

## PhD in Environmental Studies

### **Learning Objectives of the Program:**

1. To foster a research environment focused on complex socio-ecological issues and sustainable approaches to addressing environmental issues.
2. To train students to critically evaluate the broader implications of applying knowledge they generate to address socio-ecological issues related to the environment.
3. To engage students by facilitating advanced research opportunities that require intellectual curiosity and independence.
4. To develop students' communication skills to enable them to communicate complex ideas, issues and conclusions clearly and efficiently in a variety of forums – academic, political, mass media.

### **Anticipated Learning Outcomes Include:**

1. Students graduating from the PhD program will have depth and breadth of knowledge in environmental studies and the field of sustainability, which will support the student's future academic activities or professional practice with government, private or civil society sectors.
2. Through research and scholarship in sustainability, graduates will understand the requirements needed to conceptualize, design and produce original research or advanced scholarship, or artistic and other creative products that can satisfy peer review and publication in both academic and popular media. Graduates will be capable of critically examining and potentially extending a variety of methods through their research. Graduates may have chosen to explore and extend emerging integrative research approaches based on systems thinking such as resilience, sustainability assessment, and social innovation.
3. Through the application of knowledge, graduates will have built on their science/social backgrounds and will have incorporated methods from a variety of disciplines (politics, sociology, geography etc.) to ensure their results are meaningful to society and contribute to solutions to the environmental challenges we face.
4. Graduates will be capable of communicating their research findings in a variety of public forums.
5. Graduates will consistently demonstrate responsibility, integrity and intellectual independence as measured through their course work, their independent research and participation in the seminar series.
6. Graduates will be able to demonstrate the limits of their own knowledge generation through understanding the assumptions upon which their research is based and accepting that there are always different ways of understanding based on the perspectives we bring to research. A clear example of this issue involves research in Canada's north (an area of increasing interest among our faculty). Graduates will understand that their research, if based on western science, may be viewed by First Nation and aboriginal groups with skepticism, as these communities rely on a different knowledge system based on oral and traditional knowledge.

The objectives will be achieved by a combination of courses, independent research, seminars, readings, a comprehensive examination and a thesis.

**Courses:** The course requirements are: ENSC 801 Methodological and Conceptual Basis for Environmental Studies, and ENSC 802 Global Environmental Problems: Issues in Sustainability. Students who have already taken these courses during a SES MES program at Queen's will be exempt from these courses and will not have additional coursework requirements. In the event that similar courses have previously been taken by a student at another University, a thorough evaluation of the course outlines by the Graduate Admission Committee may also exempt a student from taking these courses. In addition, all students will be required to register for ENSC 897 Seminar in Environmental Studies.

**Independent research:** PhD candidates will come from a variety of disciplines including – biology, sociology, geography, geology, chemistry, engineering, planning, philosophy, environmental studies and others. Students will study a diverse range of topics all fitting under the broad umbrella of Sustainability. Topics of research will be similar to those of our Masters students in the MES program but will be of much greater depth, innovation and originality (e.g. environment and health, urban sustainability, tourism, northern development, environmental justice, aboriginal studies, agriculture). The research component will require students to demonstrate intellectual independence, as their topics will involve participation with diverse communities (for example communities in Nunavut, rural Canada as well as a variety of communities in countries outside of Canada). Students will be required to understand local and regional context to ensure their work is relevant and of use to decision-makers. In many cases, student research, both course based and their dissertation work will require ethics clearance providing first-hand experience with ethical behaviour and the use of appropriate guidelines and procedures for responsible research. As indicated earlier the PhD program will address several identified research priorities in the University's Strategic Research Plan, including environmental sustainability and Canada's North.

Students will be required to produce original research, advanced scholarship, or other creative products that can satisfy peer review and publication in both academic and popular media. Traditional journals such as *Environmental Monitoring and Assessment*, and *Arctic* are accepting environmental studies research and new journals have emerged to service the needs of environmental studies researchers such as *Local Environment*, and *Society and Environment*. Less traditional work will include art, websites, blogs, video and other social media which examine the social aspects sustainability. For example, a previous SES MES student sculptured human hands and displayed them on Wolfe Island as an expression of the emotions involved in the sustainability issues surrounding the use of wind turbines for energy generation.

**Readings:** Through frequent interactions with primary supervisors and supervisory committees, students will become familiar with existing literature, publications, and professional networks related to their selected area of interest. They will acquire an understanding of both the potential advantages and difficulties in applying different research methods and models from the humanities, the social, health and the natural sciences, to issues of sustainability. A key intellectual aim is to foster students' abilities to speak about sustainability using an interdisciplinary approach and also to foster a student's ability to speak to an interdisciplinary audience. To this end, the program also emphasizes the importance of transferable skills such as critical thinking and communication skills including written and oral presentation, and the use of appropriate computer software and information technology.

**Comprehensive examination:** PhD students will be required to complete a comprehensive examination within 18 months of initial registration (see below for format). The purpose of the

comprehensive exam is to confirm the eligibility of the candidate to continue their graduate studies in the area of sustainability by demonstrating depth and breadth of knowledge outside of their specific research area. Preparation for the comprehensive examination will encourage students to diversify and explore sustainability.

**Seminars:** The SES has a bi-monthly seminar series covering a diverse range of environmental issues, with speakers from the humanities, social sciences, health sciences, and natural sciences. PhD students will be required to attend these seminars and present in this series once during their program, ideally towards the end of their PhD in preparation for their PhD oral examination (see course work and ENSC 897). This presentation is in addition to the annual presentations made by students during the School's annual Research Day (see Section 5.2)

**Doctoral thesis:** Students will conduct doctoral research resulting in their dissertation. Topics of research will be similar to those of our Masters students in the MES program but will be of greater depth, innovation and originality (e.g. environment and health, urban sustainability, tourism, northern development, environmental justice, aboriginal studies, agriculture).