

# Graduate Handbook

2019 - 2020



School of the Environment  
UNIVERSITY OF TORONTO

- Collaborative Specialization in Environmental Studies
- Collaborative Specialization in Environment & Health

33 Willcocks St., Earth Sciences, Room 1021, Toronto, ON, Canada M5S 3E8  
416-978-3475

This handbook is available online at: <https://www.environment.utoronto.ca/graduate/>

## Contents

Welcome to Graduate Studies at the School of the Environment .....	4
School of the Environment Contact Information .....	5
Collaborative Specializations .....	7
Collaborative Specialization in Environmental Studies .....	9
How to Apply .....	9
Admission Requirements.....	10
Deadlines .....	10
Collaborative Specialization Requirements.....	10
Master’s Degrees Coursework Option.....	11
Master’s Degrees Thesis Option .....	11
Doctor of Philosophy Degrees .....	11
Collaborative Specialization in Environment and Health .....	12
How to Apply .....	12
Admission Requirements.....	12
Deadlines .....	13
Collaborative Specialization Requirements.....	13
Master's Degrees .....	13
Doctor of Philosophy Degrees .....	13
Internship Guidelines for Collaborative Specialization Students (Environmental Studies Only) .....	15
Internships .....	15
Types of Collaborative Specialization Internships .....	16
International Students .....	16
Internship Exemption .....	16
Collaborative Specialization Research Paper and Thesis Guidelines.....	17
The Research Paper .....	17
The Thesis .....	17
Awards and Funding .....	18
Research and Teaching Assistantships .....	18
Entry Scholarships.....	18
School of the Environment Restricted Awards and Fellowships.....	18

John R. Brown Memorial Prize.....	18
Alexander B. Leman Memorial Award.....	19
Arthur and Sonia Labatt Fellowships.....	19
George Burwash Langford Fund and Prize .....	19
Eric Krause Graduate Fellowship.....	19
Sperrin Chant Masonic Award in Toxicology.....	20
Alan H. Weatherley Graduate Fellowship in Environmental Leadership.....	20
Beatrice and Arthur Minden Graduate Research Fellowship.....	20
Marjorie Gillespie Bolton and Mabel Gillespie Norris Memorial Scholarship.....	21
Events.....	22
Seminar Series .....	22
School of the Environment Research Day .....	22
Environmental Career Day.....	22
Resources for Student Support.....	23
Student Life at UofT.....	23
Centre for International Experience .....	23
Graduate Professional Skills Program.....	23
Teaching Assistants Training Program.....	23
Community Engaged Learning.....	23
University of Toronto Graduate Students’ Union (GSU) .....	24
School of Graduate Studies (SGS).....	24
The U of T Career Centre .....	24
The Graduate Student Wellness Portal .....	24
Environment Resources on Campus.....	25
School of the Environment Research .....	25
University of Toronto Environmental Resource Network (UTERN).....	25
UofT Sustainability Office .....	25
Jane Goodall Institute .....	25
UofT Libraries.....	25
EnviroNews and Past Events.....	26
Course List.....	27
Environmental Studies.....	27
Elective Joint and Cross-Listed Courses.....	30

Elective Joint Courses with the School of the Environment.....	30
Other Elective Courses.....	31
Environment and Health Courses.....	34
Elective Joint and Cross-Listed Courses.....	35
Elective Joint Courses with the School of the Environment.....	35
Other Elective Courses.....	36

## Welcome to Graduate Studies at the School of the Environment



Welcome to the University of Toronto’s School of the Environment. The School was created as a hub for interdisciplinary teaching and research on environment-related themes, and as a focal point within the University of Toronto for environmental initiatives. Our aim is to promote interdisciplinary understanding and cooperation as to how complex environmental problems are conceptualized and addressed. Through our graduate academic offerings, we strive to offer outstanding academic opportunities and courses across the breadth of environmental studies and environmental science, and to equip students with the skills, knowledge and experience to make a difference in the world.

Our graduate collaborative specializations provide a unique opportunity for students coming from a wide variety of disciplinary backgrounds, ranging from engineering, chemistry, geography and planning, education and public health, to interact with peers and research faculty. Our courses are designed to promote interdisciplinary dialogue and understanding of environmental problems, which are essential prerequisites for the development of creative, interdisciplinary solutions to effectively tackle current environmental challenges. We invite interested graduate students to participate in our seminars, courses and collaborative specializations, which aim to make a positive difference in making society more sustainable.

This handbook is intended to provide an overview of the School’s graduate specializations, initiatives, and extra- and co-curricular activities, and to point students to the wealth of resources on our campus to support student learning and experience. It is meant to complement the School of Graduate Studies calendar (<https://www.sgs.utoronto.ca/calendar/Pages/default.aspx>), which remains the official repository of program listings, requirements, and courses. I encourage current and prospective students to review this Handbook, as well as the contents of our website ([www.environment.utoronto.ca](http://www.environment.utoronto.ca)), to become familiar with the School of the Environment’s vibrant, multi-disciplinary community.

I would like to introduce our Graduate Student Advisor, Pavel Pripa, who may be reached at [grad.office.env@utoronto.ca](mailto:grad.office.env@utoronto.ca). Pavel is available to assist you with graduate administrative matters. Please do not hesitate to contact me or Pavel with comments or questions about our academic specializations.

Clare Wiseman  
Associate Professor,  
Graduate Associate Director, School of the Environment  
[grad.director.env@utoronto.ca](mailto:grad.director.env@utoronto.ca)

## School of the Environment Contact Information

Contact information is also provided at <https://www.environment.utoronto.ca/people/>

The administrative offices of the School are located at:

ES1016V, 33 Willcocks St., University of Toronto, Toronto, ON, M5S 3E8, Canada

Main Office Telephone: 416-978-6526

Name	Title / Position	Location	Contact Info
Steve Easterbrook	Director	<a href="#">ES 1020, 33 Willcocks St.</a>	Email: <a href="mailto:director.environment@utoronto.ca">director.environment@utoronto.ca</a> Phone: 416-978-6526 Fax: 416-978-3884
Clare Wiseman	Graduate Associate Director	<a href="#">ES 2097, 33 Willcocks St.</a>	Email: <a href="mailto:grad.director.env@utoronto.ca">grad.director.env@utoronto.ca</a> Phone: 416-978-2972 Fax: 416-978-3884
Pavel Pripa	Graduate Student Advisor	<a href="#">ES 1021, 33 Willcocks St.</a>	Email: <a href="mailto:grad.office.env@utoronto.ca">grad.office.env@utoronto.ca</a> Phone: 416-978-3475 Fax: 416-978-3884
Stella Kyriakakis	Assistant to the Director	<a href="#">ES 1016V, 33 Willcocks St.</a>	Email: <a href="mailto:dir.assistant.env@utoronto.ca">dir.assistant.env@utoronto.ca</a> Phone: 416-978-6526 Fax: 416-978-3884
Laurane Harding	Business Officer	<a href="#">ES 1016V, 33 Willcocks St.</a>	Email: <a href="mailto:business.officer.env@utoronto.ca">business.officer.env@utoronto.ca</a> Phone: 416-978-2584 Fax: 416-978-3884
Kiran Champatsingh	Communications Officer	<a href="#">ES 1016V, 33 Willcocks St.</a>	Email: <a href="mailto:communications.env@utoronto.ca">communications.env@utoronto.ca</a> Phone: 416-978-2994 Fax: 416-978-3884

## Welcome from Graduate Environmental Students' Association (GESA)

The Graduate Environmental Students' Association welcomes all new and returning Graduate Students of the School of the Environment and any field of studies interested in Environmental issues from local scale to global scale.

In your upcoming academic year, GESA would like to help you build your social and professional network by bringing together graduate students from environmental disciplines across campus. We plan professional development workshops such as communication workshops, organize movie events on environmental topics and hold pub nights to just get away from studies and socialize once in a while.

Everyone is very welcome to attend and just enjoy any of our events throughout the year – or if you are looking for an opportunity to get involved: join our executive committee!  
You can contact us in many ways:



[gesa@utoronto.ca](mailto:gesa@utoronto.ca)



<https://www.facebook.com/GESAatUofT>



[https://twitter.com/gesa\\_uoft](https://twitter.com/gesa_uoft)



<http://gesa.sa.utoronto.ca/about-gesa/>

Charlie White and Janina Kowalski  
Co-Presidents, GESA

## Collaborative Specializations

The School of the Environment offers two graduate Collaborative Specializations at the master's and doctoral levels: the Collaborative Specializations in Environmental Studies and Environment & Health, offered at the downtown University of Toronto campus.

What is a Collaborative Specialization, its objectives, learning outcomes, and added value?

The School's Collaborative Specializations provide the opportunity for graduate students enrolled in a Master's or PhD program in a degree-granting unit to refine the focus of their research and study to reflect an interdisciplinary approach to thinking about the environment. The rationale for a Collaborative Specialization is the apparent need that exists both within the University and in the wider society for an interdisciplinary understanding of environmental problems, their causes, and possible solutions. Our Collaborative Specializations are intended to provide a unique opportunity for interdisciplinary dialogue and learning about complex environmental challenges. These challenges demand a serious commitment to both enhancing awareness and developing positive solutions to effect change.

The objectives of our Collaborative Specializations are as follows:

- To introduce students to the world of graduate-level interdisciplinary research in environmental studies, and in environment & health;
- To enhance student learning in the home unit, by providing opportunities to interact with students and faculty from other units who are also interested in environment.
- To develop students' skills in communicating about environmental issues across disciplinary boundaries.

Over twenty-five degree programs from different departments on campus participate in Collaborative Specializations; students apply for admission to a master's or doctoral degree program in a degree granting graduate unit, also called 'home' department, indicating their desire to pursue collaborative studies with the School. By completing additional course work and conducting environment-related research through the School, students receive a special designation on their UofT transcript indicating their successful completion of one of the Collaborative Specializations and receive an official parchment from the School of Graduate Studies. Collaborative Specializations are offered to interested students at no additional cost.

Upon completion of the Collaborative Specialization requirements, students are expected to achieve the following learning outcomes:

- Students will understand and apply both disciplinary and interdisciplinary analysis to environmental issues;
- Students will have an introductory understanding of environmental decision-making by individuals, business firms, and governments;
- Students will have similar introductory understanding of one or more other aspects of environmental issues from the required elective course;

- Students will have further developed the ability to understand and analyze factors involved with resolution of environmental problems;
- Doctoral students will be able to effectively communicate the results of their research findings to a broad interdisciplinary audience in an oral presentation.

Collaborative Specializations are a way of facilitating interdisciplinary learning and exchange, as well as providing students and faculty with an intellectually stimulating milieu. Regardless of the home department to which they belong, all students take a core course from the School of the Environment where they interact and collaborate with students from other disciplines who are pursuing similar work. Students are able to specialize in an area of environmental research and gain exposure to a wide range of intellectual and methodological disciplines focused on environmental issues. Students in each specialization have access to a Graduate Student Advisor, who can provide assistance and answer questions about the respective specializations.

Participation in one of our Collaborative Specializations adds value to students' educational experience by providing exposure to people, ideas, and methods outside the disciplinary boundary of the home unit. This is beneficial because students will need to acquire a working knowledge and understanding of the range of scientific, technological, political, legal, ethical, health and occupational perspectives on environmental issues post-graduation. Collaborative Specializations provide additional value to students' educational experience by virtue of the breadth of the specialization and the opportunity for exposure to different fields in environmental studies. In addition, students graduating with a designation in *Environmental Studies* or *Environment & Health* may strengthen their prospects for employment.

The two Collaborative Specializations each offer a seminar series on new developments or issues within each field of study. These seminars and other social get-togethers provide informal settings for useful networking with other students, faculty members, administrators and external experts, each contributing different intellectual traditions and policy perspectives. Students in the School's Collaborative Specializations are provided with a unique opportunity to take advantage of this large pool of experience and expertise, resulting in one of North America's most engaging and cross-disciplinary specializations in the environment.

## Collaborative Specialization in Environmental Studies

### How to Apply

Students who wish to enroll in the Collaborative Specialization in Environmental Studies must first apply to and be accepted into a Master's or Doctoral program in one of the following degree granting graduate units, also called "home" departments:

Adult Education and Community Development—MA, MEd, PhD (LHAE at OISE)

Anthropology—MA, MSc, PhD

Chemical Engineering and Applied Chemistry—MAsc, MEng, PhD

Chemistry—MSc, PhD

Civil Engineering—MEng, MEngCEM, MAsc, PhD

Earth Sciences—MAsc, MSc, PhD

Ecology and Evolutionary Biology—PhD

Forest Conservation—MFC

Forestry—MScF, PhD

Geography—MA, MSc, PhD

Global Affairs – MA (Munk School of Global Affairs)

Information—MI (Faculty of Information)

Information Studies—PhD (Faculty of Information)

Management—MBA, PhD (Rotman School of Management)

Physics—MSc, PhD

Planning—MScPI, PhD (Department of Geography and Planning)

Political Science—MA, PhD

Public Policy and Governance – MPP (Munk School of Global Affairs)

Religion—MA, PhD

Social Justice Education—MA, MEd, EdD, PhD (OISE)

Sociology—MA, PhD

Sustainability Management—MScSM (University of Toronto Mississauga)

Women and Gender Studies—MA, PhD

Please note that, on a case by case basis, School of the Environment will admit students from home departments other than those on the above list. If your department (degree program) does not appear in the list above, please contact the Graduate Student Advisor, Pavel Pripa, at 416-978-3475 or [grad.office.env@utoronto.ca](mailto:grad.office.env@utoronto.ca) for information on how you can apply to the School's Collaborative Specializations.

Most students apply to the home department that corresponds to their undergraduate specialization; however, some graduate departments are flexible about admitting students from other areas. For more information and to obtain a formal application package, please contact the degree program offered by the home department to which you intend to apply, or see the School of Graduate Studies website: [www.sgs.utoronto.ca](http://www.sgs.utoronto.ca)

## Admission Requirements

Once a student has chosen the degree program name under the Program of Study section and the home department in the on-line application form, there is a line “Collaborative Specializations” (below the “Home Department” line), where the applicant should identify “Environmental Studies” as the specialization of choice. Students must also submit the following items to the School’s Graduate Administrator ([grad.office.env@utoronto.ca](mailto:grad.office.env@utoronto.ca)):

- A copy of the School of the Environment Collaborative Specialization Confirmation Form (available online at <https://www.environment.utoronto.ca/graduate/forms/>)
- A copy of the on-line application form submitted to the home department
- A copy of ALL university transcripts sent to the home department (photocopies are acceptable)
- A Statement of Interest, not more than one page in length (single-spaced, submitted as a word compatible doc or PDF), outlining the nature of the research you have carried out in the past and the environment-related research you are proposing to do in your graduate degree program
- A copy of your resume/CV
- A copy of your official offer/acceptance letter (may be submitted after you start pursuing the collaborative specialization).

## Deadlines

Prospective students are strongly encouraged to submit copies of the documents indicated above before the application deadline established by their home department. However, pending enrollment limits, School of the Environment will allow potential students to apply to Collaborative Specializations beyond this deadline. Please note that once a student has officially registered in a home department degree program, they may apply to and enroll in either of the School’s Collaborative Specializations during the academic year, provided they are able to complete the specialization requirements within the time limits set for the completion of their degree. Many students apply to and enroll in Collaborative Specializations at the School of the Environment Orientation Day, usually held in the first week of each academic year.

## Collaborative Specialization Requirements

The requirements listed below must be completed in combination with the degree program requirements of the student’s respective home department and may be counted as electives towards the degree program credits of the student’s home department. Typically, students complete up to 1.0 full-course equivalent (FCE) and conduct research on an environmental topic. Please note that requirements in some participating degree programs may vary. Therefore, we encourage students to check the calendar entries for their respective home department programs. The School of the Environment also offers students in the non-thesis master's degree stream the opportunity to complete an internship in fulfilment of the Collaborative Specialization requirements, unless they have an internship component built into their home unit degree program. Specific Collaborative Specialization requirements are listed on the School of the Environment’s website under the Environmental Studies Collaborative Specialization (<https://www.environment.utoronto.ca/graduate/specializations/>).

### Master's Degrees Coursework Option

- Complete the half-credit mandatory core course ENV 1001H (0.5 FCE)
- Complete one half-credit elective course (0.5 FCE) from the list of approved electives below.
- Complete an environment-related internship of approximately three months full-time employment (ENV 4444Y; 1.0 FCE), unless they have an internship requirement included into their home unit degree program.
- Produce a brief research paper on an environment-related topic, which may be related to the internship experience (ENV 5555Y; 1.0 FCE), unless they have a research paper requirement included into their home unit degree program.

Note: For a complete and most up-to-date list of Collaborative Specialization requirements by each participating degree program for master's students in the coursework option, please visit the School of the Environment website at <https://www.environment.utoronto.ca/graduate/specializations/>

### Master's Degrees Thesis Option

- Complete the half-credit mandatory core course ENV 1001H (0.5 FCE)
- Complete one half-credit elective course (0.5 FCE) from the list of approved electives below.
- Write a thesis in the home department on an environment-related topic

### Doctor of Philosophy Degrees

- Complete the half-credit mandatory core course ENV 1001H (0.5 FCE), unless already completed at the master's level.
- Complete one half-credit elective course (0.5 FCE) from the list of approved electives below.
- Complete a thesis on an environmental topic in the home department. The thesis committee membership will include a supervisor (from the student's home department, preferably who is also a member of the graduate faculty in the School of the Environment) and at least one other member from a collaborating unit, as may be decided by the graduate home unit. A copy of the final thesis must be submitted to the School of the Environment prior to graduation.
- Present a seminar on thesis research, either in the School of the Environment's Environment Seminar Series or at the School of the Environment Research Day.
- Additional courses may be required by the home department and/or by the supervisor or supervisory committee, depending on academic and/or career goals of the student, as well as departmental regulations.
- A supervisor or supervisory committee may be appointed for each student by the home department and the School of the Environment.

All students who successfully complete the Collaborative Specialization requirements will receive a special designation "*Completed Collaborative Specialization in Environmental Studies*" on their UofT transcript and an official parchment from the School of Graduate Studies. There are no additional fees required for enrollment in a Collaborative Specialization at the School of the Environment.

## Collaborative Specialization in Environment and Health

### How to Apply

Students who wish to enroll in the Collaborative Specialization in Environmental and Health must first apply to and be accepted into a Master's or Doctoral program in one of the following degree granting graduate units, also called "home" departments:

Adult Education and Community Development – M.Ed., M.A., Ph.D.  
Chemical Engineering and Applied Chemistry – M.Eng., M.A.Sc., Ph.D.  
Geography – M.A., M.Sc., Ph.D.  
Medical Science – M.Sc., Ph.D.  
Physical and Environmental Sciences – M.Env.Sc., Ph.D.  
Planning – M.Sc.Pl., Ph.D.  
Public Health Sciences – M.P.H., M.Sc., Ph.D.  
Women and Gender Studies – M.A., Ph.D.

Please note that, on a case by case basis, the School will admit students from home departments other than those on the above list. If your department does not appear in the list above, please contact the Graduate Student Advisor, Pavel Pripa, at 416-978-3475 or [grad.office.env@utoronto.ca](mailto:grad.office.env@utoronto.ca) for information on how you can apply to the School's Collaborative Specializations.

Most students apply to the home department that corresponds to their undergraduate specialization; however, some graduate departments are flexible about admitting students from other areas. For more information and to obtain a formal application package, please contact the home department to which you intend to apply, or see the School of Graduate Studies website: [www.sgs.utoronto.ca](http://www.sgs.utoronto.ca)

### Admission Requirements

Once a student has chosen the degree program name under the Program of Study section and the home department in the on-line application form, there is a line "Collaborative Specializations" (below the "Home Department" line), where the applicant should identify "Environment and Health" as the specialization of choice. Students must also submit the following items to the School's Graduate Administrator ([grad.office.env@utoronto.ca](mailto:grad.office.env@utoronto.ca)):

- A copy of the School of the Environment Collaborative Specialization Confirmation Form (available online at <https://www.environment.utoronto.ca/graduate/forms/>)
- A copy of the on-line application form submitted to the home department
- A copy of ALL university transcripts sent to the Home Department (photocopies are acceptable)
- A Statement of Interest, not more than one page in length (single-spaced, submitted as a word compatible doc or PDF), outlining the nature of the research you have carried out in the past and the environment-related research you are proposing to do in your graduate degree program
- A copy of your resume/CV

- A copy of your official offer/acceptance letter (may be submitted after you start pursuing the collaborative specialization).

### Deadlines

Prospective students are strongly encouraged to submit copies of the documents indicated above before the application deadline established by their home department. However, pending enrollment limits, the School of the Environment will allow potential students to apply to Collaborative Specializations beyond this deadline. Please note that once a student has officially registered in a home department degree program, they may apply to and enroll in either of the School's Collaborative Specializations during the academic year, provided they are able to complete the Collaborative Specialization requirements within the time limits set for the completion of their degree program. Many students apply to and enroll in Collaborative Specializations at the School's Orientation Day, usually held in the first week of each academic year.

### Collaborative Specialization Requirements

The requirements listed below must be completed in combination with the degree program requirements of the student's respective home department and may be counted as electives towards the degree program credits of the student's home department. Typically, students complete up to 1.0 full-course equivalent (FCE) and conduct research on a topic related to environment and health. Specific Collaborative Specialization requirements are listed on the School's website under the Environment and Health Collaborative Specialization (<https://www.environment.utoronto.ca/graduate/specializations/>).

### Master's Degrees

- Complete the half-credit mandatory core course ENV 4001H (0.5 FCE).
- Complete one half-credit elective course (0.5 FCE) from the list of approved electives below.
- For degree programs that require a thesis or research project, the topic should be related to the field of environment and health, as approved by the home department and the Collaborative Specialization Committee. A copy of the final thesis or project must be submitted to the School of the Environment prior to graduation.

### Doctor of Philosophy Degrees

- Complete the half-credit mandatory core course ENV 4001H (0.5 FCE), unless already completed at the master's level.
- Complete one half-credit elective course (0.5 FCE) from the list of approved electives below.
- Present a seminar either in the Environment and Health Seminar Series or at the School of the Environment's Research Day.
- Complete a thesis on a theme in environment and health. The thesis committee membership will include a supervisor (from the student's home department, preferably who is also a member of the graduate faculty in the School of the Environment) and at least one other member from a collaborating unit. A copy of the final thesis must be submitted to the School of the Environment prior to graduation.

All students who successfully complete the Collaborative Specialization requirements will receive a special designation “*Completed Collaborative Specialization in Environment and Health*” on their UofT transcript and an official parchment from the School of Graduate Studies. There are no additional fees required for enrollment in a Collaborative Specialization at the School of the Environment.

## Internship Guidelines for Collaborative Specialization Students (Environmental Studies Only)

### Internships

Graduate students required to complete an internship, such as masters' degree non-thesis stream students, must fill out and submit for approval the Internship Placement Form, available online: <https://www.environment.utoronto.ca/graduate/forms/>. The approval of the placement is done in consultation with the student's home unit supervisor (Graduate Associate Chair) and the School's Graduate Associate Director or Graduate Student Advisor prior to commencing the internship activity.

The purpose of the internship is to provide the student with work experience involving an environmental issue related to their program of study and research. The internship may be either paid or on a voluntary basis, and should consist of the equivalent of at least 3 months of full-time employment. Many students do their internships in the summer term after completing their coursework. Off-campus internships are strongly recommended in order for students to gain practical experience, which will benefit them in their professional careers.

The internship is a significant component of the Environmental Studies Collaborative Specialization and is designed to offer students an opportunity to expand their interdisciplinary experience and turn their theoretical knowledge into practical skills. Since the program's inception in the 1970s, all students requiring internships have successfully found internship opportunities, or have successfully applied for an internship exemption based on previous relevant work experience. The satisfactory placement of a student in an internship depends strongly on the initiative of the student and the assistance of his/her supervisor and other faculty members. The School of the Environment's Graduate Student Advisor helps as much as possible by providing lists of previous student placements and current opportunities, and can act as a liaison between the student and a potential placement organization. When a student is ready to start looking for an internship, they should contact the School's Graduate Student Advisor for information on current opportunities and internship registration procedures.

**NOTE:** Collaborative Specialization students who are required to take an internship as part of their collaborative requirements must register on ROSI or ACCORN for ENV 4444Y (if there is no designated internship code in their degree program) at the beginning of the academic year or the term in which they plan to take the internship. Students planning to do their internship during the summer term must re-register on ROSI or ACCORN for the summer term at the end of the winter/spring term before the registration deadline set by the School of Graduate Studies. Please check the SGS academic calendar for registration deadlines and contact the School's Graduate Student Advisor for any questions about internship registration.

Upon completion of the internship, a written assessment of the student's performance by the internship supervisor is required in order for the student to receive credit. This should be one page or less in length and should be written on the organization's letterhead and addressed to the School's Graduate Student Advisor or Graduate Associate Director. Internships are evaluated on the basis of credit/non-credit.

### Types of Collaborative Specialization Internships

The following internship models have been successfully applied in past years:

- *Practical Internship*: The student individually finds placement in an organization/company undertaking environmental work (government, industry or consultancy) for up to three or more months. The staff of the interning office have the student conduct research and/or perform other duties related to topics that would be acceptable for the research component of their degree.
- *School-based Internship*: The student undertakes an environment related research project on campus supervised by a faculty member(s) associated with the School of the Environment.

### International Students

International students will require a letter from their home department that indicates an internship is required as part of their Collaborative Specialization. For more information on Visa and immigration issues please contact the Centre for International Experience:

33 St. George St., Cumberland House  
Toronto, ON M5S 2E3  
416-978-2564  
416-978-4090 (fax)  
[cie.information@utoronto.ca](mailto:cie.information@utoronto.ca)  
<http://www.studentlife.utoronto.ca/cie>

### Internship Exemption

Students in a Collaborative Specialization who have prior relevant environmental work experience may be exempted from their internship requirement with approval from the School of the Environment's Director or Graduate Associate Director, and the home department's Chair or Graduate Associate Chair/Director. At the time of admission to the home department, the student should fill out and submit the Internship Exemption Form along with a letter to the School of the Environment's Graduate Associate Director outlining their relevant work experience and supporting documentation from the organization/company. If the exemption request is approved, this may reduce the amount of time and coursework necessary for the student to complete their program.

## Collaborative Specialization Research Paper and Thesis Guidelines

### The Research Paper

Graduate students registered in a master's degree non-thesis stream in their home unit, who are taking one of the School's Collaborative Specializations, may be required to complete a research paper on an environment-related topic. The paper should be supervised by a faculty member from student's home department, who is also a member of the graduate faculty of the School of the Environment. A list of current graduate faculty affiliated with the School is available online: (<https://www.environment.utoronto.ca/people/graduate-faculty/>). Students wishing to work with a faculty supervisor who is not appointed to the School should contact the Graduate Associate Director for permission.

The length, style and format of the research paper are within the discretion of the faculty supervisor. The School of the Environment, however, recommends that the research paper be 20-30 double-spaced pages in length. Types of research papers include:

- A research paper based on an internship experience
- A literature review in an area related to a field of research
- A primary research paper based on an area of interest

Please note that students registered in a degree program that requires writing a research paper in their home unit as part of their degree requirements, shall use their specific home unit code designator when registering on ACORN or ROSI. In such cases, students will write only one research paper that will count toward both their degree and Collaborative Specialization requirements, provided the research paper is written on an environment related topic or contains an environment related component. If your home department does not have a research paper requirement and an established research paper code designator, you must use the School's code ENV 5555Y when registering on ACORN or ROSI. Please contact the School's Graduate Student Advisor for any questions regarding the registration procedure for ENV 5555Y. A final copy of the research paper must be submitted to the Graduate Office of the School of the Environment, along with an email from your supervisor confirming that your paper has been graded (Pass/Fail) and approved.

### The Thesis

Collaborative students not enrolled in a coursework or research project stream are required to write (and, if applicable, to orally defend) an environment relevant research thesis of acceptable quality in their home department. Thesis research should be supervised by one or more faculty members from the student's home department, at least one of whom is a graduate faculty member of the School of the Environment. An electronic copy of the final approved thesis must be submitted to the School of the Environment Graduate Office prior to convocation.

## Awards and Funding

### Research and Teaching Assistantships

The School of the Environment offers a limited number of Teaching and Research Assistantships to eligible students enrolled in its Collaborative Specializations. When positions become available, notices will be sent via the graduate student listserv and posted on the School's website.

### Entry Scholarships

Every year, a limited number of entry scholarships are awarded to incoming students. Upon application to the degree program, each student will be automatically considered for these on a competitive basis.

Students may also receive funding through their home department or through the School of Graduate Studies. For more information, see:  
<http://www.sgs.utoronto.ca/currentstudents/Pages/Financing-Your-Graduate-Education.aspx>

### School of the Environment Restricted Awards and Fellowships

The School of the Environment offers the following graduate awards and fellowships on an annual basis to graduate students enrolled in a Collaborative Specialization. Deadlines for applications are usually announced at the end of December or in early January. Applications should be submitted online to the Graduate Student Advisor at the School of the Environment. Detailed application procedure information will be posted on the School of the Environment website: [www.environment.utoronto.ca/graduate/scholarships/](http://www.environment.utoronto.ca/graduate/scholarships/), and instructions will be sent out to the graduate students listserv when it becomes available.

### John R. Brown Memorial Prize

The late Dr. J. R. Brown was a professor in the Department of Environmental Health, Faculty of Medicine, an associate member of the former Institute for Environmental Studies and a principal investigator of many environmental research projects during the 1970s. Under the terms of an endowment generously contributed by Mrs. Helen M. Brown, an annual prize is awarded for the best-applied research project of a full-time graduate student in the field of occupational or environmental health between the students of the Faculty of Medicine and the School of the Environment, and the Department of Chemical Engineering and Applied Chemistry of the Faculty Applied Science and Engineering. The value of this award is approximately \$1,100. The exact amount of the award is announced by the end of April in the respective academic year.

### Alexander B. Leman Memorial Award

This Award was established by the Leman family, friends and colleagues of Alexander B. Leman, an architect and urban planner who founded his own architectural firm (1958) as well as Leman Group Inc. (1972), an urban development and planning consulting company. The award is worth \$500 and is awarded to a graduate student enrolled in a Collaborative Specialization at the School of the Environment and the Department of Geography's Program in Planning, based on academic merit and financial need.

### Arthur and Sonia Labatt Fellowships

Through a generous donation of Arthur and Sonia Labatt, a graduate fellowship fund was established and is awarded on an annual basis to support students enrolled in one of the graduate Collaborative Specializations of the School of the Environment or in the Juris Doctor Certificate in Environmental Studies program offered by the Faculty of Law. Students are asked to submit a paper which explores practical solutions to environmental issues and/or examines the marketplace for solutions to environmental problems. Selection is also based on the applicant's record of academic excellence and financial need. The value of the award is \$5,000, but the amount may vary depending on the number of awards given in a particular year.

### George Burwash Langford Fund and Prize

This prize is named in honour of Dr. George Burwash Langford, the founder and first Director of the Great Lakes Institute, which became the Institute for Environmental Studies and is now the School of the Environment. It is the result of generous donations from family, friends and colleagues of George Langford. The purpose of the prize is to provide support and encouragement for student research and service to the School of the Environment. The award is worth \$500 and is given annually to a graduate student enrolled in a Collaborative Specialization offered by the School of the Environment who combined excellence in research in environmental studies and contributes to the work of the School.

### Eric Krause Graduate Fellowship

This fellowship honours the late Eric Krause who passed away in May 2002 after a courageous battle with cancer. In 2003, Eric's former colleagues at the City of Toronto and the University of Toronto came together to fundraise for a scholarship in his memory. Eric earned a B.A. and a B.Sc. at U of T, and continued his studies in the Department of Geography and the former Institute for Environmental Studies (now School of the Environment), completing an M.A. in 1997. As part of his graduate studies, Eric participated in a summer internship placement with the City of Toronto and completed a thesis titled "Ecological Footprints, Climate Change and Sustainable Development in the Greater Toronto Area." Eric took the Ecological Footprint model to the City of Toronto where he played an important role in developing the City's environmental plan. He also operationalized the "Footprint for the City" project and developed a website that allowed anyone to calculate their own ecological impact. The \$500 award is given on the basis of financial need and academic excellence to a graduate student in the School of the Environment who meets OSOTF guidelines. Preference is given to students who have obtained their undergraduate degree from the former University of Toronto Division for Environment or, presently, the School of the Environment.

### Sperrin Chant Masonic Award in Toxicology

This award commemorates Professor Sperrin Chant, a member of the University Lodge, who graduated from the University of Toronto and returned to teach here in the Psychology Department before moving to the University of British Columbia, where he became Dean. Professor Chant was involved in several Royal Commissions, one of which gave rise to Simon Fraser University. His son, Dr. Donald A. Chant, was Chair of Zoology, then Provost, of the University of Toronto. His lifetime research dealt with biological and integrated control of pests as an alternative to chemical pesticides. The award is given to a graduate student enrolled in a School of the Environment graduate Collaborative Specialization based on financial need, academic excellence, and strength of character. The value of the award is \$1,500, but the amount may vary depending on the number of awards given in a particular year.

### Alan H. Weatherley Graduate Fellowship in Environmental Leadership

This fellowship was established at the University of Toronto by Robena C. Weatherley to honour the memory of her husband, Professor Emeritus Alan H. Weatherley, and to reflect his personal interest, deep concern and life-long commitment to environmental issues. Alan Weatherley (1928-2012) was Professor of Zoology at the University of Toronto from 1975 to 1993. He was the author of more than 75 research articles and three books on fisheries biology, and continued to work in conservation after his retirement. A short biography of Alan Weatherley will be distributed to each recipient, along with a copy of his book titled “*A Conservationist Perspective*”. To be awarded annually to one PhD student enrolled in the School of the Environment’s graduate Collaborative Specializations, to encourage their research and academic achievement. The fellowship should be awarded to a student who demonstrates exceptional academic and/or practical leadership in the area of environmental issues. A student can only receive the award once during their PhD studies. Depending on the annual availability of funds, the value of this award will be between \$2000 - \$4000.

### Beatrice and Arthur Minden Graduate Research Fellowship

This fellowship, created by the family of Beatrice and Arthur Minden, was established to honour their memory and philanthropic spirit. Arthur Minden (1910-1966) journeyed as a child with his family from Zhitomir, then part of the Russian Empire, to Hamilton, Ontario. In 1912, Canada became his home. The first of his family to attend university, he always remembered his student days at U of T as filled with opportunity and possibility. He graduated from Osgoode Hall in 1935 and established a law practice that grew to become a prominent firm. (Toronto’s Minden Gross LLP was founded in 1950 by Arthur Minden, with Edwin J. Pivnick and Morris A. Gross.) Well known for his enthusiasm, love of life and the assistance he extended to others, his generous character developed into an active public-spiritedness and commitment to philanthropy. Beatrice Minden, née Spiegel (1910-2009) was born in Toronto to immigrant parents from Galicia. She married Arthur Minden in 1934 and shared his exuberance for life, the arts and community philanthropy supporting many of Toronto’s cultural and health care organizations throughout her long life. To be awarded to one or more PhD students enrolled in the School of the Environment’s graduate collaborative specializations to provide them with support during the research stage of their dissertations,

including enabling their involvement in conferences, summer schools, field work and collaborative visits to research groups across Canada and around the world. Preference will be given to graduate students who have demonstrated academic excellence and whose PhD research is specifically focused on environmental issues, and to projects that open up new intellectual avenues and/or foster interdisciplinary activity related to the environment. Up to \$3,000 is available per award and typically three awards will be given each year, depending on the annual availability of funds. Allowable expenses include travel and accommodation, registration fees for conferences or summer schools, and related costs. Graduate student stipend support is not an allowable expense. Award recipients may be required to give a presentation on the results of their project as part of the School's Environment Seminar Series or Annual Research Day.

#### **Marjorie Gillespie Bolton and Mabel Gillespie Norris Memorial Scholarship**

In spring 2018, the inaugural Marjorie Gillespie Bolton and Mabel Gillespie Norris Memorial Scholarship will be awarded. This new scholarship was established at the School of the Environment from the estate of Marjorie Bolton. It will be awarded annually to a graduate student at the University of Toronto with demonstrated financial need. The academic focus of the student will be in the area of sustainability, environmental justice, biodiversity, and/or conservation. Preference will be given to a student enrolled in the School of the Environment's graduate programs. The value of this award is approximately \$2,000. The exact amount of the award is announced by the end of April in the respective academic year.

## Events

### Seminar Series

Throughout the academic year, the School of the Environment holds two seminar series: Environment Series and Environment & Health Series, featuring topics related to the School's Collaborative Specializations. Speakers include faculty from both UofT and other universities, Ph.D. candidates, policy makers and community stakeholders. All graduate students are encouraged to attend. Seminars are held on a biweekly basis. In 2019-2020, the Environment Seminar Series will be held at 12:10 p.m. on Wednesdays in the fall and winter terms, and will be linked to the Environmental Studies Collaborative Specialization core course ENV1001H. The Environment & Health series is held in the winter term on Wednesdays at 4:10 p.m. and is linked to the Environment and Health Collaborative Specialization core course ENV4001H.

For additional information, please contact Pavel Pripa at [environment.seminars@utoronto.ca](mailto:environment.seminars@utoronto.ca) or 416-978-3475.

### School of the Environment Research Day

Every spring, usually in late April, the School of the Environment marks the end of the academic year by hosting its annual Research Day. This event features research presentations by School faculty and students, as well as the presentation of graduate student awards. All students and faculty are encouraged to attend.

For additional information, please contact the Director's Assistant at [dir.assistant.env@utoronto.ca](mailto:dir.assistant.env@utoronto.ca) or 416-978-6526.

### Environmental Career Day

Environmental Career Day is an annual event organized by the School of the Environment in conjunction with the Graduate Environmental Students Association (GESA), the Toronto Undergraduate Geography Society (TUGS) and the Environmental Students' Union (ENSU). The day-long event is open to all registered undergraduate and graduate university and community college students, and includes a career expo featuring many exhibitors from government, consulting and environmental non-governmental organizations. Students will gain exposure to many potential career, internship, volunteer and summer job opportunities. Throughout the day, speakers from various employment sectors will be presenting lectures and workshops on a diverse set of career-related topics. For additional information, please contact David Powell at [ug.office.env@utoronto.ca](mailto:ug.office.env@utoronto.ca) or 416-946-8100.

The School of the Environment holds many other special events throughout the year. Information on upcoming lectures, workshops, conferences, symposia and other programming may be found at <https://www.environment.utoronto.ca/events/>.

## Resources for Student Support

The University of Toronto is a big place, but provides an incredible wealth of resources to support your learning, and your experience as a student. We encourage you to take full advantage of those resources. If you need any assistance in navigating the University or addressing any problems you experience at the University, please do not hesitate to contact the Graduate Administrator or the Graduate Academic Director.

### Student Life at UofT

This is your portal and gateway to UofT's fantastic resources in areas such as health and wellness, academic skills, connecting with peers, recreational facilities on campus, work-life balance, health and safety, accessibility and much more:

<http://www.studentlife.utoronto.ca>

### Centre for International Experience

CIE supports international students at UofT and promotes the value of international experience and cross-cultural exchange for all students

<http://www.studentlife.utoronto.ca/cie>

### Graduate Professional Skills Program

Develop skills in project management, communication and personal development

<https://www.sgs.utoronto.ca/currentstudents/Pages/Professional-Development.aspx>

### Teaching Assistants Training Program

The Teaching Assistants' Training Program (TATP) is a peer-training program providing pedagogical support to the three campuses of the University of Toronto, through the Centre for Teaching Support & Innovation. TATP currently serves teaching assistants and graduate students; programming is available for students currently enrolled in the School of Graduate Studies (SGS), regardless of teaching appointment, and members of CUPE Local 3902 Unit 1.

<http://tatp.utoronto.ca/>

### Community Engaged Learning

“Community-engaged learning is just what it sounds like: learning that engages the community. In practice this means that in addition to coursework – or completely outside of the classroom – students spend some time getting involved with a local community organization and contributing to their efforts. Typically, there is also training and reflection so that students get the most out of the experience. There are two basic types of community-engaged learning (aka CEL): academic and co-curricular. Academic community-engaged learning is course-based and can earn you credit in your academic program, while co-curricular community-engaged learning happens outside of the classroom and is open to students of any academic background.”

<http://www.studentlife.utoronto.ca/ccp/community-engaged-learning>

### University of Toronto Graduate Students' Union (GSU)

“The Graduate Students' Union at the University of Toronto represents over 15,000 students studying in over 85 departments. For many years this union has advocated for increased student representation, funding, and provided services such as health insurance, confidential advice, and a voice for the graduate student body on the various committees of the University. This section describes how the Union is organized, what we do, and how you can become involved. The best way for your Union to represent you, is to have your voice heard.”

<https://www.utgsu.ca/>

### School of Graduate Studies (SGS)

“The mission of the School of Graduate Studies is to promote University-wide excellence in graduate education and research and to ensure consistency and high standards across the divisions. Sharing responsibility for graduate studies with graduate units and divisions, and operating through a system of collegial governance, consultation, and decanal leadership, we define and administer University-wide regulations for graduate education.”

<https://www.sgs.utoronto.ca/Pages/default.aspx>

### The U of T Career Centre

The CLN provides career education and employment services to students and recent graduates.

<http://www.studentlife.utoronto.ca/cc>

### The Graduate Student Wellness Portal

The School of Graduate Studies has a new wellness portal to assist students, who are seeking mental health services, resources, and/or advice regarding academic life

(<http://www.sgs.utoronto.ca/currentstudents/Pages/wellness-portal.aspx>). As part of this initiative, a helpline is available 24/7 to graduate students in need (1-866-925-5454 or “Good2Talk”).

## Environment Resources on Campus

### School of the Environment Research

<https://www.environment.utoronto.ca/research/>

This section of the School website provides an overview of the School's research activities and topics currently being explored by faculty, graduate and undergraduate students.

### University of Toronto Environmental Resource Network (UTERN)

UTERN is the University of Toronto's Environmental Resource Network, an umbrella organization that serves as the meeting point for everyone in the university community concerned about the health of our environment. UTERN receives a 50-cent levy from all undergraduate students totaling more than twenty thousand dollars, almost all of which is available to fund student-run environmental projects at U of T.

[utern.admin@utoronto.ca](mailto:utern.admin@utoronto.ca)

<http://utern.org/>

### UofT Sustainability Office

<http://www.fs.utoronto.ca/SustainabilityOffice/>

The University of Toronto Sustainability Office exists to reduce the environmental impact of operations on campus by bridging sustainability research and institutional practices. Through the Office, students, staff, and faculty are engaged in contributing towards a sustainable campus.

### Jane Goodall Institute

<http://www.janegoodall.ca>

The School is pleased to be partnering with the Jane Goodall Institute of Canada (JGI), a major, international non-profit organization dedicated to wildlife research, environmental education and the conservation and welfare of all species while encouraging social change within the developing world. The new partnership, announced in January 2007, relocated JGI's national office to the University of Toronto and includes collaborations on teaching and research, guest speakers on JGI's conservation programs in Africa and opportunities for University of Toronto students to participate in JGI's programs at the University as well as abroad.

### UofT Libraries

<http://www.library.utoronto.ca/gerstein/>

The Gerstein Science Information Centre at the University of Toronto is the largest medical and science research collection in Canada. Gerstein has also a strong print and electronic collection of reference sources in the science and health science disciplines.

<https://earth.library.utoronto.ca/>

The Noranda Earth Science Library offers a collection of research reports and reference materials of special interest to researchers in sustainable development, applied ecology, global climate change, environmental science, monitoring and impact assessment, water resources and limnology (including extensive holdings on the Great Lakes).

### EnviroNews and Past Events

<https://www.environment.utoronto.ca/news-events/past-events/>

This is an archive of the Environews and past events the School held up to 2018. Up-to-date news and events can be found on our website at:

<https://www.environment.utoronto.ca/news-events/>

This list is not exhaustive, but serves as a starting point for discovering environment related resources at UofT.

## Course List

The School of the Environment offers individual credit courses that are open to graduate students from all parts of the University, subject to enrolment limits. Please note that with the exception of the core course, not all courses are offered every year. Graduate students enrolled in the Environmental Studies Collaborative Specialization are also allowed to take elective courses listed under the Environment and Health Collaborative Specialization to fulfill their Environmental Studies Collaborative Specialization requirements (these are listed under Environment and Health Collaborative Specialization courses in this handbook below). For a current graduate course listing, please refer to the School of the Environment website at <https://www.environment.utoronto.ca/graduate/courses/>.

### Environmental Studies

#### **ENV 1001H - Environmental Decision Making (Core Course)**

For the purpose of this course, environmental decision-making is defined as:

- 1) selection from a set of alternatives of an action intended to protect the environment or to achieve another purpose but which has implications for ecological well-being and;
- 2) the implementation of that decision. The course subject includes environmental decisions made by individuals, business firms, NGOs and governments, both policy and regulatory approvals decisions, as well as decisions regarding program design, domestically and at the international scale. Throughout the course we examine prescriptive models for how environmental decision-making could or should be done, and ways in which environmental decision-making is done, influenced by such things as interest and power.

#### **ENV 1002H - Environmental Policy**

The course will examine the ways in which governments at the local, state/provincial, national and international levels develop and implement environmental policy. The focus will be upon Canada but other jurisdictions will also be examined. Environmental policy is seen as a sub-set of the larger subject of public policy. The course will briefly examine policy in general and then the following aspects of environmental policy: specific factors which differentiate it from other policy fields, the influence of ideas and institutions on environmental policy-making state and non-state actors, the environmental policy process and policy instruments, Canadian federalism, and international environmental policy.

#### **ENV 1004H - Urban Sustainability and Ecological Technology**

Ecological technology, in a limited sense, encompasses those technologies that incorporate ecosystems to replace mechanical or non-living components in a machine or a piece of infrastructure. These technologies might include green roofs, green walls and living machines. As cities grow and as densities increase, green space often decreases, leading to a number of consequences, some expected and some unexpected.

Can ecological technologies replace the green spaces, in terms of area and function, within a city? Can these technologies be used as adaptation strategies to climate change? Are there unexpected consequences that would reduce sustainability? By expanding the definition of ecological technology to include design according to ecological principles (whether the design is for a particular machine, a building, a community or even a city), the discussion of urban sustainability

expands to include economics, geography, sociology, psychology, engineering, architecture and urban planning.

**ENV 1005H - Business and Environmental Politics**

The subject of this course is the role played by business in the development and implementation of environmental policy at the international and domestic levels. Although other countries are examined, the primary subject is the role of business within Canadian policy. The term "business" includes all sectors and levels of analysis but the primary focus is upon the individual resource or manufacturing corporation interacting with environmental regulators.

**ENV 1008H - Worldviews and Ecology**

This course adopts an in-depth examination of diverse ecological worldviews in the context of the present environmental situation. The course provides critical, interdisciplinary analyses of various cosmologies, of both secular and religious varieties, as a means for contemplating questions of nature/human relations. Course materials encompass readings on a broad range of cultures as well as a variety of religious approaches to environmental issues.

**ENV 1103H – The UofT Campus as a Living Lab of Sustainability**

Sustainability is a growing priority for universities all over the world. Many are developing strong operational sustainability goals and targets, and are giving increasing emphasis to teaching and research on sustainability issues. Yet few have committed at the executive level to integrating academic and operational sustainability in the context of treating their campus as a living laboratory of sustainable practice, research and teaching. Arguably, it is such living lab approaches that offer the largest potential for universities to play a significant role in the sustainability transition. This course will explore and apply the living lab concept, in the context of operational sustainability at the University of Toronto. We will begin by looking briefly at the literature on university sustainability and the living lab concept. The bulk of the course will involve undertaking an applied research project on some aspect of campus sustainability, working in close partnership with operational staff at the University of Toronto. Students will develop the skills needed to work across disciplines and fields of study, and with non-academic partners.

**ENV 1444H - Capitalist Nature**

This course will draw on a range of theoretical and research materials in order to examine the particularities of what might be referred to as “capitalist nature”. Specifically, the course is concerned with three central questions:

What are the unique political, ecological, and geographical dynamics of environmental change under capitalism?

How and why is nature commodified, and what are the problems and contradictions associated with this project?

How can we understand the main theories and approaches underpinning contemporary environmental regulation and policy in an age of increasingly globalized capitalism?

### **ENV 1701H - Environmental Law**

Law is a key instrument in environmental management. What is the general framework which governs the Canadian environment? What are the values, assumptions, and guiding principles which underlie this framework? Are there alternative models for regulation? How does the Canadian model compare to other models? This course will address these questions with the intention of giving students a basic understanding of regulatory policies in Canada governing the environment and the use and allocation of natural resources.

### **ENV 1707H - Environmental Finance and Sustainable Investing**

Environmental finance and sustainable investing are fast-emerging fields which involve the application of new and established financial market instruments and practices to the management of environmental issues, and the incorporation of environmental, social and governance (ESG) factors into asset management. Pension funds, banks, insurance companies, venture capitalists, financial services companies and governments are becoming increasingly engaged on the topic in order to manage risks and capitalize on new opportunities. This course explores the growing materiality of ESG factors on the bottom line financials of firms using real case examples of how these firms have responded to this relatively new strategic discipline, and how students of this subject can apply this knowledge to their own career development. An in-depth knowledge of financial markets is not required.

### **ENV 2000H - Individual Reading and Research Course in Environmental Studies**

A course delivered by a Graduate Faculty Member for an individual student, on a topic related to the student's graduate program. Such a course is equivalent in terms of reading, organized academic activities and written assignments to a regular graduate course. Approval to enroll in this course is given by the graduate unit in which the student is registered and approval from the unit offering the course also is required. The graduate unit offering the course is responsible for entering a subtitle in the course offering that will appear on the student's academic record. Before registering for this course, students will write a proposal to the School of the Environment's Graduate Associate Director, including the name of the instructor who has agreed to supervise this course.

### **ENV 2002H - Special Topics in Environment**

A Special Topics course varies from a regular course in that the content may vary from offering to offering.

### **ENV 4444Y+ - Internship**

Students who pursue a non-thesis degree are required to do an internship. Students must fill out the SCHOOL Internship Placement Form and submit it to the School of the Environment Graduate Student Advisor before starting their internship. Please refer to the Internship Guidelines page in this manual for more information.

### **ENV 5555Y+ - Research Paper**

Environmental Studies students who do not have a home departmental alphanumeric code for their research papers will use this code. A final electronic copy of the research paper must be submitted

to the SCHOOL Graduate Student Advisor. Please refer to the Research Paper and Thesis Guidelines section of this manual for detailed description of research paper recommendations.

*+ Extended course. For academic reasons, coursework is extended into session following academic session in which course is offered.*

### Elective Joint and Cross-Listed Courses

The School of the Environment also offers a number of joint and cross-listed courses administered and taught by our participating graduate degree granting departments. Please note that not all courses are offered every year. For course descriptions and outlines, please visit our Graduate webpage at: <https://www.environment.utoronto.ca/graduate/courses/>

### Elective Joint Courses with the School of the Environment

#### **JGE 1413H Workshop in Environmental Impact Assessment**

Lectures and workshops examine the major methodologies and techniques used in environmental impact assessment and allow the student to apply these to relevant planning situations. This course will provide an introductory overview of the theory and practice of environmental assessment and then move on to more advanced topics. Environmental assessment is a procedure that examines the positive and negative environmental implications of proposed projects, policies, programs or plans. Assessment of projects is typically referred to as environmental assessment (EA) or environmental impact assessment (EIA) while assessment of policies, programs or plans is referred to as strategic environmental assessment (SEA). EA seeks to identify ways to avoid or mitigate negative effects and involves continued monitoring and assessment of effects after a project has been constructed or after a policy/plan/program has been implemented.

#### **JGE 1420H Urban Waste Management: an International Perspective**

The course presents an overview of urban waste management practices in developing urban areas, with comparative reference to Northern cities. The emphasis of the course is on the linkages among the technical, social, economic and political aspects of solid waste management. The main examples will come from Asia and Canada. Aspects of solid waste management planning to be covered in the course include: identification of waste problems (social, technical and managerial), development of alternative waste management strategies (including source reduction, reuse, recycling, composting, incineration and landfilling), and factors (social, economic, political and technical) contributing to the success of such strategies

#### **JGE 1425H Livelihoods, Poverty, and Environment in the Developing Countries**

The livelihoods of the rural (and in some cases the urban) poor in the developing world are closely connected to the environment. Hundreds of millions of people, including many indigenous and other traditional peoples, rely directly upon natural resources, at least in part, for their subsistence and often, also, for market income. For many of them, access to such resources is a matter of survival-of life or death, a way of life, or the hope for a better future for them or for their children. Although the livelihoods of these peoples are sometimes regarded as having a negative impact on the environment, more recently, many of them are being heralded as models for biodiversity

conservation and sustainable resource. A better understanding of how the rural (and urban) poor make a living -their livelihoods- is considered key to addressing issues of poverty and sustainable resource use, and also for environmental change mitigation and adaptation. This course seeks to develop an understanding of livelihoods among the poor in developing countries, with a focus on how assets, social relations and institutions shape livelihood opportunities in the present and into the future. More broadly, attention will be paid to the ways in which livelihoods are connected to the environment, but also to economic and political processes, with an eye to gain insight on their potential for poverty alleviation, sustainable resource use, and environmental change mitigation/adaptation. The course will also explore emerging areas of inquiry in livelihoods research.

### **JSE 1708H The Development of Sustainability Thought**

This course will examine how attitudes towards human nature and non-human nature have changed over the period from Mesolithic times until the present in Western society. By reading and discussing historical arguments and contemporary documents we will attempt to uncover the underlying assumptions about the world that were characteristic of different periods in the history of Western culture. The underlying question is whether contemporary concerns about sustainability require fundamental changes in the way we conceive of ourselves and our environment.

### Other Elective Courses

#### Adult Education & Community Development (LHAE)

- LHA 1104H Community Education and Organizing
- LHA 1160H Introduction to Transformative Learning Studies
- LHA 1193H Adult Education for Sustainability
- LHA 5100H Special Topics in Adult Education and Community Development: Master's level
- LHA 6100H Special Topics in Adult Education and Community Development: Doctoral level

#### Anthropology

- ANT 6018H Theories of Nature and Society

#### Chemical Engineering and Applied Chemistry

- CHE 1435H Fundamentals of Aerosol Physics and Chemistry
- CHE 2504H Industrial Pollution Prevention
- JNC 2503H Environmental Pathways

#### Chemistry

- CHM 1401H Transport and Fate of Chemical Species in the Environment
- CHM 1404H Molecular Analysis of Natural Systems
- CHM 1410H Analytical Environmental Chemistry
- CHM 1415H Topics in Atmospheric Chemistry
- CHM 1420H Environmental Chemistry of Soil
- CHM 1425H Modelling the Fate of Organic Chemicals in the Environment

Computer Science

CSC 2720H Systems Thinking for Global Problems

Forestry

FOR 1270H Forest Biomaterial Sciences

FOR 1288H Design & Manufacturing of Biomaterials

FOR 1294H Bioenergy and Biorefinery Technology

FOR 1416H Forest Fire Danger Rating

FOR 1555H Wildlife Ecology & Conservation

FOR 1575H Urban Forest Conservation

JFG 1610H Sustainable Forest Management and Certification

Geography and Planning

GGR 1216H Advanced Biogeochemical Processes

GGR 1404H Issues in Global Warming

GGR 1406H Energy Supply and Use

GGR 1407H Efficient Use of Energy

GGR 1408H Carbon-Free Energy

JGE 1413H Workshop in Environmental Impact Assessment

JPG 1402H Environment and Development

JPG 1403H Political Ecology of African Environments

JPG 1410H Institutional and Organizational Ecology

JPG 1415H Global Environmental Justice and Social Movements

JPG 1419H Aboriginal/Canadian Relations in Environment and Resource Management

JPG 1518H Sustainability and Urban Communities

PLA 1601H Environmental Planning and Policy

Global Affairs

JSE 1708H The Development of Sustainability Thought

Institute for the History and Philosophy of Science and Technology

HPS 4106H Technology, Environment, and History

Information

INF 2125H Information and Culture in a Global Context

Management

RSM 2014H Multi-Disciplinary Special Topics: Sustainability Strategy (this course will be allowed as an elective provided it has environmental studies content)

Mechanical and Industrial Engineering

MIE 1120H Current Energy Infrastructure and Resources

Physics

PHY 1498H Introduction to Atmospheric Physics

PHY 2502H Climate System Dynamics

PHY 2504H Atmospheric Dynamics

PHY 2505H Atmospheric Radiative Transfer and Remote Sounding

PHY 2506H Data Assimilation and Retrieval Theory

Political Science

POL 2213H Global Environmental Politics

Social Justice Education

SJE 1909H Environmental Sustainability and Social Justice 1

SJE 1919H Environmental Sustainability and Social Justice 2

SJE 2999H Special Topics in Sociological Research in Education (this course will be allowed as an elective provided it has environmental studies content)

## Environment and Health Courses

The School of the Environment offers individual credit courses that are open to graduate students from all parts of the University, subject to enrolment limits. Please note that with the exception of the core course, not all courses are offered every year. Graduate students enrolled in the Environment and Health Collaborative Specialization are also allowed to take elective courses listed under the Environmental Studies Collaborative Specialization in fulfillment of their Environment and Health Collaborative Specialization requirements (these are listed under Environmental Studies Collaborative Specialization in this handbook). For a current graduate course listing, please refer to the School of the Environment website at <https://www.environment.utoronto.ca/graduate/courses/>.

### **ENV 4001H - Graduate Seminar in Environment and Health (Core Course)**

This course addresses the need for innovative approaches to the study of the complex relationships between the environment and human health. The understanding, diagnosis, treatment and potential prevention of the adverse health effects of environmental contaminants, as well as their role in the development of disease, requires a convergence of disciplines. The course will create an academic opportunity for students to participate in exchanges of ideas by bringing together faculty and experts from a wide spectrum of disciplines with a common interest in the impact of the environment on health and disease. It will provide an introduction to methods and concepts from other disciplines, and will encourage students to integrate their work into a broader context and perspective related to environment and health.

### **ENV 1703H - Water Resource Management**

This course will focus on water resource management strategies and policy. Topics include assessing water resources, urban water supply/demand efficiency in the use and re-use of water, water quality management, floods, public participation in water resource decisions, institutional arrangements, water supply in developing countries, and evaluation of alternatives. Great Lakes issues will be used as a focus of discussion where appropriate.

### **ENV 1704H - Environment Risk Analysis**

General concepts of risk analysis and management will be introduced in a framework that will include risk identification, estimation, evaluation, management, and emergency planning. These will be illustrated by their application to natural hazards, climate change, medical risks, occupational health, contaminated industrial lands, banking and insurance.

### **ENV 3000H – Special Topics in Environment and Health**

A Special Topics course varies from a regular course in that the content may vary from offering to offering.

### **ENV 4002H - Environment and Health of Vulnerable Populations**

The seminar will introduce students to a wide range of topics and issues as they relate to the environment and its effect on the health of vulnerable populations. Through readings and discussion, students will explore the potential health effects of exposures in children and other

vulnerable populations to a variety of chemical and physical agents in both the indoor and outdoor environments. A number of case studies or topics will be examined to exemplify why certain populations may be especially vulnerable to various environmental hazards. Topics for discussion will be chosen to demonstrate the wide range of potential human health effects due to chemical and other exposures. This course will critically examine policy instruments and tools in place to protect the health of vulnerable populations, as well as issues related to equity and justice.

### Elective Joint and Cross-Listed Courses

The School of the Environment also offers a number of joint and cross-listed courses administered and taught by our participating graduate degree granting departments. Please note that not all courses are offered every year. For course descriptions and outlines, please visit our Graduate webpage at: <https://www.environment.utoronto.ca/graduate/courses/>

### Elective Joint Courses with the School of the Environment

#### **JGE 1425H Livelihoods, Poverty, and Environment in the Developing Countries**

The livelihoods of the rural (and in some cases the urban) poor in the developing world are closely connected to the environment. Hundreds of millions of people, including many indigenous and other traditional peoples, rely directly upon natural resources, at least in part, for their subsistence and often, also, for market income. For many of them, access to such resources is a matter of survival-of life or death, a way of life, or the hope for a better future for them or for their children. Although the livelihoods of these peoples are sometimes regarded as having a negative impact on the environment, more recently, many of them are being heralded as models for biodiversity conservation and sustainable resource. A better understanding of how the rural (and urban) poor make a living -their livelihoods- is considered key to addressing issues of poverty and sustainable resource use, and also for environmental change mitigation and adaptation. This course seeks to develop an understanding of livelihoods among the poor in developing countries, with a focus on how assets, social relations and institutions shape livelihood opportunities in the present and into the future. More broadly, attention will be paid to the ways in which livelihoods are connected to the environment, but also to economic and political processes, with an eye to gain insight on their potential for poverty alleviation, sustainable resource use, and environmental change mitigation/adaptation. The course will also explore emerging areas of inquiry in livelihoods research.

#### **JNC 2503H Environmental Pathways**

The course is jointly offered by the Institute of Environment Studies and the Department of Chemical Engineering and Applied Chemistry. It deals with the behavior of chemicals, such as persistent organic pollutants (POPs), in the natural environment. We treat the natural environment as multimedia systems consisting of various compartments such as air, water, soil and biota. We apply chemical engineering principles such as transport phenomena and quantify the behavior of pollutants. Our goal is to convey an appreciation of the source, fate and effect of pollutants in the environment by analyzing various processes of transport and transformation of pollutants. Quantitative expressions of these processes are established for the evaluative environment-a much

simplified representation of the real environment. The concept of fugacity is introduced as a simple and yet powerful tool for formulating various processes. Specific topics include "environmental chemicals", "multimedia partitioning", "intermedia transport", "environmental loss mechanisms" and "fugacity models".

#### **JNP 1014Y Interdisciplinary Toxicology**

A survey course examining several contemporary topics in toxicology with emphasis on human/mammalian toxicology. Topics covered in the course may include: adverse drug reactions, acute poisonings, natural toxins, maternal-fetal toxicology, forensic toxicology, environmental chemistry, pesticides, dioxins, endocrine disruptors, regulatory toxicology, occupational toxicology, food toxicology, herbal products, alcohol, smoking, and drugs of abuse. Students are evaluated by their performance on written tests and assignments.

#### **JNP 1016H Graduate Seminar in Toxicology**

This course is a seminar-based course in which students critique scientific papers in the area of toxicology. Students are evaluated by oral and written critiques of the scientific literature and by their participation in class discussions.

#### Other Elective Courses

##### Adult Education and Community Development (Department of Leadership, Higher and Adult Education)

LHA 1197H	The Pedagogy of Food
-----------	----------------------

##### Chemical Engineering and Applied Chemistry

CHE 1435H	Fundamentals of Aerosol Physics and Chemistry
CHE 2504H	Environmental Pollution Prevention
JNC 2503H	Environmental Pathways

##### Chemistry

CHM 1401H	Transport and Fate of Chemical Species in the Environment
CHM 1410H	Analytical Environmental Chemistry
CHM 1415H	Atmospheric Chemistry
CHM 1420H	Environmental Chemistry of Soil
CHM 1425H	Modelling the Fate of Organic Chemicals in the Environment

##### Civil and Mineral Engineering

CIV 1399H	Special Studies in Civil Engineering (this course will be allowed as an elective provided it has environment and health content)
-----------	--

**Earth Sciences**

ESS 1463H	Contaminants in the Environment
-----------	---------------------------------

**Forestry**

FOR 1575H	Urban Forest Conservation
-----------	---------------------------

**Geography and Planning**

JGE 1425H	Livelihoods, Poverty, and Environment in the Developing Countries
JPG 1402H	Environment and Development
JPG 1403H	Political Ecology of African Environments
JPG 1421H	Health in Urban Environments

**Pharmacology and Toxicology**

JNP 1014Y	Interdisciplinary Toxicology
JNP 1016H	Graduate Seminar in Toxicology

**Public Health Sciences**

CHL 5112H	Community Development in Health
CHL 5126H	Building Community Resilience (online course)
CHL 5413H	Public Health Sanitation
CHL 5416H	Environmental Epidemiology
CHL 5809H	Ecological Public Health
CHL 5903H	Environmental Health
CHL 5910H	Occupational and Environmental Hygiene I
CHL 5911H	Occupational and Environmental Hygiene II
CHL 7001H	Directed Reading
CHL 8001H	Selected Topics in Public Health Issues (this course will be allowed as an elective provided it has environmental studies content)

**Social Justice Education**

SJE 1909H	Environmental Sustainability and Social Justice 1
SJE 1919H	Environmental Sustainability and Social Justice 2
SJE 2999H	Special Topics in Sociological Research in Education