

Environmental Science

BSc | www.yorku.ca/science/environmental-science

Admission Requirements

- ENG4U, MHF4U, SCH4U, SBI4U, MCV4U
- **Recommended:** SPH4U
- **Minimum admission average:** high 70s – mid 80s

Program

Environmental Science explores the impact of human activities on our planet through the study of biology, chemistry, physics and physical geography. You will gain a scientific foundation in the biological and physical sciences needed to address urgent environmental challenges and generate and communicate solutions.

The Environmental Science program offers two streams of study, and you select your stream in Year 2 of the program:

- In the **Environmental Dynamics** stream, you will specialize in physical geography, studying the interactions between land, air, water, and biological organisms to understand how the natural environment responds to stressors.
- In the **Biodiversity and Conservation** stream, you will specialize in environmental biology to understand how organisms and ecological communities are impacted by environmental stressors and learn to apply this knowledge to protect species and biodiversity.

In your studies, you will get practical experience in data collection, research, and scientific analysis in the field and in the laboratory. You will learn to work collaboratively and develop effective communication, analytic, and critical thinking skills while better understanding climate, ecological and biophysical systems. Our graduates are prepared to make transformative environmental change in careers within the private and public sector.

Students explore these critical issues:

- Climate change impacts and adaptation
- Biodiversity and conservation of species and habitats
- Water security and water quality
- Pollution
- Analysis of biological communities

First Year Courses:

- Biology
- The Dynamic Earth
- Water and Climate
- Evolution, Ecology, Biodiversity, & Conservation Biology
- Calculus
- Computer Use
- General Education Courses

Second Year Courses:

- Plant Biology
- Animals
- Ecology
- Statistics
- The Hydrosphere
- Vegetation and Soils
- Geomorphology

Upper Year Options:

- Water Quality and Stream Ecosystems
- Community Ecology
- Ecological Climatology
- Remote Sensing of the Earth's Surface
- Biodiversity
- Climate and Climate Change
- Desert Ecosystems
- Physical Hydrology and Water Resource
- Dynamics of Snow and Ice
- Fluvial Geomorphology
- Pollutants, Invaders and Global Change
- Environmental Toxicology
- Terrestrial Ecosystems
- Rivers: Environment and Process
- Hydrometeorology

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Experiential Education

The Faculty of Science provides a rich diversity of opportunities for undergraduate students to engage in Experiential Education. Students measure and analyze environmental samples in multiple field course options with the same equipment and techniques used in professional settings. The Biology field courses are an integral part of training in ecology and conservation. Students learn field methods and data collection, how to conduct field experiments, and the natural history and ecology of plants and animals.

In field study courses, such as Hydrosphere in second year, students measure water and energy flows on York’s campus. Whereas in another course, Water Quality and Stream Ecosystems, students conduct sampling of Black Creek following the standardized protocols outlined in the Ontario Stream Assessment Protocol and the Ontario Benthos Biomonitoring Network.

The Aquatic Biogeochemistry Lab provides hands-on training on lab analytical equipment under the supervision of a senior technician. Students routinely use the facility to conduct independent projects and for course work.

In our Flume lab students use a research-grade hydraulic flume to model river dynamics for course work and career-readiness training.

Semester Abroad at the Las Nubes EcoCampus in Costa Rica.

Possible Career Pathways

Your studies in Environmental Science at York will help prepare you for leadership roles in environmental fields of critical and increasing global demand. It will also prepare you for a very diverse range of career options.

- Environmental Consultant
- Environmental Pollution Assessment and Control
- Natural Resource Conservation
- Air Quality Specialist
- Education – elementary, high school, college, university
- Postgraduate Studies/Academic Career

Get In Touch

Domestic Students:
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“I chose York Science because I was very happy to be able to select within a range of flexible science programs which included courses with hands-on laboratory research exposure within my first semester. York Science emphasized the importance of collaboration and using many resources that the university has to offer to make new students, like myself, feel welcomed into a community with peers who have similar interests.”

- Victoria, Biology Student