for 2009-2010 graduates

MS: Insufficient data

Concentrations:

Students in the BS program are required to take a minimum of 20-quarter credit hours, and students enrolled in the BS/MS program are required to take a minimum of 28-quarter credit hours in a selected concentration. The concentrations available at this time are: environmental biology, environmental chemistry, digital imaging, environmental economics, environmental public policy, remote sensing, mathematics and statistics. Students may also elect to design their own concentration, pending faculty approval.

Students Skills & Capabilities

The ES curriculum emphasizes environmental problem solving using an interdisciplinary team-based approach to learning.

By completion of the first two years in the program, students will have a clear understanding of the interdisciplinary approach to Environmental Science. They will also have a strong foundation in mathematics, chemistry, physics and geographic information systems (GIS). Students will also have **field experience** in: soil sampling, water quality measurements, land cover analysis, GPS, and ecosystem assessment and evaluation.

In subsequent years, field methods are further developed. Students will also have taken advanced courses in chemistry, ecology, policy, statistics, and remote sensing. Students will be able to solve significant environmental problems and engage in environmental research.

Environmental Science

Course Sequence BS degree

Course Sequence BS degree

First and Second Years

ES Freshman Symposium I, II
Introduction to Biology I-III*
General & Analytical Chemistry I & II*
Fundamentals of Organic Chemistry*
Project-based Calculus I- III OR Elementary Calculus I-II
Environment & Society*
Concepts in Environmental Science*
University Physics I-III* OR College Physics I-III*
Applications of Geographic Information Systems*
Data Analysis I & II*
Environmental Geology*

BS/MS Additional Courses:

Environmental Science Graduate Study I-III
Environmental Science Graduate Readings Seminar
Environmental Chemistry
Science Core Graduate Elective
Public Policy Core Graduate Elective
Environment & Society Graduate Core Elective
Environmental Science Graduate Research (3 cr. hr)
Professional Electives (5-9 cr. hr)
Thesis/Project (5-9 cr. hr)

*Course includes laboratory/field work

Equipment

Monitoring, Mapping, and Field Equipment:

GIS Software (ArcGIS & IDRISI, access to ENVI and ERDAS), Garmin and Trimble GPS receivers, soil sampling equipment, soil analysis equipment, water sampling devices, multimeters, individual probes for water quality analysis, LiCor light meter with 2 pi and 4 pi sensors, Hach LDO oxygen meters, ponar dredges, plankton samplers, macroinvertebrate nets/samplers, and a library of field reference texts. The Environmental Science program also runs and maintains an on-campus bird banding facility (RITBO) <http://www.rit.edu/~w-birds/>.

Other Equipment:

Fluorimeter, Raman Spectrometer, UV-Vis, GC-MS, ICP, Atomic Absorption, Polarimeter, TGA's Micro-extruder, Centrifuge, Electrochem Equipment, Gas Chromatography, HPLC detectors, Viscometer, ESR (built in-house), Incubators, Infrared Spectrophotometers, Capillary Electrophoresis, DSC's, DMA, Asher, 300 MHz NMR, drying oven, leaf area index meter, digital clinometer, Wiley mill, Lachat QuikChem Autoanalyzer, Ocean Optics Spectrometers, Hitachi UV-Vis Spectrophotometer, Unisense picoammeter and microelectrode profiling system.

Employers of Environmental Science Co-op and Graduating Students:

Employer sectors include: government regulatory agencies, private environmental organizations, engineering/consulting firms, industrial companies, etc. Recent participants include:

Harvard Forest, Clarkson University, Monroe County Department of Environmental Services, TES Environmental, Stantec Consulting, LaBelle Associates, University of Arizona, Epcot/Disney, Burns & McDonnell, Seaworld, University of Rochester Lab for Laser Energetics, NYS Dept. of Parks & Recreation, US Army Corps of Engineers, Student Conservation Assoc., Arcadis BBL, AGAT, Solid State Cooling Systems, Environmental Compliance, US EPA, US F&WS, Monroe, Wayne, and Wyoming Counties (NY) Soil and Water Conservation Districts, American University, RIT College of Liberal Arts, Greenpeace USA, Northern Ecological Assoc.

Contact Us:

We appreciate your interest in hiring RIT co-op, graduating students or alumni. We will make every effort to make your recruiting endeavor a success. Call our office and ask to speak with Charles Dispenza, the Program Coordinator who works with the Environmental Science program. For your convenience, you can also access information and services through our web site at <http://www.rit.edu/recruit>.

Charles W. Dispenza, Program Coordinator, 585.475.5465, cwdoce@rit.edu
Office of Cooperative Education and Career Services, 585.475.2301
RIT . Bausch & Lomb Center . 57 Lomb Memorial Drive . Rochester NY 14623-5603

Third and Fourth Years

Environmental Science Field Skills*
General Ecology*
Intro to Hydrology*
Conservation Biology*
Environmental Applications of Remote Sensing
Great Lakes I & II**
Environmental Science Concentration courses (20 cr. hr)
Environmental Science Capstone*
Liberal Arts Core/Concentration (20 cr. hr)
Liberal Arts: Art of Expression
Institute-wide electives (14 cr. hr)

MS Courses:

Environmental Science Graduate Study I-III
Environmental Science Graduate Readings Seminar
Raster Applications of GIS*
Fundamentals of Statistics
Advanced Conservation Biology*
Environmental Chemistry
Environmental Science Graduate Research (3 cr. hr)
Science Core Graduate Elective
Public Policy Core Graduate Elective
Environment & Society Core Graduate Elective
Professional Electives (5-9 cr. hr)
Thesis or research project (5-9 cr. hr)