



UNIVERSITY OF  
SASKATCHEWAN

School of Environment  
and Sustainability

# Graduate Handbook

*2011-2012*

The information in this handbook was accurate at the time of printing (August 2011).

Any changes made to this information will be communicated to the  
SENS community via e-mail and the SENS website.

*Photographs by Sarah Turkeli.*

*School of Environment and Sustainability*  
**Graduate Handbook**  
*2011-2012*



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## The School of Environment and Sustainability

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Founded in July 2007, the School of Environment and Sustainability (SENS) offers three graduate degree programs which are interdisciplinary in learning and research. They emphasize the complex nature of environmental and sustainability challenges, and the need for interdisciplinary understandings across a range of topics. Depending on their program, students at SENS have the opportunity to develop applied knowledge, conduct in-depth interdisciplinary research to advance the study of environment and sustainability, or to participate in critical appraisal, research analysis and synthesis, and knowledge generation and translation, while advancing the understanding of environment and sustainability as an academic field of study.

This handbook contains information about policies and procedures governing the SENS graduate programs. While the School has worked to ensure that its procedures adhere to the standards of the College of Graduate Studies and Research (CGSR) at the University of Saskatchewan, should the information in this handbook conflict with CGSR procedures, faculty, staff, and students should contact the School's Graduate Chair to resolve the conflict.

### A Message from the Executive Director

It is my distinct pleasure to welcome you to the School of Environment and Sustainability at the University of Saskatchewan. One of the newest academic units on campus (founded in 2007, with its first classes offered in 2008), the School offers unique, interdisciplinary graduate programming to prepare students for careers as leaders, managers, advisors, researchers, and academics in the broad field of environment and sustainability.

The School's faculty complement continues to grow, with faculty coming to the School from such diverse backgrounds as Geography and Planning, History, Biology, Environmental Toxicology, Soil Science, Engineering, Education, and Law. With the broad array of expertise that the faculty bring to the School, students will have the opportunity to explore their research interests in many different areas of environment and sustainability, while learning more about those areas which may not be so familiar to them. The School's interdisciplinary course offerings, which also continue to grow, are intended to provide students with an understanding of diverse aspects of environment and sustainability, including basic ecological principles; human interactions with the environment; biodiversity conservation; planning, decision-making and project management; data analysis and management; and, environmental governance. Additional electives, including new courses offered for the first time in 2011-12, are also available. We will also be changing our course delivery format in Term 2 of the 2011-12 academic year, moving to a compressed format where courses are offered sequentially, rather than concurrently. This means that students will be able to focus on one course at a time, and that they may be able to complete their course work more quickly.

Students play a key role in the School community. The School will offer numerous venues for students to interact with faculty and staff, and your ideas and contributions are not just welcomed, but encouraged. Should you have questions regarding any aspect of your graduate program, please contact the School's Graduate Secretary, Irene Schwalm, ([irene.schwalm@usask.ca](mailto:irene.schwalm@usask.ca) or 966-1985), who will always be more than pleased to assist you. I also encourage you to become involved with the School of Environment and Sustainability Students' Association, which is another way that SENS students can engage with the School and its faculty, and influence the activities and priorities of the School.

I wish you success in your academic pursuits at the School of Environment and Sustainability, and hope that you find your time here to be both rewarding and challenging, providing a period of stimulating personal and professional growth.

Best wishes for success.

Karsten Liber, Ph.D.  
Executive Director

## A Message from the Graduate Chair

Welcome to the School of Environment and Sustainability at the University of Saskatchewan. In our first few years, SENS has seen dramatic growth in many aspects of its programs. While growth is good, everyone in the School knows we need to consider the nature of that growth. All of the indicators reveal an increasingly innovative, productive and inspiring SENS. You are joining a group of students that continue to impress with their ideas, enthusiasm and willingness to exchange perspectives on all things related to the environment. The programs, including course offerings and research programs, are steadily being improved to address dynamic environmental issues and challenges. The collaboration and interaction that develops between the SENS faculty and students has established an excellent interdisciplinary foundation to investigate and understand the interactions between humans and the environment, and to foster sustainable systems. I look forward to meeting all of the new graduate students and seeing the innovative and exciting approaches to sustainability that emerge from course work, seminars, research and other SENS activities.

Ken Belcher, Ph.D.  
Graduate Chair

## Vision, Mission, and Core Values

**Vision:** We will create and integrate multiple understandings of natural and human environments and be internationally known for innovative, provocative, and wide-ranging approaches to environmental sustainability.

**Mission:** We enable sustainable communities and environments through collaborative research and teaching, graduate student engagement, and community involvement. We broaden understanding and develop champions of environmental sustainability by creating, exchanging, and translating knowledge using diverse perspectives.

**Core Values:** As a School, we value:

- Scholarly dialogue and debate regarding environment and sustainability
- Interdisciplinary and transdisciplinary scholarship
- Innovation and academic excellence among students and faculty
- Student growth and success
- Systems and holistic approaches to environmental sustainability
- Working on a variety of spatial and temporal scales
- Collaboration in teaching, research, and engagement
- Consultative and cooperative decision-making
- Respectful and substantive engagement with wide communities
- Inclusion of different ways of knowing
- Supporting sustainable and healthy communities and environments
- Making a difference through public discourse, deliberative processes, and informed citizenship
- Leading by example through attention to our own environmental footprint

## Overview

The School of Environment and Sustainability offers three innovative graduate programs:

- The interdisciplinary **Master of Sustainable Environmental Management (M.SEM.)** program is for prospective or current practitioners in government, industry, consultancies, or non-governmental organizations wishing to enhance their knowledge of applied environmental and sustainability issues. SENS provides a stimulating, interdisciplinary learning environment and requires successful completion of graduate courses and a practical project. (24 credit units of course work and a 6 credit unit project)

*Examples of 2010-11 M.SEM. Research Projects:*

- Agricultural Pesticide Use and Changes in the Abundance of Grassland Birds in the Prairies
  - Human-Polar Bear Interactions in Wapusk National Park and Greater Wapusk Ecosystem
  - Preventative Measures: To What Extent Was the Evolution of Environmental Thought in North America a Sociocultural Expression of the Precautionary Principle
  - Valuing Urban Wetlands: A Municipal Policy Analysis
  - Greenscapades: The Future of Environmental Expertise and Local Food Security
- The thesis-based **Master of Environment and Sustainability** (M.E.S.) program enables students to advance the study of environmental and sustainability issues, preparing them for significant roles in knowledge generation and translation. This program is designed for those who wish to conduct in-depth interdisciplinary research with SENS' expert faculty. (Minimum: 12 credit units of course work plus a thesis)

*Examples of M.E.S. Thesis Research:*

- Adaptive Governance for Fire Management Planning: A Case Study on Prince Albert National Park, Saskatchewan
  - Regional Strategic Environmental Assessment Roles and Stakes in Arctic Oil and Gas Development
  - Cross-Border Dimensions of Vuntut Gwich'in Food Security
  - Examining the Impact of India's Revised Forestry Act on the Tribal Peoples of Rajasthan, India
- The **Doctor of Philosophy in Environment and Sustainability** (Ph.D.) program prepares interdisciplinary scholars for leadership roles in advancing the understanding of environment and sustainability as a field of academic study. Doctoral students participate in critical appraisal, research analysis and synthesis, and knowledge generation and translation. (Minimum: 6 credit units of course work plus dissertation)

*Examples of Ph.D. Dissertation Research:*

- Recovery of Saskatchewan's Grassland Songbirds at Risk: Linking Ranchers, Range Health and Grassland Songbird Abundance
- A Performance-Based Approach to Agri-Environmental Policy
- Exploring Indigenous Knowledge in a Junior Farmer Field and Life Skills School in Malawi

## The University of Saskatchewan

Established in 1907 by an Act passed by the Legislative Assembly of the Province of Saskatchewan, the University of Saskatchewan is located on the South Saskatchewan River in the City of Saskatoon. The University's mission statement is: *The University of Saskatchewan belongs to the people of Saskatchewan. As an academic community, our mission is to achieve excellence in the scholarly activities of teaching, discovering, preserving and applying knowledge.*

The University of Saskatchewan is home to the following Colleges and Schools. Most of these offer programming at the Master's level, and many offer programming at the Ph.D. level. Programs leading to a Postgraduate Diploma are available in many areas.

- College of Agriculture and Bioresources
- College of Arts and Science
- College of Dentistry
- College of Education
- College of Engineering
- College of Graduate Studies and Research
- College of Kinesiology
- College of Law
- College of Medicine (including the School of Physical Therapy)
- College of Nursing
- College of Pharmacy and Nutrition
- Johnson-Shoyama Graduate School of Public Policy

- N. Murray Edwards School of Business
- School of Environment and Sustainability
- School of Public Health
- Western College of Veterinary Medicine

In 2010-2011, 16,590 students were enrolled in undergraduate programs at the University of Saskatchewan and 2,835 were enrolled in graduate studies. The student body included 1,863 international students and 1,722 students who self-declared Aboriginal ancestry.<sup>1</sup>

Other organizations with facilities at the University of Saskatchewan include Environment Canada, the National Research Council, the Saskatchewan Research Council, and Agriculture and Agri-Food Canada. The Canadian Light Source Synchrotron is also on campus. A research park, Innovation Place, is located north of the university.

## The Geographical Setting

Students new to the University of Saskatchewan or to Canada will have questions about aspects of student life not encompassed by academic programs. International applicants are advised to contact the International Student and Study Abroad Centre (306-966-4925 or iso@usask.ca) if they have further questions regarding travel, immigration, English language support, or student visas.

Saskatoon has a population of about 224,300 people.<sup>2</sup> Agricultural production, mining, food processing, and manufacturing form significant portions of the local economy. Scientific research conducted at the University of Saskatchewan is a vital part of the local economy.

## Climate

Saskatoon has four distinct seasons. Summer temperatures range from 20 to 35°C. Winter temperatures vary between 5 and -40°C. Saskatoon is one of Canada's sunniest cities, with sunshine in excess of 2,000 hours annually. The average annual precipitation is approximately 38 cm; one quarter of this is snow. The weather in Saskatoon can fluctuate widely over the course of a day or a week.

## Accommodation

Students have two options regarding accommodation in Saskatoon. On-campus residence is available, or students may find accommodation off-campus. Students who wish to live in University residence should apply well in advance of the start of their studies, as accommodation is not guaranteed.

For those students seeking assistance in securing off-campus accommodation, the University of Saskatchewan Students' Union has an online housing registry ([ussu.ca/housing/index.shtml](http://ussu.ca/housing/index.shtml)). A map of Saskatoon neighbourhoods ([www.saskatoon.ca/DEPARTMENTS/Corporate%20Services/Corporate%20Information%20Services/GIS/onlinemapping/Pages/iMap%20New.aspx](http://www.saskatoon.ca/DEPARTMENTS/Corporate%20Services/Corporate%20Information%20Services/GIS/onlinemapping/Pages/iMap%20New.aspx)) may assist students in their search. When deciding where to live, students should consider the cost and the distance from campus – winter can be long, and can be very cold at times. Students may wish to find rental units close to a bus route (Saskatoon Transit provides bus route information at [www.saskatoon.ca/DEPARTMENTS/Utility%20Services/Saskatoon%20Transit/Pages/Routes.aspx](http://www.saskatoon.ca/DEPARTMENTS/Utility%20Services/Saskatoon%20Transit/Pages/Routes.aspx)). City bus route maps may be obtained at the Information

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1 University of Saskatchewan. 2011. "Student Headcount." Available at [www.usask.ca/isa](http://www.usask.ca/isa). Website accessed July 7, 2011.

2 City of Saskatoon. 2011. "Quick Facts." <http://www.saskatoon.ca/QUICK%20FACTS/Pages/Quick%20Facts.aspx> Website accessed July 7, 2011.

Centre in Upper Place Riel. Students are advised to check bus times if they are planning to travel late at night or on the weekends, as these schedules differ from those on weekdays.

## Useful Links for New Students

The following websites provide more information on the University of Saskatchewan and life in Saskatoon.

University of Saskatchewan – College of Graduate Studies and Research – [www.usask.ca/cgsr/](http://www.usask.ca/cgsr/)

University of Saskatchewan – Disability Services for Students – [students.usask.ca/current/disability/](http://students.usask.ca/current/disability/)

University of Saskatchewan – International Student and Study Abroad Centre – [students.usask.ca/current/international/](http://students.usask.ca/current/international/)

University of Saskatchewan – Student Services – Information for New Students – [students.usask.ca/new/](http://students.usask.ca/new/)

University of Saskatchewan – Student Services – Housing and Residence – [explore.usask.ca/housing/](http://explore.usask.ca/housing/)

Tourism Saskatoon – [www.tourismsaskatoon.com/](http://www.tourismsaskatoon.com/)

Saskatoon Transit – [www.saskatoon.ca/DEPARTMENTS/Utility%20Services/Saskatoon%20Transit/Pages/default.aspx](http://www.saskatoon.ca/DEPARTMENTS/Utility%20Services/Saskatoon%20Transit/Pages/default.aspx)

Environment Canada – Saskatoon Weather – [weatheroffice.gc.ca/city/pages/sk-40\\_metric\\_e.html](http://weatheroffice.gc.ca/city/pages/sk-40_metric_e.html)

## Commitment to Equity

As outlined in the proposal to establish its graduate programs, the School of Environment and Sustainability fully supports the equity goals of the College of Graduate Studies and Research and the University of Saskatchewan. To address equity issues in the key areas of access, support, curriculum, research opportunities, methodology and pedagogy, the School of Environment and Sustainability makes the following commitments:

- The School's Graduate Chair will serve as Equity Advisor;
- The target for admission of women and men to the scholarship program will be 50% each;
- For Aboriginal students, the numbers in the graduate population are too small to target a specific percentage. The School will consider eligible for scholarship support all Canadian applicants from this group with a cumulative weighted average of 75% in the final two years of full-time undergraduate study (for the Master of Environment and Sustainability program) or during their Master's program (for the Doctor of Philosophy in Environment and Sustainability program);
- The School recognizes that support should not merely be of a financial nature, but in addition, includes moral and social support. To enhance the feeling of belonging to the School and participation in the School's activities, various initiatives will be undertaken on an ongoing basis. These initiatives include, but are not limited to, an orientation process for new students, the nurturing of a graduate student association for the School, annual meetings of all graduate students with the Graduate Chair on issues of interest, inclusion of graduate student representatives on School committees, where appropriate, and inclusion of graduate students in School activities, as appropriate;
- Because role models are important in the decision to enter graduate studies, the School will take equity considerations into account in the appointment of faculty, research assistants, and teaching assistants. The School will endeavour to provide role models for designated groups whenever possible in its selection of invited speakers;
- The School's Admissions and Awards Committee will report on an annual basis, to the College of Graduate Studies and Research Employment and Education Equity Committee, the number of Aboriginal students, visible minorities, and women in its graduate programs and in its scholarship program. The Admissions and Awards Committee will also report regarding the influence of equity considerations on all scholarship awards;
- The School will endeavour to meet the special needs of any persons in designated groups, including alternate scheduling of classes, part-time or full-time status, time limits for program completion, and residency requirements; and,
- The Equity Advisor will advise the Admissions and Awards Committee of any special needs of students with disabilities who apply to or who are accepted into the graduate program.

## Faculty and Staff

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The School of Environment and Sustainability is overseen by an Executive Director. The School's core faculty hold either standard or primary-joint appointments directly with the School, or they hold secondary-joint appointments with the School, in which case their main affiliation is with another home department or college.

The School has two full-time staff and two staff who provide support for both the School and the Global Institute for Water Security.

### Administration and Staff

Karsten Liber	Executive Director	karsten.liber@usask.ca
Maureen Reed	Assistant Director – Academic	maureen.reed@usask.ca
Sharla Daviduik	Administrative Officer	sharla.daviduik@usask.ca
Twyla Rudovica	Financial Officer	twyla.rudovica@usask.ca
Meagan Hinthier	Communications Specialist	meagan.hinthier@usask.ca
Irene Schwalm	Graduate Secretary	irene.schwalm@usask.ca

### Faculty

MJ Barrett	School of Environment and Sustainability/Department of Curriculum Studies, College of Education	mj.barrett@usask.ca
Ken Belcher	Department of Bioresource Policy, Business and Economics, College of Agriculture and Bioresources/School of Environment and Sustainability	ken.belcher@usask.ca
Marie-Ann Bowden	College of Law/School of Environment and Sustainability	m.bowden@usask.ca
Doug Clark	School of Environment and Sustainability	d.clark@usask.ca
Geoff Cunfer	Department of History, College of Arts and Science/School of Environment and Sustainability	geoff.cunfer@usask.ca
Markus Hecker	School of Environment and Sustainability	markus.hecker@usask.ca
Andrew Ireson	School of Environment and Sustainability	andrew.ireson@usask.ca
Paul Jones	School of Environment and Sustainability	paul.jones@usask.ca
Vladimir Kricsfalusy	School of Environment and Sustainability	vladimir.k@usask.ca
Charles Maulé	Department of Chemical and Biological Engineering, College of Engineering/School of Environment and Sustainability	charles.maule@usask.ca
Marcia McKenzie	Department of Educational Foundations, College of Education/School of Environment and Sustainability	marcia.mckenzie@usask.ca
Christy Morrissey	Department of Biology, College of Arts and Science/School of Environment and Sustainability	christy.morrissey@usask.ca
Bram Noble	Department of Geography and Planning, College of Arts and Science/School of Environment and Sustainability	b.noble@usask.ca

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Maureen Reed	School of Environment and Sustainability/Department of Geography and Planning, College of Arts and Science	maureen.reed@usask.ca
Bing Si	Department of Soil Science, College of Agriculture and Bioresources/School of Environment and Sustainability	bing.si@usask.ca
Howard Wheeler	School of Environment and Sustainability/Department of Civil and Geological Engineering, College of Engineering	howard.wheeler@usask.ca

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## Administration and Staff

### **Karsten Liber (B.Sc., Guelph; Ph.D., Guelph)**

Dr. Liber was appointed Executive Director of the School of Environment and Sustainability in October 2009. He also provides Executive Oversight for the Toxicology Centre at the University of Saskatchewan. In his role as Executive Director, Dr. Liber oversees the day-to-day operations of the School, including collegial processes, human resources, governance, and administration. He played a key role in the development of the School's curriculum. An aquatic toxicologist, Dr. Liber's research interests include metal bioavailability and toxicity in aquatic ecosystems, and the impacts of mining and other industrial activities on these ecosystems.

### **Maureen Reed (B.Sc., Victoria; M.A., Toronto; Ph.D., Waterloo)**

Assistant Director – Academic and Professor in the School of Environment and Sustainability and the Department of Geography and Planning, College of Arts and Science, Dr. Reed was Special Advisor to the Vice-President Research regarding the establishment of the School during 2006-2007, and was the School's Acting Director during 2007-2008. Dr. Reed's research concerns community-based ecosystem management, sustainability of rural communities, environmental governance, gender-based analysis, national parks, biosphere reserves, and forestry communities. In 2011-2012, she will teach ENV5 898: Multi-level Environmental Governance.

### **Administrative Officer: Sharla Daviduik (B.Sc., Saskatchewan; MRM, Simon Fraser; EPT)**

Sharla Daviduik works closely with SENS Administration regarding overall planning for the School. Her responsibilities include policy and procedure development, and the coordination and monitoring of School initiatives and activities in areas such as administration, human resources, research, academic programs, service, and outreach.

### **Financial Officer: Twyla Rudovica (B.Comm., Saskatchewan, CMA)**

Twyla Rudovica is responsible for activities relating to the School's finances, including the monitoring of funds, development of budgets, and establishment of new funds. She serves as the School's liaison with Financial Services Division. She also serves as Financial Officer for the Global Institute for Water Security.

### **Communications Specialist: Meagan Hinthier (B.Sc., McGill)**

Meagan Hinthier oversees communications for the School of Environment and Sustainability and the Global Institute for Water Security. This includes websites, promotional materials, and advertising, as well as recruitment efforts and alumni engagement.

### **Graduate Secretary: Irene Schwalm (BAC, Saskatchewan)**

Irene Schwalm provides clerical support for the School's graduate programs. In this role, she works closely with the School's Graduate Chair and Admissions and Awards Committee, and ensures that policies and procedures are followed from application through to defence and convocation. She is the first point of contact in the School for students, the broader campus community, and the public.

## Faculty

### **MJ Barrett (B.A.S., Harvard; B.Ed., Queen's; M.E.S., York; Ph.D., Regina)**

MJ Barrett is Assistant Professor in the School of Environment and Sustainability and the Department of Curriculum Studies, College of Education. Her research interests include: human-land relations, epistemology, aboriginal education, ecofeminist ethics, qualitative research methodologies, arts-based inquiry, and outdoor/environmental education. Dr. Barrett teaches ENV5 811: Multiple Ways of Knowing in Environmental Decision-making and team-teaches ENV5 804: Decision-making for Environment and Sustainability.

### **Ken Belcher (B.S.A, Manitoba; M.N.R.M., Manitoba; Ph.D., Saskatchewan)**

Associate Professor Ken Belcher is jointly appointed between the Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources, and the School of Environment and Sustainability. He is the School's Graduate Chair. Dr. Belcher's research concerns ecological economics, resource and environmental economics, environmental policy, climate change, and wetland and wildlife conservation policy. He teaches the restricted elective course ENV5 898: Environmental Economics and Policy-Making.

### **Marie-Ann Bowden (B.A., Mount Allison; LL.B., Queen's; LL.M., Osgoode Hall)**

Marie-Ann Bowden is Professor in the College of Law and the School of Environment and Sustainability. Her research includes work regarding environmental law, water law, property law, and public interest advocacy, as well as environmental assessment law, and First Nations environmental and property law issues. She teaches ENV5 898: Legal Issues and the Environment.

### **Douglas Clark (B.Sc., Victoria; M.Sc., Alberta; Ph.D., Wilfrid Laurier)**

Dr. Clark is Centennial Chair in Human Dimensions of Environment and Sustainability and Assistant Professor in the School of Environment and Sustainability. His research interests include governance and policy processes for wildlife and ecosystem management and the interconnections between science and local and traditional ecological knowledge. Most of Dr. Clark's research is focused in the Canadian north. He team-teaches ENV5 804: Decision-making for Environment and Sustainability and ENV5 802: Human Dimensions of Environmental Change.

### **Geoff Cunfer (B.A., North Carolina; M.A., Texas Tech; Ph.D., Texas)**

An environmental historian, Geoff Cunfer is Associate Professor in the Department of History, College of Arts and Science, and the School of Environment and Sustainability. In addition to environmental history, his research interests include Great Plains history, United States history, historical geographic information systems, historical geography, and social metabolism.

### **Markus Hecker (Diploma (M.Sc. Equivalent), Hamburg; Ph.D., Hamburg)**

Associate Professor Markus Hecker is an ecologist whose research includes the investigation of the biological effects of environmental stressors, environmental risk assessment, the development and application of bioanalytical techniques to assess environmental pollution, aquatic ecology, and fish biology. He team-teaches ENV5 898: Environmental Assessment and Negotiation.

### **Andrew Ireson (M.Eng., Bath; M.Sc., Imperial College London; Ph.D., Imperial College London)**

Assistant Professor Andrew Ireson is affiliated with the Global Institute for Water Security, where he specializes in research concerning subsurface hydrology, including modelling flow and transport in the hydrological cycle, hydrological change in northern latitudes, and groundwater resource management. Dr. Ireson teaches ENV5 898: Introductory Numerical Modelling for Environmental Scientists, and team-teaches ENV5 805: Environmental Data Analysis and Management.

**Paul Jones (B.Sc., Otago; Ph.D., Otago)**

Associate Professor Paul Jones' research concerns analytical and environmental chemistry and toxicology, fate and effects of trace substances in aquatic and terrestrial ecosystems, aquatic and wildlife toxicology, and ecological risk assessment. He teaches ENV5 898: Chemicals in the Environment, and team-teaches ENV5 898: Environmental Assessment and Negotiation.

**Vladimir Kricsfalusy (M.Sc., Uzhgorod; Ph.D., Uzhgorod and Academy of Sciences of Ukraine)**

Associate Professor Vladimir Kricsfalusy teaches ENV5 898: Biodiversity Conservation and Sustainability and team-teaches ENV5 801: Ecosystem Science and Sustainability. A plant ecologist, Dr. Kricsfalusy's research concerns biodiversity conservation, terrestrial monitoring, ecological assessment, urban ecology (invasive plants, green roofs), and ethnobotany.

**Charles Maulé (B.Sc., British Columbia; M.Sc., Alberta; Ph.D., Alberta)**

Dr. Maulé is Professor in the Department of Chemical and Biological Engineering, College of Engineering and the School of Environment and Sustainability. His research concerns soil hydrology, evapo-transpiration, solute transport, drainage, semi-arid agricultural systems, land-soil conservation, erosion, reclamation, and soil-water conservation systems. He teaches the restricted elective course ENV5 831: Current Issues in Land Reclamation and Remediation.

**Marcia McKenzie (B.Sc., British Columbia; M.Ed., Brock; Ph.D., Simon Fraser)**

Dr. McKenzie is Assistant Professor, Department of Educational Foundations, College of Education and the School of Environment and Sustainability. Her research concerns youth culture and activism, place and environment, social justice, globalization, participatory forms of education and research, and media and technology. Dr. McKenzie team-teaches ENV5 802: Human Dimensions of Environmental Change.

**Christy Morrissey (B.Sc., British Columbia; Ph.D., Simon Fraser)**

Christy Morrissey is Assistant Professor in the Department of Biology, College of Arts and Science, and the School of Environment and Sustainability. Her research focuses on avian ecology and wildlife ecotoxicology, impact of endocrine-disrupting chemicals from sewage and industrial discharge to river birds, and nutrient and contaminant sources in the context of annual life cycles. She team teaches ENV5 801: Ecosystem Science and Sustainability.

**Bram Noble (B.A., Memorial; M.E.S., Wilfrid Laurier; Ph.D., Memorial)**

Professor in the Department of Geography and Planning, College of Arts and Science, and the School of Environment and Sustainability, Dr. Noble specializes in environmental assessment. His broader research interests include environmental planning and management, the implications of resource development, and environmental decision-making. Dr. Noble teaches ENV5 803: Research in Environment and Sustainability, a required course for MES students.

**Maureen Reed (B.Sc., Victoria; M.A., Toronto; Ph.D., Waterloo)**

Assistant Director – Academic and Professor in the School of Environment and Sustainability and the Department of Geography and Planning, College of Arts and Science, Dr. Reed was Special Advisor to the Vice-President Research regarding the establishment of the School during 2006-2007, and was the School's Acting Director during 2007-2008. Dr. Reed's research concerns community-based ecosystem management, sustainability of rural communities, environmental governance, gender-based analysis, national parks, biosphere reserves, and forestry communities. In 2011-2012, she will teach ENV5 898: Multi-level Environmental Governance.

**Bing Si (B.Sc., Hebei Agricultural; M.Sc., Hebei Agricultural; Ph.D., Guelph)**

Professor in the Department of Soil Science, College of Agriculture and Bioresources and the School of Environment and Sustainability, Dr. Si team-teaches the core course ENV5 805: Environmental Data Analysis and Management. His research interests include land reclamation, water and chemical transport in soils, geostatistics, soil physics, and ecohydrology.

**Howard Wheeler (M.A., Cambridge; Ph.D., Bristol)**

Canada Excellence Research Chair in Water Security and Professor in the School of Environment and Sustainability and the Department of Civil and Geological Engineering, College of Engineering, Dr. Wheeler is the Director of the Global Institute for Water Security. His research concerns hydrological processes and modelling, with applications to the management of flood risk, water resources, water quality, wastes and climate change adaptation.

## Associate Faculty

The School of Environment and Sustainability has twenty associate faculty members:

- Angela Bedard-Haughn, Department of Soil Science, College of Agriculture and Bioresources;
- Scott Bell, Department of Geography and Planning, College of Arts and Science;
- Lalita Bharadwaj, School of Public Health;
- Ryan Brook, Department of Animal and Poultry Science, College of Agriculture and Bioresources;
- Jill Gunn, Department of Geography and Planning, College of Arts and Science;
- Hayley Hesseln, Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources;
- Suren Kulshreshtha, Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources;
- Ted Leighton, Department of Veterinary Pathology, Western College of Veterinary Medicine;
- Yen-Han Lin, Department of Chemical Engineering, College of Engineering;
- David Natcher, Department of Bioresource Policy, Business, and Economics, College of Agriculture and Bioresources;
- Mehdi Nemati, Department of Chemical Engineering, College of Engineering;
- Aloysius Newenham-Kahindi, Department of Human Resources and Organizational Behaviour, Edwards School of Business;
- Robert Patrick, Department of Geography and Planning, College of Arts and Science;
- Greg Poelzer, Department of Political Studies, College of Arts and Science;
- Elizabeth Robertson, Department of Archaeology and Anthropology, College of Arts and Science;
- Vladimir Vujanovic, Department of Food and Bioproduct Sciences, College of Agriculture and Bioresources;
- Bill Waiser, Department of History, College of Arts and Science;
- Ryan Walker, Department of Geography and Planning, College of Arts and Science;
- Clinton Westman, Department of Archaeology and Anthropology, College of Arts and Science; and,
- Chelsea Willness, Department of Human Resources and Organizational Behaviour, Edwards School of Business.

## Adjunct Faculty

Fourteen adjunct faculty participate in the activities of the School:

- Murray Bentham, Agriculture and Agri-Food Canada;
- Biplob Das, Saskatchewan Environment;
- John Mark Davies, Saskatchewan Watershed Authority;
- Annette Desmarais, Department of Justice Studies, University of Regina;
- Steven Franklin, Trent University;

- Monique Haakensen, Contago Strategies;
- Michael Hill, Ducks Unlimited;
- Mark Johnston, Saskatchewan Research Council;
- Carrie Rickwood, Natural Resources Canada;
- Richard Robarts, Environment Canada;
- Joe Schmutz, Prairie Ecodesign;
- Judit Smits, University of Calgary;
- Garth van der Kamp, National Hydrology Research Institute, Environment Canada; and,
- Elaine Wheaton, Saskatchewan Research Council.

## Administrative Guidelines

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### Master of Sustainable Environmental Management Program (M.SEM.)

***Please note that these guidelines reflect program requirements as of September 2011. For students who began their program prior to September 2011, please refer to the appropriate version of the SENS Graduate Handbook.***

#### Background Training

Students from a wide variety of disciplines – ranging from the arts and social sciences to the life and physical sciences, pure and applied – are eligible to apply to the M.SEM. program. As such, no specific background training is required, but students should have sufficient background to pursue their chosen area of study.

Students may be admitted on a conditional basis if they require additional courses to correct specific deficiencies in their background training, but otherwise meet requirements for admission. These courses will not be credited toward graduate degree requirements, but may be completed concurrently with graduate courses taken toward those requirements. Once the specified courses have been successfully completed, the student will be recommended for fully-qualified status.

Students may be admitted on a probationary basis if their academic qualifications are difficult to assess or do not meet standards for admission. Students in this category will be assigned courses as specified by the Admissions and Awards Committee, which will form the basis for assessment of ability to continue as fully qualified.

#### Residency and Time Limit

Residency in the program is considered fulfilled when all requirements are met.

Graduate students and those involved in graduate studies are strongly encouraged to ensure that students move as expeditiously as possible through their programs of studies. Master's programs, whether full- or part-time, are limited to five years in length. This time is measured from the beginning of the first term of registration for work which is included in the program of studies (this may be course work done at the University of Saskatchewan or elsewhere, and, in general terms, includes thesis, project, or practicum work).

#### Program of Studies

A fully-qualified M.SEM. student is required to take a minimum of 30 credit units (coursework and a project). The required courses (12 credit units) are ENVS 801.3: Ecosystem Science and Sustainability, ENVS 802.3: Human Dimensions of Environmental Change; ENVS 804.3: Decision-making for Environment and Sustainability; and, ENVS 805.3: Environmental Data Analysis and Management. Please refer to page 41 of this handbook for more information about these courses. Additionally, students will be required to take 12 credit units of electives. Six credit units must be taken from a restricted set of electives (refer to page 42 of this handbook). Six credit units of electives are unrestricted – any graduate course at the University may satisfy this requirement, with the approval of the Admissions and Awards Committee or of the Graduate Chair. A student may take up to two 400-level undergraduate courses to fulfill the elective requirement with the approval of the Admissions and Awards Committee or of the Graduate Chair. M.SEM. students are also required to register in ENVS 990: Seminar in Environment and Sustainability (no credit units) and ENVS 992.6: Project in Environment and Sustainability. Additional courses may be required if the Admissions and Awards Committee feels that the student's background is deficient in some area. All required courses will be noted on each student's program of studies. A full-time M.SEM. student can complete the minimum course requirements and the project in one year of full-time study.

All graduate students at the University of Saskatchewan are required to complete GSR 960: Research Ethics, and may be required to take either GSR 961: Ethics and Integrity in Human Research or GSR 962: Ethics and Integrity in Animal Research, depending on the nature of their project, thesis, or dissertation work.

The Graduate Chair will work with the student to develop a program of studies within the first four months of the program. This program indicates the type of study to be undertaken, and all course and other requirements. Any changes made to the program of studies must be approved by the Graduate Chair and recorded in writing.

At the Master's level, students must achieve a grade of at least 60% in all graduate courses required for the degree and maintain an overall weighted average of at least 70% in those courses to retain standing. If the student fails to meet this standard, the Admissions and Awards Committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to retake a course or undertake other remedial work if, in the opinion of the Admissions and Awards Committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the Admissions and Awards Committee, the committee will recommend that the student discontinue.

### Supervisory Responsibilities

The Graduate Chair for the School or his/her designate will serve as program advisor for the M.SEM. program. For the ENVS 992 Project, each student will be assigned a faculty advisor who will mentor the student, ensure that the student completes the necessary program forms and assist the student in establishing and completing a suitable research project.

The College of Graduate Studies and Research has developed draft guidelines regarding the roles and responsibilities of advisory committees, supervisors, and graduate students. With respect to the Master of Sustainable Environmental Management program, these roles and responsibilities may be articulated as follows:

#### **Role of the Faculty Advisor:**

The faculty advisor is a mentor, advisor, and senior colleague, and provides an atmosphere of respect for the student. As the senior partner, the advisor must encourage commitment, but never exploit or indoctrinate the student. The advisor has the following responsibilities toward the student:

- To guide the student's program of studies, research project, timeline to completion, and milestones;
- To be accessible for and to encourage regular meetings with the student;
- To provide expectations, criteria, and evaluation for written work, including the ENVS 992 Research Project, in a timely fashion;
- To inform of policies, regulations, expectations, and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, collaborative work, authorship, acknowledgements, conference presentations, and professionalism;
- To ensure eligibility of the ENVS 992 Research Project for grading, and to prepare the student for the oral proposal presentation;
- To provide letters of recommendation on request, in a timely fashion; and,
- To arrange for suitable supervision during absences.

#### **Role of the Student:**

The M.SEM. student is a junior partner and colleague in a relationship of mutual respect with the faculty advisor. The student makes a commitment to the program, dedicating himself or herself to the completion of the program within an acceptable timeframe and in accordance with the policies and regulations of the School and the University. The student is entitled to mentorship, advising, guidance and monitoring by the faculty advisor. The M.SEM. student has the following responsibilities:

- To be accessible for and to maintain regular and frequent communication with the faculty advisor;

- To know and adhere to policies, regulations, expectations and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, collaborative work, authorship, acknowledgements, conference presentations, and professionalism;
- To be aware of and to meet deadlines for registration, coursework, research, applications, reporting, presentations, and convocation preparations;
- To strive for excellence and take full responsibility for coursework and research;
- To establish and adhere to a timeline and milestones for completion;
- To record research systematically, completely, and honestly;
- To report on progress to the faculty advisor;
- To submit work for evaluation, allowing reasonable time for review, and to give consideration to advice from the faculty advisor;
- To make thoughtful, considerate, frugal and responsible use of resources; and,
- To maintain, keep clean, and return to order the workplace.<sup>3</sup>

### Academic Integrity

Guidelines for Academic Conduct<sup>4</sup> at the University of Saskatchewan are approved by University Council. These guidelines give the following description of academic integrity:

*Honesty and integrity are expected in class participation, examinations, assignments, patient care and other academic work.*

- *Perform your own work unless specifically instructed otherwise.*
- *Use your own work to complete assignments and exams.*
- *Cite the source when quoting or paraphrasing someone else's work.*
- *Follow examination rules.*
- *Be truthful on all university forms.*
- *Discuss with your professor if you are using the same material for assignments in two different courses.*
- *Discuss with your professor if you have any questions about whether sources require citation.*
- *Use the same standard of honesty with fellow students, lab instructors, teaching assistants, sessional instructors and administrative staff as you do with faculty.<sup>5</sup>*

### Project

ENVS 992: Project in Environment and Sustainability is a requirement of the M.SEM. degree. Intended to permit students to build upon skills gained in the required and elective courses of the degree, the project gives an opportunity to further investigate an aspect of environment and sustainability in a manner which contributes to the School of Environment and Sustainability's research, scholarly, and artistic work.

**Outcomes:** The ENVS 992 project is intended to provide students with a forum to investigate a theoretical or applied topic in environment and sustainability. This may include scientific, technical, political, social, economic, cultural, institutional, or other appropriate attributes of environmental and sustainability challenges. Projects should

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3 "Role of the Faculty Advisor" and "Role of the Student" adapted from: University of Saskatchewan. College of Graduate Studies and Research. 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research."

4 University of Saskatchewan. Office of the University Secretary. 2008. "Guidelines for Academic Conduct." [www.usask.ca/university\\_secretary/council/reports\\_forms/reports/guide\\_conduct.php](http://www.usask.ca/university_secretary/council/reports_forms/reports/guide_conduct.php) Website accessed August 27, 2009.

5 University of Saskatchewan. Office of the University Secretary. 2008. "Academic Integrity and Student Conduct." [www.usask.ca/university\\_secretary/honesty/index.php](http://www.usask.ca/university_secretary/honesty/index.php) Website accessed August 27, 2009.

be interdisciplinary in scope, and allow students to further develop critical thinking and research skills as they investigate real-world environmental challenges in arenas such as government, industry, academia, and community-based organizations.

**Format:** ENVS 992 is a six-credit course. Typically, the final project document includes an abstract, an introduction with background, rationale, and objective(s) for the project, a literature review, original analysis, an assessment or discussion, conclusions, and references. The final document should be approximately 40 to 50 pages, double-spaced, in length, exclusive of references, appendices, and cover/index pages. Other formats (for example, a website, curriculum development, procedures manual, modeling exercise, art installation, etc.) may be considered acceptable, at the discretion of the faculty/project advisor and the School's Graduate Chair or ENVS 992 Coordinator. All projects must meet, at the least, style standards that would make them eligible for submission to a peer-reviewed venue (e.g., journal, workshop, conference presentation, etc.), when appropriate. In most cases, projects will be of a form such that the final product will be immediately valuable to a practitioner or manager in the appropriate field. Primary data collection will not typically be required, although small-scale surveys or basic field data collection may be appropriate.

**Procedure:** All ENVS 992 projects will be coordinated by the Graduate Chair or a designated ENVS 992 Coordinator, with support from administrative staff as required.

Each student in the M.SEM. program will have a faculty advisor, who could be the Graduate Chair or ENVS 992 Coordinator, and possibly an external project advisor, who oversees his/her ENVS 992 project. The Graduate Chair or the ENVS 992 Coordinator will meet with each student individually, ideally during the first term of a student's program to discuss the student's research interests and to outline and clarify all project requirements.

Students normally will register in ENVS 992 only after successful completion of the core course requirements of the M.SEM. degree (ENVS 801, ENVS 802, ENVS 804, and ENVS 805), as the subject matter and skill development components of these courses provide a significant underpinning for the ENVS 992 project. Students must maintain a cumulative 70% average in their courses, and must achieve a grade of at least 70% in any undergraduate-level course taken and at least 60% in any graduate-level course taken to maintain good standing. Typically, students will complete their course requirements during the fall and winter terms, and will undertake ENVS 992 during the summer months, or in the following fall and winter terms. Students may be permitted to register in ENVS 992 prior to the completion of the core course requirements only with the permission of the Graduate Chair or ENVS 992 Coordinator and their faculty advisor; the ability to complete project requirements must be demonstrated by the student and assessed by the faculty advisor. If faculty advisors have planned absences (e.g., study leave), provisions must be made for the continued supervision of students registered in ENVS 992.

Students are to register in ENVS 992 only during those terms when they are actively working on their research. Typically, this would be during the spring and summer terms. Students should speak to the SENS Graduate Secretary to ensure that they are properly registered in ENVS 992.

**Timeline:** The School of Environment and Sustainability recommends the following timeline for the ENVS 992 project for students who wish to complete the M.SEM. program in twelve months. Students wishing to take longer to complete the program should consult with the Graduate Chair or the ENVS 992 Coordinator regarding timelines. Projects consist of two required components: an oral or poster presentation and a written report.

*September – November:* Discuss project ideas with the Graduate Chair, the ENVS 992 Coordinator, faculty, associates, and/or other experts, with the objective of having a relatively well-defined research question formulated by the end of November. At this time, the Graduate Chair or ENVS 992 Coordinator will serve as student advisor.

*December:* Identify the project and/or faculty advisor and begin work on the project proposal. The proposal should be two pages in length, and include rationale, research steps, timelines, and, where appropriate, information about collaborations and partnerships. This statement must be submitted to the Graduate Chair or ENVS 992 Coordinator and faculty/project advisor at least one month prior to the beginning of project work. Students are responsible for ensuring that any ethics requirements for the project are met prior to beginning work on the project and must indicate the status of the ethics review in their project statement. **ANY PROJECTS INVOLVING HUMAN OR ANIMAL SUBJECTS MUST COMPLY WITH THE RULES OF THE RESEARCH ETHICS BOARD (REB). STUDENTS MUST APPLY FOR AND RECEIVE A CERTIFICATE IN ADVANCE OF UNDERTAKING ANY RESEARCH.** All graduate students are required to take the REB on-line instruction once they register with the College of Graduate Studies and Research. Any changes to the ENVS 992 project must be approved by the Graduate Chair and the faculty advisor prior to being undertaken.

*January:* Complete the project proposal and receive approval from the faculty advisor and the Graduate Chair or ENVS 992 Coordinator to proceed.

*February – March:* Where required, receive ethics approval for the proposed research project. Research proposals will be presented to the SENS community (peers, faculty members, and the wider community of environment and sustainability stakeholders) in March. Students will be required to give a short oral presentation (approximately five minutes in length) and prepare a poster about their proposals. These will be graded by the faculty/project advisor and a second reader, the latter selected by the Graduate Chair or ENVS 992 Coordinator with advice from the faculty/project advisor. The grade for the presentation and poster will comprise 20 percent of the final ENVS 992 grade. The grade for the presentation will be reached by consensus of the two markers; if consensus cannot be reached, the grade for the presentation will be the average of their individual assessments.

*April – August:* Conduct research and complete the project. The faculty/project advisor will review the project report and give feedback to the student. Normally, the advisor will not review the project report more than once before it is submitted for grading. Once submitted, the project report is graded by the advisor and the second reader. The grade for the final report, which accounts for 80 percent of the final project grade, is arrived at by consensus of the two markers. Again, if the two cannot come to consensus, the report grade is the average of their individual assessments. A copy of the final report must be submitted to the School, either as a bound copy or in electronic format (i.e., on compact disc). Students are encouraged to submit their work for publication in a peer-reviewed journal or similarly appropriate venue if possible, under the guidance of their advisors. Students are also encouraged to present their work to the community in which it was conducted, if appropriate.

### Ethical Approval to Conduct Research

According to the University of Saskatchewan Ethics Office website, the U of S adheres to the following standards regarding research ethics:

- The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
- The University Policy for Research Involving Human Subjects
- The University Research Integrity Policy

Additional guidance is provided by the Tri-Council Memorandum of Understanding entitled Schedule 2: Ethics Review of Research Involving Humans.<sup>6</sup>

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<sup>6</sup> University of Saskatchewan. Research Ethics. "Human." Website accessed July 8, 2011

The following list represents a broad overview of the range of research projects or situations that require review and approval by the Research Ethics Board:

- Research that will be published.
- Research that is funded or unfunded. Funding may be internal or external.
- Projects where participants are from inside or outside the university.
- Research that is conducted by students or faculty.
- Research projects that are conducted inside or outside the institution.
- Information that is collected directly from subjects or from existing records not in the public domain.
- Projects that are conducted in person or remotely (i.e., mail, electronic mail, fax, or telephone).
- Research designs that are observational, experimental, correctional, or descriptive.
- Pilot studies or fully developed projects undergo the same review process.
- The primary goal of the research is for teaching or training purposes, or the acquisition of knowledge.

Review is still required even if a similar project has been approved elsewhere.

The official website of the University of Saskatchewan Ethics Office ([www.usask.ca/research/ethics\\_review](http://www.usask.ca/research/ethics_review)) has complete and current information.

Environmental scientists may require research permits before fieldwork can commence. Obtaining these permits is the responsibility of the graduate student. Students who work with animal research with potential environmental impacts, and/or in parks or protected areas are also responsible for obtaining the necessary permits or permissions before undertaking their research.

### Seminar

The Seminar in Environment and Sustainability (ENVS 990) is a requirement for all M.SEM. students. To receive credit for this course, graduate students must attend and contribute to the seminar. This program is directed by a faculty coordinator who recommends to the Graduate Chair that credit for ENVS 990 be granted once the course requirements have been met. All SENS students are required to attend the seminar for the first two years of their program, or for the duration of their program, whichever is shorter in length.

### Requesting Extension of Time Limit

Students who have nearly reached the time limit of the program without completing program requirements should meet with their advisor. If the advisor supports an extension, the student may apply in writing by completing Form GSR 205. This form must be accompanied by a detailed plan for completion of the program. The form and completion plan will be signed by the student and advisor and then given to the Graduate Chair who will forward the documents to the College of Graduate Studies and Research for consideration.

The College of Graduate Studies and Research will grant time extensions when students have experienced significant difficulties or delays while actively working to finish the program. Delays caused by employment are not considered to be adequate reason for extension approval. Extensions are granted for the period of one academic term. If necessary, students may apply for a further extension. Evidence of significant progress will be required in order for further extensions to be approved.

## Master of Environment and Sustainability Program (M.E.S.)

***Please note that these administrative guidelines reflect the program requirements as of September 2011. For students who began their program prior to September 2011, please refer to the appropriate version of the SENS Graduate Handbook.***

### Background Training

Students from a wide variety of disciplines – ranging from the arts and social sciences to the life and physical sciences, pure and applied – are eligible to apply to the M.E.S. program. As such, no specific background training is required, but students should have sufficient background to pursue research in their chosen area of study.

Students may be admitted on a conditional basis if they require additional courses to correct specific deficiencies in their background training, but otherwise meet requirements for admission. These courses will not be credited toward graduate degree requirements, but may be taken concurrently with graduate courses taken toward those requirements. Once the specified courses have been successfully completed, the student will be recommended for fully-qualified status.

Students may be admitted on a probationary basis if their academic qualifications are difficult to assess or do not meet standards for admission. Students in this category will be assigned graduate courses as specified by the student's Advisory Committee, which will form the basis for assessment of ability to continue as fully-qualified.

### Residency and Time Limit

Residency in the program is considered fulfilled when all requirements are met.

Graduate students and those involved in graduate studies are strongly encouraged to ensure that students move as expeditiously as possible through their programs of studies. Master's programs, whether full- or part-time, are limited to five years in length. This time is measured from the beginning of the first term of registration for work which is included in the program of studies (this may be course work done at the University of Saskatchewan or elsewhere, and, in general terms, includes thesis, project, or practicum work).

### Program of Studies

A fully-qualified M.E.S. student is required to take a minimum of 12 credit units of graduate coursework. The required courses include ENVS 801.3: Ecosystem Science and Sustainability, ENVS 802: Human Dimensions of Environmental Change; and, ENVS 803.3: Research in Environment and Sustainability. M.E.S. students must also take three credit units of electives. Please refer to Page 41 for more information regarding ENVS courses. An M.E.S. student will normally complete the course requirements in the first year of full-time study. Additional courses may be required if the Advisory Committee feels that the student's background is deficient in some area. All required courses must be noted on the program of studies. Renewal of funding for graduate students requires satisfactory progress in the program of studies.

The elective coursework will be in the student's area of specialization and is selected in consultation with the Advisory Committee. A student may take one 400-level undergraduate course to fulfill the elective requirements, with the approval of the Advisory Committee. Credit may be granted for graduate-level courses taken previously at this or another university, provided they have not already been credited toward a bachelor's or advanced degree. The Admissions and Awards Committee may require a student to complete an examination to demonstrate proficiency before credit is granted for courses taken at another university.

The student is also required to register in ENVS 990: Seminar in Environment and Sustainability (no credit units) and ENVS 994: Research in Environment and Sustainability (no credit units). The requirements for ENVS 990 are

met by attending and participating in structured School seminars and presenting the results of thesis research. Completion of the research requirement is met when the thesis is successfully defended and approved.

All graduate students at the University of Saskatchewan are required to complete GSR 960: Research Ethics, and may be required to take either GSR 961: Ethics and Integrity in Human Research or GSR 962: Ethics and Integrity in Animal Research, depending on the nature of their project, thesis, or dissertation work.

At the beginning of the program, a supervisor will work with the student to develop a program of studies. This program indicates the nature of the research, the members of the committee, and all course and other requirements. The program of studies must be approved by the Advisory Committee of the student at the beginning of the program. Any changes made to the program of studies must be approved by the Advisory Committee and must be recorded in writing and submitted to the School and to the College of Graduate Studies and Research.

Each year a student is expected to demonstrate progress towards completing course requirements. Failure to make progress may result in a recommendation that the student withdraw. Additionally, students supported by funding must maintain specific grade point averages in order to retain funding. Students on scholarship must maintain a 75% grade point average and students on teaching assistantships must maintain a 75% grade point average. Students failing to meet these requirements will have funding withdrawn and may face an assessment of unsatisfactory progress.

At the Master's level, students must achieve a grade of at least 60% in all courses required for the degree and maintain an overall weighted average of at least 70% in those courses to retain standing. If the student fails to meet this standard, the Advisory Committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to re-take a course or undertake other remedial work if, in the opinion of the Advisory Committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the Advisory Committee, it will recommend that the student discontinue.

### **Supervisory Responsibilities**

The thesis research and the selection of courses are done with direction from the Advisory Committee. An appropriate supervisor must be available before a student will be recommended by the Admissions and Awards Committee for admission to the program. This is determined by the Admissions and Awards Committee, through consultation with faculty whose research interests correspond to those of the student. Faculty serving as graduate student supervisors must be associated with the School as standard appointees, primary- or secondary-joint appointees, associate members, or adjuncts, and must be members of the College of Graduate Studies and Research.

The Advisory Committee has the primary responsibility for directing and evaluating the student's graduate work. The Advisory Committee recommends a program of studies for the graduate student. The program of studies and any changes to that program recommended by the Advisory Committee are submitted to the Admissions and Awards Committee for approval, then forwarded to the College of Graduate Studies and Research.

The supervisor is responsible for calling meetings of the Advisory Committee. Advisory Committee meetings are held at least once each year and as required to evaluate and assist the student in her/his program of study. Students must be present at any meetings held to discuss their progress.

When supervisors are away from the University for an extended period (i.e., sabbatical leave), they are expected to arrange for another member of the Advisory Committee to act in their absence, to ensure that adequate provision for supervision is available. They must advise the Admissions and Awards Committee and the Executive Director in writing of this arrangement. All such arrangements will be communicated to the Dean of the College of Graduate

Studies and Research with a copy to the student. The Graduate Chair will advise the Dean if these arrangements are not considered satisfactory by the School.

The College of Graduate Studies and Research has developed draft guidelines regarding the roles and responsibilities of advisory committees, supervisors, and graduate students. With respect to the Master of Environment and Sustainability program, these roles and responsibilities may be articulated as follows:

**Role of the Supervisor:**

The supervisor is a mentor, advisor, and senior colleague, and provides an atmosphere of respect for the student. As the senior partner, the supervisor must encourage commitment, but never exploit or indoctrinate the student. The supervisor has the following responsibilities toward the student:

- To guide the choice of the Advisory Committee, program of studies, thesis topic, timeline to completion, and milestones;
- To be accessible for and encourage regular meetings with the student;
- To provide expectations, criteria and evaluation for written work, including the thesis, in a timely fashion;
- To explore, inform about, and provide funding opportunities;
- To inform of policies, regulations, expectations and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, thesis, collaborative work, authorship, acknowledgements, conference presentations, and professionalism;
- To convene the Advisory Committee at least once yearly;
- To provide the student with the opportunity to present research at conference;
- To ensure the eligibility of the thesis for examination, to provide the names of potential suitable external examiners, and to prepare the student for defence;
- To provide letters of recommendation on request, in a timely fashion; and,
- To arrange for suitable supervision during absences.

**Role of the Student:**

The M.E.S. student is a junior partner and colleague in a relationship of mutual respect with the supervisor and Advisory Committee. The student makes a commitment to the program, dedicating himself or herself to the completion of the program within an acceptable timeframe and in accordance with the policies and regulations of the School and the University. The student is entitled to mentorship, advising, guidance and monitoring and yearly evaluation of progress by the Advisory Committee. The M.E.S. student has the following responsibilities:

- To be accessible for and maintain regular and frequent communication with the supervisor and Advisory Committee;
- To know and adhere to policies, regulations, expectations and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, thesis work, collaborative work, authorship, acknowledgements, conference presentations, professionalism, and obligations tied to funding;
- To be aware of and to meet deadlines for registration, coursework, research, applications, reporting, defence, and convocation preparations;
- To strive for excellence in and to take full responsibility for coursework and research;
- To establish and adhere to a timeline and milestones for completion;
- To record research systematically, completely, and honestly;
- To report on progress and to prepare a yearly report for the Advisory Committee;
- To submit work for evaluation, allowing reasonable time for review, and to give consideration to advice from the supervisor and the Advisory Committee;

- To make thoughtful, considerate, frugal and responsible use of resources; and,
- To maintain, keep clean, and return to order the workplace.<sup>7</sup>

### Academic Integrity

Guidelines for Academic Conduct<sup>8</sup> at the University of Saskatchewan are approved by University Council. These guidelines give the following description of academic integrity:

*Honesty and integrity are expected in class participation, examinations, assignments, patient care and other academic work.*

- *Perform your own work unless specifically instructed otherwise.*
- *Use your own work to complete assignments and exams.*
- *Cite the source when quoting or paraphrasing someone else's work.*
- *Follow examination rules.*
- *Be truthful on all university forms.*
- *Discuss with your professor if you are using the same material for assignments in two different courses.*
- *Discuss with your professor if you have any questions about whether sources require citation.*
- *Use the same standard of honesty with fellow students, lab instructors, teaching assistants, sessional instructors and administrative staff as you do with faculty.<sup>9</sup>*

### The Graduate Advisory Committee

The role of the Advisory Committee is to assist the student in completing program requirements. Members are brought together for their substantive expertise in the research area.

Master's committees are composed of a minimum of 3 members:

- 1 chair (non-voting except to break a tie);
- 1 research supervisor;
- 1 or more additional faculty who may or may not be appointed to the School and whose disciplinary background is different from that of the supervisor.

The Dean of the College of Graduate Studies and Research is an ex-officio member of every Advisory Committee.

#### **Role of the Advisory Committee:**

The Advisory Committee provides the student with mentorship, guidance, advice, evaluation and feedback in an atmosphere of mutual respect. The Advisory Committee should be chosen early in the program by the student and the supervisor, in consultation, to reflect diverse expertise in the chosen field of research. The Advisory Committee has the following responsibilities toward the student:

- To establish a program of studies in consultation with the student, at the beginning of the program, with clear course requirements, expectations, and a projected timeline with milestones;

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7 "Role of the Supervisor" and "Role of the Student" adapted from: University of Saskatchewan. College of Graduate Studies and Research. 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research."

8 University of Saskatchewan. Office of the University Secretary. 2008. "Guidelines for Academic Conduct." [www.usask.ca/university\\_secretary/council/reports\\_forms/reports/guide\\_conduct.php](http://www.usask.ca/university_secretary/council/reports_forms/reports/guide_conduct.php) Website accessed August 27, 2009.

9 University of Saskatchewan. Office of the University Secretary. 2008. "Academic Integrity and Student Conduct." [www.usask.ca/university\\_secretary/honesty/index.php](http://www.usask.ca/university_secretary/honesty/index.php) Website accessed August 27, 2009.

- To remain familiar with the research project and the student's progress;
- To meet with the student at least once yearly to review the student's progress, and then to report to the College of Graduate Studies and Research;
- To be prepared to recommend withdrawal or alternatives if progress is unsatisfactory;
- To be available for consultation with the student on academic or research-related matters, as well as other matters which may arise, including, but not limited to: supervision, intellectual property, ethics, authorship, best practices, academic integrity, acknowledgement, medical or compassionate situations, conflict, disputes, harassment, and discrimination;
- To provide feedback on the suitability of material for publication, and to suggest relevant journals for submissions;
- To examine the thesis for defence in a timely manner;
- To provide opportunities for the student to present the research at a conference; and,
- To be willing to provide letters of reference upon request.<sup>10</sup>

### The Role of the Chair of Advisory Committees

The role of the Chair of an Advisory Committee is to maintain the standards, fairness and integrity of the process for both the student and faculty. The Chair or designate is required to attend all meetings where a decision is made, and may be required to vote. The Chair completes the minutes of each meeting, records votes, and files the records with the graduate secretary.

All faculty members with standard or joint appointments in the School have a collective responsibility to participate in chairing committees.

Note that the Chair of the Advisory Committee cannot pass judgment on matters that are not normally addressed by the committee, such as academic dishonesty. Matters that cannot be addressed by the committee must be referred to the Executive Director of the School and the Dean of the College of Graduate Studies and Research for resolution. The Chair should provide all the relevant information in such a situation.

During the first year of residence, the student will select a thesis research topic and prepare a thesis proposal. The student will be guided in this by his/her supervisor and Advisory Committee. The proposal should clearly establish the objectives of the research, outline the theoretical context of the research, and identify the methods to be used to meet the research objectives. The proposal should be submitted and defended within nine months from first registration in the program.

The thesis proposal is submitted to the student's supervisor for review. Once the proposal is judged satisfactory by the supervisor, copies of the proposal are provided to the other members of the Advisory Committee. The student will present the proposal and the committee will determine, by consensus, if the proposal provides a satisfactory basis for thesis research. Written confirmation of approval must be filed with the graduate secretary by the Chair. The supervisor will ensure that a copy of the approved thesis proposal is placed in the student's School file.

For Master's committees, the Chair of the Advisory Committee will chair the final thesis defence. The Chair is entitled, although not required, to ask questions. If the committee is able to reach a consensus about the quality of the thesis, the Chair need only record the consensus decision. If consensus cannot be reached among the committee and a vote must be taken, the Chair must record the outcome of the vote. If the vote is tied, or where the committee and the external examiner do not agree on the vote, the Chair must vote. In this case, abstention by any

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<sup>10</sup> "Role of the Advisory Committee" adapted from: University of Saskatchewan. College of Graduate Studies and Research. 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research."

member of the Examining Committee, including the Chair, will be interpreted as a negative vote. The student must be informed of the decision immediately after the examination.

Should further work by the candidate be required, the Chair must see that the committee states clearly, for the candidate and the College of Graduate Studies and Research, what work is to be done and whether or not the Examining Committee shall meet again before the thesis can be accepted.

### Ethical Approval to Conduct Research

According to the University of Saskatchewan Ethics Office website, the U of S adheres to the following standards regarding research ethics:

- The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
- The University Policy for Research Involving Human Subjects
- The University Research Integrity Policy

Additional guidance is provided by the Tri-Council Memorandum of Understanding entitled Schedule 2: Ethics Review of Research Involving Humans.<sup>11</sup>

The following list represents a broad overview of the range of research projects or situations that require review and approval by the Research Ethics Board:

- Research that will be published.
- Research that is funded or unfunded. Funding may be internal or external.
- Projects where participants are from inside or outside the university.
- Research that is conducted by students or faculty.
- Research projects that are conducted inside or outside the institution.
- Information that is collected directly from subjects or from existing records not in the public domain.
- Projects that are conducted in person or remotely (i.e., mail, electronic mail, fax, or telephone).
- Research designs that are observational, experimental, correctional, or descriptive.
- Pilot studies or fully developed projects undergo the same review process.
- The primary goal of the research is for teaching or training purposes, or the acquisition of knowledge.

Review is still required even if a similar project has been approved elsewhere.

The official website of the University of Saskatchewan Ethics Office ([www.usask.ca/research/ethics\\_review](http://www.usask.ca/research/ethics_review)) has complete and current information.

Environmental scientists may require research permits before fieldwork can commence. Obtaining these permits is the responsibility of the graduate student. Students who work with animal research with potential environmental impacts, and/or in parks or protected areas are also responsible for obtaining the necessary permits or permissions before undertaking their research.

### Seminar

The Seminar in Environment and Sustainability (ENVS 990) is a requirement for all M.E.S. students. To receive credit for this course, graduate students must attend and contribute to the School seminar series. This program is directed by a Faculty Coordinator who recommends to the Graduate Chair that credit for ENVS 990 be granted once

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<sup>11</sup> University of Saskatchewan. Research Ethics. "Human." Website accessed July 8, 2011

all requirements have been met. All SENS students are required to attend the seminar for the first two years of their program, or for the duration of their program, whichever is shorter in length.

A student in the Master of Environment and Sustainability program is required to present one ENVS 990 seminar during the course of his/her program. The presentation will provide the student with the experience of a formal presentation setting and the opportunity to share their research and scholarly activity with students and faculty. The seminar must be based on the student's area of study and can occur any time after proposal approval and before the thesis defence. The presentation should be about 20 minutes in length.

Constructive feedback will be gathered by the ENVS 990 Coordinator and the student's supervisor or designate and shared with the presenter. If a student gives an unsatisfactory seminar or does not consistently attend seminars, the Seminar Coordinator will notify the student's Advisory Committee who will then decide on an appropriate action (for example, another seminar may be required). The Seminar Coordinator must inform the graduate secretary once a student has met the ENVS 990 presentation requirement.

### Requesting Extension of Time Limit

Students who have nearly reached the time limit of the program without completing program requirements should meet with their supervisor. If the supervisor supports an extension, the student may apply in writing by completing form GSR 205. This form must be accompanied by a detailed plan for completion of the program. The form and completion plan will be signed by the student and supervisor and then given to the Graduate Chair, who will forward the documents to the College of Graduate Studies and Research for consideration.

The College of Graduate Studies and Research will grant time extensions when students have experienced significant difficulties or delays while actively working to finish the program. Delays caused by employment are not considered to be adequate reason for extension approval. Extensions are granted for the period of one academic term. If necessary, students may apply for a further extension. Evidence of significant progress will be required in order for further extensions to be approved.

### Permission to Write the Thesis

When the supervisor has determined that the student has made sufficient progress in data collection and analysis of the thesis research, a meeting of the Advisory Committee will be held to evaluate the quality of that work and to assess whether the student should progress to writing the thesis. Permission to write must be indicated in writing and placed in the student's file by the committee chair.

### Thesis Format

Students may prepare a thesis by manuscript (if approved by the Advisory Committee) or a thesis by traditional format. General guidelines for the thesis format requirements are provided in the College of Graduate Studies and Research On-Line Guide for Writing Electronic Theses, Projects, and Dissertations, which is available at: [www.usask.ca/cgsr/for\\_students/etd.php](http://www.usask.ca/cgsr/for_students/etd.php). The recommended length of the main body of a traditional Master's thesis is between 50 and 100 pages.

A manuscript-style thesis typically includes an introduction, a research manuscript, and a concluding chapter. The purpose of the introduction is to provide a review of the literature that establishes the student's familiarity with relevant work in the field; establishes the objectives of the thesis; places the research within the larger context of the discipline; and provides overall context for the research manuscript. The research manuscript (second chapter) is intended to communicate research results and will adopt the format of a peer-reviewed national or international academic journal. The format for the manuscript would normally include a research abstract; brief introduction

and statement of the research problem; synthesis of the literature; description of research methods and study area (if applicable); analysis, presentation and discussion of results; and literature cited. Manuscript length may vary and is at the discretion of the Advisory Committee, although the intent is to encourage a journal-style approach. In the case of a co-authored manuscript the student must be the first author.

The final section revisits the main contributions or findings of the research manuscript within the broader context of the literature and discipline, linking the manuscript's findings back to the literature identified in the introduction. Directions for future research are normally identified in this section, as well as any limitations to the research. Material that is not part of the research manuscript but deemed necessary by the student's Advisory Committee as supporting documentation (e.g. research instruments; raw data summaries; copyright permissions; additional site descriptions, etc.) should be included in the appendix. References are self-contained.

Evaluation of the M.E.S. manuscript-style thesis is the same as that for the regular thesis option. The difference between the traditional and manuscript style thesis is in format only. Submission or acceptance of a manuscript for publication is independent of the evaluation of the thesis, which rests with the Advisory Committee and the external examiner.

### Permission to Defend

Once a full draft of the thesis is completed and the supervisor has had an opportunity to review it and make comments, the student will present the thesis to her/his committee members for review. When the Advisory Committee is satisfied that the thesis is suitable for defence, it will advise the Graduate Chair. The Chair will then advise the Executive Director of the School and the College of Graduate Studies and Research in order that the thesis can proceed to defence.

### Defence

Once the Advisory Committee has recommended that the thesis proceed to defence, the student will prepare the requisite number of copies of the thesis (usually 5) for distribution to the members of the Advisory Committee, the external examiner, and the School.

The Advisory Committee will recommend names of potential external examiners to the Admissions and Awards Committee, which will forward this recommendation to the College of Graduate Studies and Research on behalf of the School. Standard procedures will then be followed on invitation of the external examiner, provision of a copy of the thesis, preparation of necessary documents, and scheduling of defence.

At least one month prior to the defence, the supervisor must submit the necessary forms to the Graduate Chair, who will review and approve them, and then pass them on to the College of Graduate Studies and Research. Once approved, at least three weeks must be provided for reading of the thesis and preparation for the defence. These time lines are strictly enforced by the College of Graduate Studies and Research and the School.

### Appointment of the Thesis Examining Committee

The Examining Committee for a Master's student consists of the Advisory Committee and an external examiner appointed by the Dean of the College of Graduate Studies and Research. Criteria for selecting external examiners for M.E.S. defences is as follows:

- i) The external examiner has not graduated from the academic unit (SENS) within the last three years.
- ii) The external examiner has not collaborated with the supervisor(s) of the graduate student within the last three years.
- iii) The external examiner is not currently enrolled as a graduate student.
- iv) The defending student cannot have had any previous formal contact with the proposed external examiner, including having been a student in a course taught by the proposed external examiner within the last 12 months.

- v) Faculty with standard or primary-joint appointments in SENS cannot serve as external examiners for one another's students, but can serve as external examiner for other students in SENS.
- vi) A faculty member holding a secondary-joint appointment, or associate or adjunct membership, can serve as an external M.E.S. examiner within SENS, provided that no other source of conflict exists (e.g., the first four points above have not been violated).
- vii) The external examiner should ideally not have a formal affiliation with the same unit or department as the M.E.S. supervisor(s). For example, the external examiner cannot be from department X, if the supervisor of the M.E.S. student being evaluated holds a primary- or secondary-joint appointment in that same department.

While every effort will be made to ensure that an M.E.S. external examiner is from another academic unit, the examiner can be a member of SENS and actively involved with the SENS graduate programs as outlined above. When an appropriate, truly 'external' examiner cannot be identified, every effort will be made to select an external examiner that is as far removed from the specific graduate student as possible, while still being knowledgeable enough in the topic area to provide the required level of expertise.

The external examiner submits a report on the examination to the Dean of the College of Graduate Studies and Research using Form GSR 402.

### Examination of the Thesis

An oral examination is limited to work done by the candidate for the thesis and to knowledge of directly related material. Outside of the Examining Committee, members of the University community and guests may attend the oral presentation of the thesis. These attendees may remain in the audience during questioning with the permission of the Examining Committee and the student. At the conclusion of the examination, the Examining Committee meets to determine if the thesis, and its defence by the student, meet the standards for the degree. The Examining Committee members will decide by consensus or majority vote whether the thesis:

- i) has passed without revisions;
- ii) has passed with revisions (major or minor);
- iii) must be re-examined; or
- iv) is unacceptable, and the student's program is to be terminated.

The Examining Committee will also determine if the oral examination:

- i) is satisfactory;
- ii) is not satisfactory, and must be repeated; or
- iii) has failed and will not be repeated.

The student is advised immediately of the Examining Committee's decision.

### After the Defence

Master's students are required to submit a bound copy of their thesis to the School of Environment and Sustainability, and one bound copy or CD to the supervisor. An electronic copy of the thesis is to be submitted to the College of Graduate Studies and Research. It is the responsibility of the student to deliver or arrange to have the bound copies of his/her thesis delivered to the supervisor and the School, and to submit the thesis electronically to the College of Graduate Studies and Research.

## Doctor of Philosophy in Environment and Sustainability Program (Ph.D.)

***Please note that these administrative guidelines reflect the program requirements as of September 2011. For students who began their program prior to September 2011, please refer to the appropriate version of the SENS Graduate Handbook.***

Applicants who do not hold a Master's degree must first register in a Master's program. A student may be considered for transfer to a Ph.D. program on the recommendation of the School. This requires successful completion of the qualifying exam.

### Residency and Time Limit

Residency in the program is considered fulfilled when all requirements are met.

Graduate students and those involved in graduate studies are strongly encouraged to ensure that students move as expeditiously as possible through their programs of studies. Ph.D. programs, whether full- or part-time, are limited to six years in length. This time is measured from the beginning of the first term of registration for work which is included in the program of studies (this may be course work done at the University of Saskatchewan or elsewhere, and, in general terms, includes thesis, project, or practicum work).

### Program of Studies

A fully-qualified Ph.D. student is required to take a minimum of 6 credit units of graduate course work. Students who have not previously taken an interdisciplinary graduate degree are advised to take either ENVS 801.3: Ecosystem Science and Sustainability or ENVS 802.3: Human Dimensions of Environmental Change to achieve competence in interdisciplinary understandings of sustainability. It is expected that a Ph.D. student will normally complete the course requirements in the first year of full-time study. Additional courses may be required if the Advisory Committee feels that the student's background is deficient in some area. All required courses must be noted on the program of studies.

Elective courses will be in the student's area of specialization and are selected in consultation with the Advisory Committee. Credit may be granted for graduate-level courses taken previously at this or another university, provided they have not already been credited toward a bachelor's or professional degree. The Admissions and Awards Committee may require a student to sit an examination to demonstrate proficiency before credit is granted for courses taken at another university.

The student is also required to register in ENVS 990: Seminar in Environment and Sustainability (no credit units) and ENVS 996: Research in Environment and Sustainability (no credit units). The requirements for ENVS 990 are met by attending and participating in structured School seminars and presenting the research proposal and the results of the dissertation research (more details about seminar requirements are found on page 36). Completion of the research requirement is met when the dissertation is successfully defended.

All graduate students at the University of Saskatchewan are required to complete GSR 960: Research Ethics, and may be required to take either GSR 961: Ethics and Integrity in Human Research or GSR 962: Ethics and Integrity in Animal Research, depending on the nature of their project, thesis, or dissertation work.

The Ph.D. program involves coursework, qualifying and comprehensive exams, and the preparation of a dissertation. The purpose of the courses is to complete the student's general training in environment and sustainability and to develop an area of specialization sufficient to permit the student to undertake research which will make a

contribution to the discipline. The selection of coursework and dissertation research is directed by the Advisory Committee.

An appropriate supervisor must be available before a student will be recommended by the Admissions and Awards Committee for admission to the College of Graduate Studies and Research. This is determined by the Admissions and Awards Committee through consultation with faculty whose research interests correspond to those of the student. Faculty serving as graduate student supervisors must be associated with the School and be members of the College of Graduate Studies and Research.

At the beginning of the program, the supervisor will work with the student to develop a program of studies. The supervisor, in consultation with the student, invites others to serve on the Advisory Committee. The Advisory Committee has the primary responsibility for directing and evaluating the student's graduate study. The Advisory Committee recommends a program of studies for the graduate student, and may recommend revisions to that program. This program indicates the nature of the research, the members of the committee, and all course and other requirements. The program of studies must be approved by the Advisory Committee at the beginning of the program. Any changes made to the program of studies must be approved by the Advisory Committee and must be recorded in writing and submitted to the College of Graduate Studies and Research on behalf of the School.

Each year a student is expected to demonstrate progress towards completing program requirements. Failure to make progress may result in a recommendation that the student withdraw. Additionally, students supported by funding must maintain specific grade point averages in order to retain funding. Students on scholarship must maintain an 75% grade point average and students on teaching assistantship must maintain a 75% grade point average. Students failing to meet these requirements will have funding withdrawn and may face an assessment of unsatisfactory progress.

At the doctoral level, students must achieve a grade of at least 70% in all courses required for the degree. If the student fails to meet these standards, the Advisory Committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to re-take a course or undertake other remedial work if, in the opinion of the Advisory Committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the Advisory Committee, it will recommend that the student discontinue.

The student's Advisory Committee, in consultation with the student, must prepare a recommendation for a program of study (please note that the Program of Study Form is available from the Graduate Secretary); this is normally done in the first term following initial registration. The recommendation is submitted to the Admissions and Awards Committee for approval, and is then submitted to the College of Graduate Studies and Research on behalf of the School. Final decisions regarding recommendations on the program of study are made by the College of Graduate Studies and Research. The program establishes the specific degree requirements to be met by an individual student. Any changes in the program of study must be recommended by the student's Advisory Committee and approved by the Admissions and Awards Committee and the College of Graduate Studies and Research. A revised program of studies form must be completed and submitted to the School.

In addition to the specific requirements in the program of study, the student must meet residency and registration requirements established by the University. All doctoral candidates are required to take a qualifying exam and a comprehensive exam.

### **Supervisory Responsibilities**

The dissertation research and the selection of courses are done under the direction of the Advisory Committee. The supervisor is responsible for calling meetings of the Advisory Committee. The Chair keeps minutes of the

meetings, and distributes those minutes to the student and Advisory Committee members. Advisory Committee meetings are held at least once per year, and as required to evaluate and assist the student in the program of study. A graduate student is entitled to attend all Advisory Committee meetings.

When supervisors are away from the University for an extended period (i.e., sabbatical leave), they are expected to arrange for another member of the Advisory Committee to act in their absence, and to advise the Admissions and Awards Committee and Executive Director in writing of this arrangement. Students can expect their supervisors to ensure that adequate provision has been made for continued supervision during their own absence or leave of any kind. All such arrangements will be communicated to the Dean of the College of Graduate Studies and Research with a copy to the student. The Graduate Chair will advise the Dean if these arrangements are not considered satisfactory by the School. Faculty members should recognize that it is imperative to make an appropriate reduction in supervisory and advisory responsibilities prior to and during sabbatical and similar types of leave.

The College of Graduate Studies and Research has developed draft guidelines regarding the roles and responsibilities of advisory committees, supervisors, and graduate students. With respect to the Doctor of Philosophy in Environment and Sustainability program, these roles and responsibilities may be articulated as follows:

**Role of the Supervisor:**

The supervisor is a mentor, advisor, and senior colleague, and provides an atmosphere of respect for the student. As the senior partner, the supervisor must encourage commitment, but never exploit or indoctrinate the student. The supervisor has the following responsibilities toward the student:

- To guide the choice of the Advisory Committee, Program of Studies, dissertation topic, timeline to completion, and milestones;
- To be accessible for and encourage regular meetings with the student;
- To provide expectations, criteria and evaluation for written work, including the dissertation, in a timely fashion;
- To explore, inform about, and provide funding opportunities;
- To inform of policies, regulations, expectations and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, dissertation work, collaborative work, authorship, acknowledgements, conference presentations, and professionalism;
- To convene the Advisory Committee at least once yearly;
- To provide the student with the opportunity to present research at conference;
- To ensure the eligibility of the dissertation for examination, to provide the names of potential suitable external examiners, and to prepare the student for defence;
- To provide letters of recommendation on request, in a timely fashion; and,
- To arrange for suitable supervision during absences.

**Role of the Student:**

The Ph.D. student is a junior partner and colleague in a relationship of mutual respect with the supervisor and Advisory Committee. The student makes a commitment to the program, dedicating himself or herself to the completion of the program within an acceptable timeframe and in accordance with the policies and regulations of the School and the University. The student is entitled to mentorship, advising, guidance and monitoring and yearly evaluation of progress by the Advisory Committee. The Ph.D. student has the following responsibilities:

- To be accessible for and maintain regular and frequent communication with the supervisor and Advisory Committee;
- To know and adhere to policies, regulations, expectations and standards of the School, the College of Graduate Studies and Research, and the University with respect to coursework, research, scholarship, intellectual property, academic integrity, safety, ethics, dissertation work, collaborative work, authorship, acknowledgements, conference presentations, professionalism, and obligations tied to funding;

- To be aware of and to meet deadlines for registration, coursework, research, applications, reporting, defence, and convocation preparations;
- To strive for excellence in and to take full responsibility for coursework and research;
- To establish and adhere to a timeline and milestones for completion;
- To record research systematically, completely, and honestly;
- To report on progress and to prepare a yearly report for the Advisory Committee;
- To submit work for evaluation, allowing reasonable time for review, and to give consideration to advice from the supervisor and the Advisory Committee;
- To make thoughtful, considerate, frugal and responsible use of resources; and,
- To maintain, keep clean, and return to order the workplace.<sup>12</sup>

## Academic Integrity

Guidelines for Academic Conduct<sup>13</sup> at the University of Saskatchewan are approved by University Council. These guidelines give the following description of academic integrity:

*Honesty and integrity are expected in class participation, examinations, assignments, patient care and other academic work.*

- *Perform your own work unless specifically instructed otherwise.*
- *Use your own work to complete assignments and exams.*
- *Cite the source when quoting or paraphrasing someone else's work.*
- *Follow examination rules.*
- *Be truthful on all university forms.*
- *Discuss with your professor if you are using the same material for assignments in two different courses.*
- *Discuss with your professor if you have any questions about whether sources require citation.*
- *Use the same standard of honesty with fellow students, lab instructors, teaching assistants, sessional instructors and administrative staff as you do with faculty.<sup>14</sup>*

## Qualifying Exam

All Ph.D. students are required to undertake a qualifying examination, the purpose of which is to assess interdisciplinary and communication skills, background, and potential for research, and to identify any deficiencies that must be remediated by coursework. Students must complete the qualifying examination within eight months of first registration in the Ph.D. program. The Advisory Committee members must meet with the student at least once prior to the qualifying exam. The purpose of this meeting is to explain to the student the nature and scope of the qualifying exam and the committee's expectations. The meeting should, ideally, be held in person, but teleconference or videoconference arrangements are acceptable when necessary. The qualifying examination will be car-

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12 "Role of the Supervisor" and "Role of the Student" adapted from: University of Saskatchewan. College of Graduate Studies and Research. 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research."

13 University of Saskatchewan. Office of the University Secretary. 2008. "Guidelines for Academic Conduct." [www.usask.ca/university\\_secretary/council/reports\\_forms/reports/guide\\_conduct.php](http://www.usask.ca/university_secretary/council/reports_forms/reports/guide_conduct.php) Website accessed August 27, 2009.

14 University of Saskatchewan. Office of the University Secretary. 2008. "Academic Integrity and Student Conduct." [www.usask.ca/university\\_secretary/honesty/index.php](http://www.usask.ca/university_secretary/honesty/index.php) Website accessed August 27, 2009.

ried out by the Advisory Committee, and will assist the Advisory Committee in developing the program of studies and the required coursework.

The qualifying exam will be comprised of a written component and an oral component. For students beginning their program in September, the written component should be completed by May 1st with the oral completed within the following 2 weeks. The written component shall be 2 pages in length adhering to the format of a tri-council proposal (SSHRC, NSERC, or CIHR) and shall cover the general topic of the proposed Ph.D. research area. The oral examination will review the written response plus any related knowledge. The results from the written and oral components must satisfy the committee members of the student's basic knowledge of the subject area of the research; interdisciplinary, written, and verbal communication skills; and, demonstrated ability to undertake research.

There are several possible outcomes of the qualifying examination:

- i) Approval and pass with no additional requirements;
- ii) Approval and pass with additional requirements as specified by the Advisory Committee;
- iii) Requirement for re-examination;
- iv) Failure and requirement for termination of the program; or
- v) Pursuit of the Master's program of studies.

The chair of the Advisory Committee must inform the SENS graduate secretary of the committee's decision immediately following the qualifying exam.

Students failing the examination without previously completing a Master's degree will not be allowed to transfer into a Ph.D. program. A second attempt to pass the examination will not be permitted and the student will be required to complete the Master's program. Students who possess a Master's degree and fail the initial examination will be allowed a second attempt, but must make that second attempt within two months of the original examination. Students failing the Ph.D. qualifying examination for a second time must withdraw from the program, or may elect to continue as a Master's student, at the discretion of the Advisory Committee.

### Transferring From A Master's Program To A Ph.D. Program

Exceptional students may be recommended for transfer into a Ph.D. program without completing a Master's degree. Recommendation may be considered by the Advisory Committee if the student has a grade point average exceeding 80% and research completed at the time of consideration is deemed to be of appropriate quality. Recommendation to transfer from a Master's program to a Ph.D. program must be initiated through a formal meeting of the student's Advisory Committee that then forwards its recommendation through the Graduate Chair to the College of Graduate Studies and Research. Students wishing to transfer to the Ph.D. program without completing a Master's degree must successfully complete a qualifying exam, which should be held at the end of the first year of study.

For students without a previous Master's degree, basic skills and knowledge about the subject area have not been tested through a thesis defence. For students without a Master's degree, the qualifying examination will consist of a written and oral examination. A special Examining Committee will be struck for the qualifying exam of a student seeking to be accelerated to the Ph.D. program. This committee will be composed of a chair, the supervisor, and three additional faculty. Of these three faculty, one is to be from the School (as a standard, joint, or associate member), one is from a discipline that is different from that of the research supervisor, and at least one is not a member of the School.

## Comprehensive Exam

**Purpose:** The purpose of the Comprehensive Examination is to ensure that the student understands and can meet the standards of evidence and scholarship in his/her chosen field(s) of research, and is able to articulate the interdisciplinary nature of his/her work from a broad sustainability perspective. The examination allows the student's Graduate Advisory Committee to evaluate the student's potential for interdisciplinary research in environment and sustainability by testing the student's foundational knowledge in the field(s) of study in which the research is situated, and the student's ability to reconcile work across fields.

**Scope:** The scope of the Comprehensive Examination is to be broader than the specific topic of the student's thesis dissertation. While the Comprehensive Exam will address the student's understanding of the literature in his/her field(s) of study and the areas in which the thesis topic is structured (e.g. theories, methods, past and current debates, anticipated future trajectories), it will do so in an interdisciplinary manner with emphasis on the student's ability to demonstrate scholarly breadth and contextual understanding in the broad area of environment and sustainability. The Comprehensive Exam is not designed to query the specifics of the student's proposed research and should not be used to do so.

**Timing:** Within the first year of studies a program of studies and a progress report must be submitted to the Graduate Chair and the College of Graduate Studies and Research. The program of studies will identify the general dissertation topic area, membership of the Graduate Advisory Committee, and timing and format of the Comprehensive Exam. The progress report will document the student's progress in course work, thesis proposal development, and identify other program requirements and student accomplishments.

The Comprehensive Exam must ideally be completed before the end of the second year of the student's program of study, after any requirements for a Qualifying Exam have been met, and after all required coursework is completed. The dissertation proposal must also be completed before the end of the second year of the student's program of study. There is no requirement that the dissertation proposal be completed before or after the Comprehensive Exam.

**Comprehensive Exam Topics and Reading List:** The topics or general areas of the Comprehensive Exam are to be determined by the Advisory Committee, in consultation with the student, a minimum of three months prior to the anticipated date of the exam. The Comprehensive Exam will address three broad topics related to the student's research area, one of which will be 'sustainability' (see Written Exam Format).

The Advisory Committee, in consultation with the student, will develop a Reading List including, at a minimum, 15 critically important papers or books in each of the three areas. The reading list is to serve as a guide to the student, directing him/her to the body of literature most relevant to the topics or general areas to be addressed by the Comprehensive Examination.

The Advisory Committee must provide this Reading List to the student at least three months prior to the anticipated date of the comprehensive examination. Once the Reading List is assigned, the committee can add no new readings. However, the student should treat the reading list as a guide base only and be prepared to read more extensively in each of the three areas.

**Exam Format:** The Comprehensive Exam will have both a written and an oral component.

*Written Exam:* The Advisory Committee, in discussion with the student, will set the format of the written portion of the Comprehensive Exam. There are two options for the written exam:

- i) *A series of three take-home papers with the deadlines for each paper to be set by the committee, though not to span more than three months.*

The take-home papers are to adopt the form of a critical literature review, with each paper addressing one of the three broad areas identified on the Reading List.

Consistent with the interdisciplinary nature of the School of Environment and Sustainability, at least one of the three exam papers must focus on the topic area of sustainability. The purpose is to test the student's appreciation for the range of perspectives on sustainability and their interdisciplinary aspects as they relate to his/her research area.

It is at the discretion of the Advisory Committee to assign a broad question, or set of questions, as a guide to each paper, or to allow more flexibility in the specific question(s) the student chooses to address in each of the critical literature reviews.

The length of each paper is flexible and to be determined by the Advisory Committee. As a guideline, each paper should be the length of a standard peer review journal paper – typically 5,000 to 8,500 words. This length is meant to be illustrative only, and is not to be taken as a definitive test of sufficiency. The content and format of the papers will not be judged relative to journal paper standards; however, it is expected that the content will meet the requirements of the comprehensive exam.

ii) *An 'in situ' exam wherein the student has one day to write each of three exam papers.*

Under this format the student will have 24 hours to write each of three exams. Each exam may consist of a single question, or multiple questions, to be determined at the discretion of the Advisory Committee. The student will not know the specific exam questions in advance of the exam, but will know of the general area being questioned.

Consistent with the interdisciplinary nature of the School of Environment and Sustainability, at least one of the three papers must focus on the topic area of sustainability. The purpose is to test the student's appreciation for the range of perspectives on sustainability and their interdisciplinary aspects as they relate to his/her research area.

The length of each exam paper will vary according to the number of questions, but must be reasonable based on the time allotted to complete the exam.

**Oral Exam:** The oral exam will take place within two weeks of completion of the last written exam. During the oral exam the student is expected to be able to discuss key areas or fields of research that are related to his/her own field(s) of study, by answering questions posed by the examination committee based on, or supplementing, the written part of the exam.

However, the scope of the oral exam should not be restricted to the student's responses on the written exam, but should explore also the student's ability to demonstrate a breadth of understanding in each of the three broad areas included on the student's Reading List.

The Chair of the Advisory Committee may participate in the oral exam by asking questions, but will vote on the exam results only in the case of a tie.

**Results:** The Advisory Committee will determine by consensus or majority vote (if consensus cannot be reached) whether the written and oral components of the exam are:

- i) passed without condition;
- ii) passed with condition (e.g. conditions may include a requirement to re-do a written portion of the exam, or complete additional coursework);
- iii) failed with requirement for reexamination and, as identified by the committee, completion of additional work;  
or
- iv) failed with recommendation to discontinue.

A student failing a Comprehensive Examination is permitted a second examination with permission of the Dean of the College of Graduate Studies and Research. A second failure automatically disqualifies the student from further work for that particular Ph.D. degree. A second examination will normally take place within 2 – 3 months of the first examination.

The marked written portion of the exam will be filed in the student's file. It is the responsibility of the Chair of the Graduate Advisory Committee to inform the Graduate Secretary, the Graduate Chair, and the College of Graduate Studies and Research of the outcome of the Comprehensive Examination as soon as possible after the exam. The decision of the Graduate Advisory Committee must be communicated to the student immediately following the oral exam.

### The Graduate Advisory Committee

The role of the Advisory Committee is to assist the student in completing program requirements. Members are brought together for their substantive expertise in the research area.

Ph.D. committees are composed of a minimum of 5 members:

- 1 chair (non-voting except to break a tie);
- 1 research supervisor;
- 3 or 4 committee members, at least one of whom is from the School (as a standard or joint appointee or associate), at least one of whom is from a discipline that is different from that of the research supervisor and at least one of whom is not a member of the School (cognate).

The Dean of the College of Graduate Studies and Research is an ex-officio member of every Advisory Committee.

The role of the Advisory Committee, adapted from the College of Graduate Studies and Research draft guidelines, may be articulated as follows for the Doctor of Philosophy in Environment and Sustainability program:

#### **Role of the Advisory Committee:**

The Advisory Committee provides the student with mentorship, guidance, advice, evaluation and feedback in an atmosphere of mutual respect. The Advisory Committee should be chosen early in the program by the student and the supervisor, in consultation, to reflect diverse expertise in the chosen field of research. The Advisory Committee has the following responsibilities toward the student:

- To establish a program of studies in consultation with the student, at the beginning of the program, with clear course requirements, expectations, and a projected timeline with milestones;
- To remain familiar with the research project and the student's progress;
- To meet with the student at least once yearly to review the student's progress, and then to report to the College of Graduate Studies and Research;
- To be prepared to recommend withdrawal or alternatives if progress is unsatisfactory;
- To be available for consultation with the student on academic or research-related matters, as well as other matters which may arise, including, but not limited to: supervision, intellectual property, ethics, authorship, best practices, academic integrity, acknowledgement, medical or compassionate situations, conflict, disputes, harassment, and discrimination;
- To provide feedback on the suitability of material for publication, and to suggest relevant journals for submissions;
- To examine the dissertation for defence in a timely manner;
- To provide opportunities for the student to present the research at a conference; and,
- To be willing to provide letters of reference upon request.<sup>15</sup>

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15 "Role of the Advisory Committee" adapted from: University of Saskatchewan. College of Graduate Studies and Research. 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research."

## The Role of the Chair of Advisory Committees

The role of the Chair of the Advisory Committee is to maintain the standards, fairness and integrity of the process for both the student and faculty. The Chair or designate is required to attend all meetings where a decision is made, and may be required to vote. The Chair completes the minutes of each meeting, records votes, and files the records with the graduate secretary.

It is a collective responsibility of all faculty members with standard or joint appointments in the School to participate in chairing committees.

Note that the Chair of the Advisory Committee cannot pass judgment on matters that are not normally addressed by the committee, such as academic dishonesty. Matters that cannot be addressed by the committee must be referred to the Executive Director of the School and the Dean of the College of Graduate Studies and Research for resolution. The Chair should provide all the relevant information in such a situation.

During the first year of residence, the student will select a dissertation research topic and prepare a dissertation proposal. The student will be guided in this effort by his/her supervisor and Advisory Committee. The proposal should clearly establish the objectives of the research, outline the theoretical context of the research, and identify the methods to be used to meet the research objectives. The proposal should be submitted and defended within nine months from first registration in the program.

The dissertation proposal is submitted to the student's supervisor for review. Once the proposal is judged to be satisfactory by the supervisor, copies of the proposal are provided to the other members of the Advisory Committee. The student will present the proposal and the committee will determine, by consensus, if the proposal provides a satisfactory basis for dissertation research. Written confirmation of approval must be filed with the graduate secretary by the committee chair. The supervisor will ensure that a copy of the approved dissertation proposal is placed in the student's School file.

For Ph.D. committees, the Chair of the Advisory Committee will chair the final dissertation defence. The Chair of the Advisory Committee is entitled, although not required, to ask questions. If the committee is able to come to a consensus about the quality of the dissertation, the Chair need only record the consensus decision. If consensus cannot be reached among the committee and a vote must be taken, the Chair must record the outcome of the vote. If the vote is tied, or where the committee and the external examiner do not agree on the vote, the Chair must vote. In this case, abstention by any member of the Examining Committee, including the Chair, will be interpreted as a negative vote. The student must be informed of the decision immediately after the examination.

Should further work by the candidate be required, the Chair of the Examining Committee must see that the committee states clearly, for the candidate and the College of Graduate Studies and Research, what work is to be done and whether or not the Examining Committee shall meet again before the dissertation can be accepted.

## Ethical Approval to Conduct Research

According to the University of Saskatchewan Ethics Office website, the U of S adheres to the following standards regarding research ethics:

- The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans
- The University Policy for Research Involving Human Subjects
- The University Research Integrity Policy

Additional guidance is provided by the Tri-Council Memorandum of Understanding entitled Schedule 2: Ethics Review of Research Involving Humans.<sup>16</sup>

The following list represents a broad overview of the range of research projects or situations that require review and approval by the Research Ethics Board:

- Research that will be published.
- Research that is funded or unfunded. Funding may be internal or external.
- Projects where participants are from inside or outside the university.
- Research that is conducted by students or faculty.
- Research projects that are conducted inside or outside the institution.
- Information that is collected directly from subjects or from existing records not in the public domain.
- Projects that are conducted in person or remotely (i.e., mail, electronic mail, fax, or telephone).
- Research designs that are observational, experimental, correctional, or descriptive.
- Pilot studies or fully developed projects undergo the same review process.
- The primary goal of the research is for teaching or training purposes, or the acquisition of knowledge.

Review is still required even if a similar project has been approved elsewhere.

The official website of the University of Saskatchewan Ethics Office ([www.usask.ca/research/ethics\\_review](http://www.usask.ca/research/ethics_review)) has complete and current information.

Environmental scientists may require research permits before fieldwork can commence. Obtaining these permits is the responsibility of the graduate student. Students who work with animal research with potential environmental impacts, and/or in parks or protected areas are also responsible for obtaining the necessary permits or permissions before undertaking their research.

### Seminar

The Seminar in Environment and Sustainability (ENVS 990) is a requirement for all Ph.D. students. To receive credit for this course, PhD students must attend and contribute to the School seminar for the first two years of their program. This program is chaired by a Faculty Coordinator who recommends to the Graduate Chair that credit for ENVS 990 be granted once the course requirements have been met. Presentations will provide the student with the experience of a formal seminar setting and the opportunity to share their research and scholarly activity with other students and faculty.

A student in the Ph.D. program is required to present two seminars. The first seminar will be based upon the student's research proposal and the second will be presented after permission to write the dissertation has been granted, but prior to defence; the second seminar will focus on the research the student has done. The first seminar should be 20 minutes in length; the second should be about 40 minutes in length. These requirements cannot be met by presenting at a conference.

Constructive feedback will be gathered by the ENVS 990 Coordinator and the student's supervisor or designate and shared with the presenter. If a student gives an unsatisfactory seminar or does not consistently attend seminars, the Seminar Coordinator will notify the student's Advisory Committee who will then decide on an appropriate ac-

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<sup>16</sup> University of Saskatchewan. Research Ethics. "Human." Website accessed July 8, 2011.

tion (for example, another seminar may be required). The Seminar Coordinator must inform the graduate secretary once a student has met the ENVS 990 presentation requirements.

### Requesting Extension of Time Limit

Students who have nearly reached the time limit of the program without completing program requirements should meet with their supervisor. If the supervisor supports an extension, the student may apply in writing by completing form GSR 205. This form must be accompanied by a detailed plan for completion of the program. The form and completion plan will be signed by the student and supervisor and then given to the Graduate Chair who will forward the documents to the College of Graduate Studies and Research for consideration.

The College of Graduate Studies and Research will grant time extensions when students have experienced significant difficulties or delays while actively working to finish the program. Delays caused by employment are not considered to be adequate reason for extension approval. Extensions are granted for the period of one academic term. If necessary, students may apply for a further extension. Evidence of significant progress will be required in order for further extensions to be approved.

### Permission to Write the Dissertation

Once the student has completed the data collection and analysis components of the dissertation research, an Advisory Committee meeting will be held to evaluate the quality of that work and to assess whether it is adequate to permit writing of the dissertation. The supervisor will determine when permission to write the dissertation should be requested from the Advisory Committee. Permission to write must be indicated in writing and placed in the student's file by the committee chair.

### Dissertation

The dissertation must be based on original research and demonstrate judgment and scholarship on the part of the candidate. It must represent a worthwhile contribution to environment and sustainability which would warrant publication, in whole or in part, in a recognized scholarly form. The quality of the dissertation is evaluated by an Examining Committee, consisting of the Advisory Committee and an external examiner from another university who is knowledgeable in the dissertation topic.

The graduate student will develop a dissertation under the guidance of the supervisor. Once the supervisor is satisfied with the quality of the dissertation, copies are provided to members of the Advisory Committee for review. The Advisory Committee will normally provide comments within three weeks and recommend any revisions in substance or format before the dissertation can be presented for defence. Once the Advisory Committee has approved the dissertation manuscript, the student will prepare final copies of the dissertation for submission to the Examining Committee. The number of required copies of the Ph.D. dissertation is normally seven when there is one supervisor. A final copy of the dissertation will be reviewed by the Graduate Chair to ensure that it conforms to the standards of the College of Graduate Studies and Research. The dissertation must be approved by the Graduate Chair before it can be submitted to the Examining Committee.

On approval of the dissertation manuscript, the Advisory Committee will make recommendations to the Graduate Chair on the appointment of an external examiner and the scheduling of the dissertation defence. The Graduate Chair will recommend to the College of Graduate Studies and Research on behalf of the School that the dissertation examination be scheduled.

At least five weeks prior to the defence, the supervisor must submit the necessary forms to the Graduate Chair, who will pass them on to the College of Graduate Studies and Research, with the assistance of the graduate secre-

tary, indicating the date, time, and proposed name of external examiner. Faculty must allow 2-3 days for the forms to clear the School office. The forms are reviewed at College of Graduate Studies and Research and approved within 2-3 working days. In the interim, neither the student nor any member of the Advisory Committee can provide the external examiner with a copy of the dissertation. Once approved, at least 4 weeks must be provided for reading of the dissertation and preparation for the defence. These time lines are strictly enforced.

### Dissertation Format

Students may prepare a dissertation by manuscript or a dissertation by traditional format. General guidelines for the dissertation format requirements are provided in the College of Graduate Studies and Research On-Line Guide for Writing Electronic Theses, Projects, and Dissertations, available at: [www.usask.ca/cgsr/for\\_students/etd.php](http://www.usask.ca/cgsr/for_students/etd.php)

### Ph.D. Dissertation by Manuscript

Completion of the Ph.D. by manuscript requires a series of papers [although a number is not specified, for purposes of clarification, three would be the norm] that are of a standard that would be acceptable for submission in a peer-reviewed academic journal of high quality. These papers must be approved by the supervisor and Advisory Committee, the same as for a dissertation document. The papers must demonstrate that they represent one coherent body of work. To ensure coherence, the papers must be linked with (1) an introduction summarizing and critiquing the research on the topic as a whole, and the rationale for the current study; (2) a brief section between each manuscript indicating its relationship to the dissertation in its entirety (this may be required by the committee); and (3) a general discussion (conclusion) which links the separate manuscripts and relates the student's research to the topic as a whole. Prior to engaging in this format, the supervisor must enter into a written agreement with the student over issues of data sharing, data confidentiality (if applicable), copyright, and authorship. Regulations are noted below.

Regulations related to the dissertation by manuscript are:

- (1) The dissertation must develop a general theme that guides the candidate's research work, including an introduction that outlines the general theme and the objectives, and a conclusion that draws out the overall implications of the research. The different chapters or sections must contribute to the general theme, but the substance of each chapter should focus on a different aspect of the research.
- (2) The candidate must be first author on each manuscript. There is no limit to the number of co-authors. There must be a preface to the dissertation that documents clearly the student's contribution to each multiple-authored work. The candidate's original contributions should be indicated, justifying the work's inclusion in the main body of the dissertation.
- (3) There must be material preceding the article or articles which sets the context of the work, and material that draws out the overall implications of the work. In some cases, it may be more appropriate to include the previously prepared material as an appendix, rather than in the main body of the dissertation.
- (4) Written permission to include copyright material in the thesis must be obtained from the copyright holder. This permission must also include the grant of an irrevocable, nonexclusive license to the University of Saskatchewan and the National Library of Canada (\*) to reproduce the material as part of the dissertation. While these licenses should normally be obtained at no cost, any payment which might be required by the rights holder is the exclusive responsibility of the dissertation writer. If the material has been published in an academic journal, copyright will normally have been assigned to the publisher of the journal. If the material has been published in another format (e.g., as part of a book, as a technical report, etc.) the copyright may not have been assigned to the publisher, but rather licensed by the author(s) for a specific purpose. The exact status of the rights attaching to the material must be determined. If the material has been co-authored, the status of the rights of each co-author in the work must be determined. The candidate must secure from any co-author of a published work a written waiver of all rights in favour of the University of Saskatchewan and the National Library of Canada (\*) so as to permit publication of the dissertation. In addition, written permission must be obtained from any co-author who retains copyright or the person to whom the co-author has assigned copyright, by way of a grant of an irrevocable nonexclusive license to the University of Saskatchewan and the National Library of Canada (\*), to reproduce material generated by the co-author as part of the dissertation. The dis-

sertation should indicate that articles have been printed either “with permission” or “under license” (either by a statement in the preface or on the first page of each article). Copies of the letters of permission or licenses should be submitted to the College of Graduate Studies and Research along with the dissertation, prior to the defence.

- (5) (\*) License and waiver in favour of the National Library of Canada is required for Ph.D. dissertations only.
- (6) For unpublished work (e.g., a paper that has been submitted but not yet published), a statement concerning the status of any dealing or contemplated dealing with the copyright or the auspices under which the work was prepared must be on the first page of the separately prepared, unpublished work. If copyright has already been legally assigned, written permission, as described in (4) above, must be obtained.
- (7) For each published article, a complete citation, including first and last page number in the journal publication, and recognition of the copyright holder must be printed on the front page of the article.
- (8) The previously published or prepared materials should be assigned page numbers that are sequential within the dissertation. To reduce confusion, it is preferable to remove the journal page numbers (This information is included in the citation).
- (9) Journal articles typically contain many more words per page than a dissertation. Such articles will be prorated to assess their acceptability within the page length limitation specified for the dissertation.
- (10) A list of references will form a part of most journal articles or manuscripts that are reproduced for inclusion in a dissertation. References should remain self-contained, within each article, if that is how they appear in the original document. The references for the new material in the dissertation should be listed at the end as usual. Material that is referenced in one or more of the reproduced articles or manuscripts should be included in the main dissertation reference list only if it is also cited in the new material.
- (11) The merits of the dissertation will be judged on the same criteria and by the same methods (external examiner and committee) as a conventional dissertation. The judgment of acceptance of the dissertation is made independent of any judgment (favourable or unfavourable) related to the acceptance of individual papers. Further information about formatting etc., is available at the website of the College of Graduate Studies and Research at: [www.usask.ca/cgsr/for\\_students/etd.php](http://www.usask.ca/cgsr/for_students/etd.php).

### Oral Defence of the Dissertation

Following approval of the proposal, the student will complete the research and write the dissertation, meeting with the supervisor at regular intervals throughout the process. Following the guidelines of the College of Graduate Studies and Research, the supervisor will review the completed dissertation. When both believe it is ready, the dissertation will be submitted to the Advisory Committee. Revisions will be made if required by the Advisory Committee. Following approval of the Advisory Committee for examination, an Examining Committee will be struck. The student will present and defend her/his research in an open forum.

### Permission to Defend

Prior to defending the dissertation, the student must obtain permission to defend from the committee members. Once a full draft of the dissertation is completed and the supervisor has had an opportunity to review and make comments, the student will present the dissertation to her/his committee members for review. The committee may require further revisions. Once the committee is satisfied that the dissertation is ready, it will grant its permission to defend. This decision must be recorded and submitted to the Graduate Chair, who will then advise the College of Graduate Studies and Research.

### Appointment of the Dissertation Examining Committee

The dissertation Examining Committee for a Ph.D. student consists of the Advisory Committee and an external examiner appointed by the Dean of the College of Graduate Studies and Research. The external examiner is typically a member of faculty at another university, and must be a recognized authority on the dissertation subject. The Advisory Committee will provide names of recommended external examiners, with *curricula vitae* and justification for their selection, to the Graduate Chair, who will forward to the Dean of the College of Graduate Studies and

Research the names, addresses, and telephone numbers of three individuals, in order of priority, who are qualified to act as the external examiner.

The external examiner submits a Pre-defence Report to the Dean using Form GSR 403.1. The student cannot have previously discussed their research with the external examiner nor had any personal relationship with the examiner. Following examination, the external examiner submits a report to the Dean using Form GSR 403.2.

### Examination of the Dissertation

The examination of the dissertation is a public, oral examination conducted by the dissertation Examining Committee. It is usually 2-3 hours in length, and limited to work done by the candidate for the dissertation and to knowledge of directly related material. At the conclusion of the examination, the dissertation Examining Committee meets to determine if the dissertation, and its defence by the student, meet the requirements for the degree. The Examining Committee members will decide by consensus or majority vote whether the written dissertation and oral defence is:

- i) passed without revisions;
- ii) passed with revisions (major or minor);
- iii) to be re-examined;
- iv) rejected.

The student is advised immediately of the dissertation Examining Committee's decision.

### After the Defence

Ph.D. students are required to submit a bound copy of their dissertation to the School of Environment and Sustainability, and one bound copy or CD to the dissertation supervisor. An electronic copy of the dissertation is to be submitted to the College of Graduate Studies and Research. The student is responsible for delivering or arranging to have the bound copies of his/her dissertation delivered to the supervisor and to the School, and to submit their dissertation electronically to the College of Graduate Studies and Research.

## Courses

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### Core Courses

#### ENVS 801.3 Ecosystem Science and Sustainability

**Instructors:** Vladimir Kricsfalusy and Christy Morrissey

**Required For M.SEM. and M.E.S. Programs**

An introduction to how principles and concepts of ecology and ecosystems science are applied to advance environmental sustainability. Students will gain a solid understanding of how natural systems function, and how scientists apply their understanding and uncertainties about ecosystems to address environmental management problems and to advance environmental sustainability.

#### ENVS 802.3 Human Dimensions of Environmental Change

**Instructors:** Marcia McKenzie and Doug Clark

**Required For M.SEM. and M.E.S. Programs**

This course explores the past and present interactions between people and the natural world. It addresses ways that environment has molded human societies and ways that people have altered nature. Contemporary concerns for environmental sustainability are introduced by examining human entanglement with a range of natural and modified systems.

#### ENVS 803.3 Research in Environment and Sustainability

**Instructors:** Bram Noble and Cherie Westbrook (Department of Geography and Planning, College of Arts and Science)

**Required For M.E.S. Program**

The purpose of this course is to introduce graduate students to conceptual, practical, and ethical issues in conducting interdisciplinary research about environment and sustainability. By the end of the course, students will have a research plan from which their proposal and research activities can be developed.

#### ENVS 804.3 Decision-making for Environment and Sustainability

**Instructors:** Doug Clark and MJ Barrett

**Required For M.SEM. Program**

Intended to enhance students' professional and scholarly effectiveness, this course introduces an interdisciplinary approach to environmental conservation problems (from the policy sciences) that enables them to critically appraise and constructively engage with environmental and sustainability policy processes, and develop functional understanding of conventional institutional approaches to environmental management and new emergent approaches.

#### ENVS 805.3 Environmental Data Analysis and Management

**Instructors:** Bing Si and Andrew Ireson

**Required For M.SEM. Program**

Environmental data management is complex because of its volume, qualitative and quantitative forms, and temporal and spatial characteristics. This course introduces students to statistical, qualitative, and visual methods of problem solving and data reduction and representation and describes methods for managing large and complex data sets.

### ENVS 990 Seminar in Environment and Sustainability

**Co-ordinator: Paul Jones**

**Required For M.E.S., M.SEM. and Ph.D. Programs**

The ENVS 990 Seminar Series features topics relevant to environment and sustainability, presented by speakers from a variety of academic and non-academic backgrounds. M.E.S. and Ph.D. students are also required to present their research in the seminar (please refer to Section 5 of this handbook for more information).

### ENVS 992.6 Project in Environment and Sustainability

**Required For M.SEM. Program**

The requirements for ENVS 992.6 are discussed in the section regarding Administrative Guidelines.

### ENVS 994 Research in Environment and Sustainability (Thesis)

**Required For M.E.S. Program**

The requirements for ENVS 994 are discussed in the section regarding Administrative Guidelines.

### ENVS 996 Research in Environment and Sustainability (Dissertation)

**Required for Ph.D. Program**

The requirements for ENVS 996 are discussed in the section regarding Administrative Guidelines.

## Restricted Electives Offered in 2011/2012

### ENVS 811.3 Multiple Ways of Knowing in Environmental Decision-making

**Instructor: MJ Barrett**

This course examines multiple ways of knowing (epistemologies) used in environmental decision-making, including, but not limited to, Aboriginal knowledge systems. The course supports active engagement with epistemological difference, and asks students to examine their own decision-making beliefs and practices in the context of colonization. Applications to the legal “duty to consult” with Aboriginal peoples, in particular where they are affected by decisions made in relation to public lands, waters, and other resources will be addressed.

### ENVS 821.3 Sustainable Water Resources

This course will rigorously explore water resource sustainability in western Canada from physical, chemical, biological, socio-economic, and technological perspectives. Biophysical influences on water abundance and quality, current threats to water resources, and efforts to provide for sustainable management of water resources will be examined.

### ENVS 831.3 Current Issues in Land Reclamation and Remediation

**Instructor: Charles Maulé**

Current issues in land reclamation and remediation are examined. The impact of human activity in a variety of environments is examined and strategies for reclamation and remediation are investigated. Biophysical factors are the emphasis of the course; however, the context of social and economic issues are incorporated.

### ENVS 898.3 Biodiversity Conservation and Sustainability

**Instructor: Vladimir Kricsfalusy**

This course is designed to introduce students, in an integrative manner, to the field of biodiversity conservation and various aspects of sustainable development. Understanding biodiversity and its management requires an in-

terdisciplinary approach with particular reference to mechanisms of change and human impacts on the environment.

### ENVS 898.3 Environmental Economics and Policy Making

**Instructor: Ken Belcher**

This course is offered jointly with BPBE 430 Natural Resource Economics.

This course focuses on developing a formal understanding of natural resource use and resource and environmental policy using economic models. The focus of the course will be on renewable resources with some consideration of the unique characteristics of non-renewable resources. The course will develop detailed analyses of existing and proposed natural resource and environmental policy using the economic framework to evaluate the structure, efficiency, effectiveness and flexibility of these policies. Through this approach the student will develop the tools to understand and critically evaluate environmental policy and also build a familiarity with the primary policy measures and tools.

### ENVS 898.3 Legal Issues and the Environment

**Instructor: Marie-Ann Bowden**

Designed for graduate students, particularly in the areas of Engineering, Agriculture, Resources and Environmental Studies with no legal background. This course explores the legal aspects of environmental protection, environmental offences, constitutional law, environmental impact assessment, environmental audit and professional responsibility in relation to environmental advice and decision-making.

## Unrestricted Electives Offered in 2011/2012

### ENVS 898.3 Chemicals in the Environment

**Instructor: Paul Jones**

This course will supply the student with an understanding of the processes that control the movement of organic and inorganic contaminants in the environment. The structure and uses of monitoring programs to evaluate environmental contamination, and temporal and spatial trends in chemical contamination will be discussed. Local and global methods for chemical regulation and management will be addressed in the context of society and economics. Finally, the use of modeling methods to predict the environmental fate and effects of chemical contaminants will be presented.

### ENVS 898.3 Environmental Issues and Negotiations

**Instructors: Paul Jones and Markus Hecker**

This course aims to help students develop a comprehensive understanding of the interdisciplinary nature of environmental issues, and will teach them the roles that science and society have in the assessment and management of such issues. The class will elucidate the perspectives of the different stakeholders such as government, industry, scientists, lawyers, lobbyists, etc. that are typically involved in the assessment and management of environmental issues. It will be taught in an open format using classic (e.g. lectures by instructors and guest speakers) and interactive (group discussions/negotiations; student projects) elements.

### ENVS 898.3 Sustainability Case Studies

**Instructors: Joe Schmutz**

The course goal is to use critically-constructive interdisciplinary analysis in a case-studies framework to allow students to recognize and 'learning-from-the-past' to be able to influence future forces that may enhance or detract from achieving sustainability. Studies can address products (DDT, wind turbines), management approaches (improving energy efficiency, forest-stewardship certification), or personal or community-wide initiatives (community-supported agriculture, doctors without borders).

### ENVS 898.3 Multi-Level Environmental Governance

**Instructors: Maureen Reed and Jeremy Rayner (Johnson-Shoyama Graduate School of Public Policy)**

This course examines theoretical and practical issues associated with defining, describing and evaluating environmental governance at multiple scales. We identify a range of environmental problems and consider various actors, institutional forms, and ideas about governance that shape environmental policies and practices, particularly in Western contexts.

### ENVS 898.3 Introductory Numerical Modelling for Environmental Scientists

**Instructor: Andrew Ireson**

The purpose of this course is to provide graduate students with a set of modelling skills to allow them to develop their own numerical models to solve problems of coupled flow and transport in porous media. The course requires a basic understanding of groundwater flow and transport processes. A particular set of numerical methods for solving sets of partial differential equations are introduced to the student. Models are written in MATLAB using ODE solvers. Specific applications include models for water supplies in aquifers, contamination in aquifers, and water and energy balances in soils. This will also provide the student with an in-depth understanding of widely used commercial and non-commercial software such as USGS MODFLOW. The models help the student to think through the physical processes and interpret field data.

**Please note that the School of Environment and Sustainability maintains a list of unrestricted electives which may be of interest to students. Please contact Irene Schwalm for more information regarding these courses.**

## Students

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### The Graduate Student Community

The students enrolled in the School of Environment and Sustainability are a vital part of the School community. Given the broad scope of the field of environment and sustainability, students come to the School from many different disciplinary backgrounds, and have diverse academic and research interests. A vibrant graduate student community provides intellectual stimuli for the School's students, as well as a network of social support for those students who are new to Saskatoon.

### School of Environment and Sustainability Students' Association (SEnSSA)

All graduate students in the School of Environment and Sustainability are automatically considered members of SEnSSA. The mandate of SEnSSA is as follows:

- a) to provide for the administration of the activities of the graduate students within SEnSSA;
- b) to promote the unity and welfare of graduate students within SEnSSA;
- c) to serve and further the intellectual, cultural, and social activities of graduate students within SEnSSA;
- d) to promote and maintain communication with graduate students within the Graduate Students' Association (GSA) of the University of Saskatchewan; and,
- e) to promote sustainability in all its endeavours.

More information about SEnSSA can be found on its website at: <http://www.usask.ca/groups/senssa>

### The Graduate Students' Association

The Graduate Students' Association (GSA) is the campus-wide body which advocates for the needs and concerns of graduate students at the University of Saskatchewan. The GSA represents graduate students on many University committees.

Graduate students may contact the GSA for information or assistance with problems related to University affairs.

Graduate Students' Association  
Emmanuel & St. Chad, 1337 College Drive

Mailing Address:  
Room 110 Place Riel  
1 Campus Drive  
Saskatoon, SK  
Canada S7N 5A3

Telephone: (306) 966-8471  
Facsimile: (306) 966-8598  
Website: [www.gsa.usask.ca](http://www.gsa.usask.ca)

## Finances and Funding

### The Cost of Living

Tuition fees at the University of Saskatchewan are among the lowest in Canada. The following cost estimates for 2011 - 2012 (in Canadian funds) are based on a full graduate level course load for one academic year (September to August).

	M.SEM.		M.E.S. and Ph.D.	
	Canadian Students	International Students	Canadian Students	International Students
Tuition (September 1 – August 31)	\$6,446 (\$1,103 per four-month term, plus \$3,137 for the ENVS 992 project)	\$9,667 (\$1,654 per four-month term, plus \$4,705 for the ENVS 992 project)	\$3,309 (\$1,103 per four-month term)	\$4,962 (\$1,654 per four-month term)
Student Fees	\$580	\$580	\$580	\$580
Books and Supplies	\$500 - \$1,000	\$500 - \$1,000	\$500 - \$1,000	\$500 - \$1,000
Accommodation				
Residence – dormitory with meal plan (September 2011 to April 2012)	\$4,400 - \$7,031*	\$4,400 - \$7,031*	\$4,400 - \$7,031*	\$4,400 - \$7,031*
Off-campus accommodation (this is a minimum estimate, and includes rent, utilities, food)	\$9,232	\$9,232	\$9,232	\$9,232
Transportation (Saskatoon Transit Bus Pass – 12 months)	\$852	\$852	\$852	\$852
Other Expenses (laundry, clothing, etc.)	\$2,000	\$2,000	\$2,000	\$2,000
Estimated Total	\$14,778 - \$20,170	\$17,999 - \$23,331	\$11,641 - \$17,033	\$13,294 - \$18,626
<p>* 2011 rates for Seager-Wheeler (6-person/month apartment-style accommodations, plus \$150/month for groceries, versus double-occupancy accommodation at Voyaguer Place, which includes meals)</p> <p>Some costs estimated using the “Money Matters” site: <a href="http://explore.usask.ca/moneymatters/">http://explore.usask.ca/moneymatters/</a>. Site accessed July 11, 2011.</p>				

### University Graduate Awards

All those with grade point averages of 80% or higher who successfully apply to the School’s thesis-based programs will be considered for support or scholarship on the basis of merit. Several types of financial support are available through the School of Environment and Sustainability and the University of Saskatchewan. Eligible students may hold other awards, such as those provided by the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council, and the Canadian Institutes of Health Research. University of Saskatchewan Graduate Scholarships or Graduate Teaching Fellowships are granted annually across all academic units to candidates who have strong academic records. Graduate Scholarships are valued at \$18,000 for Ph.D. students and \$15,000 for thesis-based Master’s students. Graduate Teaching Fellowships are valued up to \$15,000 a year.

In 2005, the Dean's Scholarship was introduced. This scholarship is valued at \$20,000/year for Ph.D. students and \$18,000/year for Master's students, and may be renewable for up to one additional year for Master's students and for up to two additional years for Ph.D. students, if progress is deemed satisfactory. Please refer to the School's website ([www.usask.ca/sens/graduate\\_student\\_awards.php](http://www.usask.ca/sens/graduate_student_awards.php)) for more information about graduate awards.

## National Awards

For Canadian citizens and permanent residents of Canada registered in the thesis programs, the principle sources of graduate awards are:

### **Natural Sciences and Engineering Research Council (NSERC)**

350 Albert Street

Ottawa, ON K1A 1H5

Website: [www.nserc.ca/index.htm](http://www.nserc.ca/index.htm)

### **Social Sciences and Humanities Research Council (SSHRC)**

350 Albert Street, Box 1610

Ottawa, ON K1A 1H5

Website: <http://www.sshrc.ca/home-accueil-eng.aspx>

### **Canadian Institutes of Health Research (CIHR)**

Room 97, 160 Elgin Street

Address Locator: 4809A

Ottawa, ON K1A 0W9

Website: [www.cihr-irsc.gc.ca/](http://www.cihr-irsc.gc.ca/)

Contact each funding agency for specific application instructions and deadlines. Supervisors and/or the Graduate Chair will be able to provide guidance regarding scholarship and award applications.

**Please note that the School of Environment and Sustainability maintains a file regarding graduate awards and scholarships. Please contact Irene Schwalm for more information at [irene.schwalm@usask.ca](mailto:irene.schwalm@usask.ca) or 966-1985.**

## Master of Sustainable Environmental Management Checklist

The following checklist itemizes the benchmark tasks normally completed during the year-long Master of Sustainable Environmental Management program. This list is not presented in any set order, and the program is not limited to the items on this list.

<b>DUTIES:</b>	<b>RESPONSIBILITY OF:</b>
Course registration Required Courses: ENVS 801, ENVS 802, ENVS 804, ENVS 805, ENVS 990, ENVS 992, GSR 960 (eighteen credits) Six credits of restricted electives Six credits of unrestricted electives	Student (with guidance and advice from the Graduate Chair)
Select Faculty Advisor	Student with recommendation from the Graduate Chair and the Admissions and Awards Committee
Select research topic and prepare project proposal	Student with advisor
Participate in proposal symposium	Student
Receipt of ethical approval to conduct research; refer to the ethics website: <a href="http://www.usask.ca/research/ethics_review/faqs.php">www.usask.ca/research/ethics_review/faqs.php</a>	Student, prior to field work
Complete Master's Program of Studies Form	Student and advisor
Complete Graduate Student Progress Report	Advisor
Data Collection and Analysis	Student
Completion of Project	Student
Copy of Project Submitted to School	Student

## Master of Environment and Sustainability Checklist

The following checklist itemizes the benchmark tasks normally completed during the first and second years of the Master of Environment and Sustainability program. This list is not presented in any set order, and the program is not limited to the items on this list.

### Year One

<b>DUTIES:</b>	<b>RESPONSIBILITY OF:</b>
Course registration Required Courses: ENVS 801, ENVS 802, ENVS 803, ENVS 990, ENVS 994, GSR 960 Three credit units of electives approved by the advisory committee	Student
Select members for Graduate Advisory Committee	Supervisor with student
Select research topic and prepare thesis proposal	Student with supervisor
Advisory committee meeting: approval of proposal	Meeting is called by the Supervisor, decision is made and minutes must be recorded and filed with the graduate secretary by the Chair
Receipt of ethical approval to conduct research; refer to the ethics website: <a href="http://www.usask.ca/research/ethics_review/faqs.php">www.usask.ca/research/ethics_review/faqs.php</a>	Student, prior to field work
Complete Master's Program of Studies Form	Student, supervisor and/or Chair
Complete Graduate Student Progress Report	Supervisor; Chair records minutes of meeting

### Year Two

<b>DUTIES:</b>	<b>RESPONSIBILITY OF:</b>
Data Collection and Analysis	Student
Permission to Write	Student: Chair records minutes of meeting and files decision
Seminar – written confirmation must be filed in the student's record	Student is responsible for scheduling and presenting. Supervisor/ENVS 990 Coordinator records and confirms that seminar requirement has been met
Permission to Defend	Student, Chair records minutes of meeting (or e-mail correspondence) and files decision
Thesis Submission (multiple copies)	Student
Thesis Defence	Student
Final Copies of Thesis	Student

## Doctor of Philosophy Checklist

The following checklist itemizes the benchmark tasks normally completed during the first, second, and third years of the Doctor of Philosophy program. This list is not presented in any set order, and the program is not limited to the items on this list.

### Year One

<b>DUTIES:</b>	<b>RESPONSIBILITY OF:</b>
Course registration Required Courses: ENVS 990, ENVS 996, GSR 960 Six credit units approved by the advisory committee	Student
Select members for Graduate Advisory Committee	Supervisor with student
Receipt of ethical approval to conduct research; refer to the ethics website: <a href="http://www.usask.ca/research/ethics_review/faqs.php">http://www.usask.ca/research/ethics_review/faqs.php</a>	Student, prior to field work
Complete Ph.D. Program of Studies form	Student, supervisor and/or Chair
Complete Graduate Student Progress Report	Supervisor; Chair records minutes of meeting
Qualifying Exam	Decision about qualifying exam must be filed in writing to the graduate secretary by the Chair in the first eight months
Comprehensive Exam (no later than 16 months)	Student's reading list must be approved by the Committee and filed by the supervisor with the graduate secretary 3 months prior to the exam. Examination questions must be filed by the supervisor or committee chair. Minutes of the examination and committee decision are to be recorded and filed with the graduate secretary and committee chair
Dissertation Proposal	Student
Graduate Student Progress Report	Student, Supervisor, and/or Chair

### Years Two and Three

<b>DUTIES:</b>	<b>RESPONSIBILITY OF:</b>
Graduate Student Progress Report – must be filed annually	Student, Supervisor, and/or Chair
Data Collection and Analysis	Student
Seminars – written confirmation must be filed in the student's record	Student is responsible for scheduling and presenting two seminars. Supervisor/ENVS 990 Coordinator records and confirms that seminar requirement has been met
Permission to Write	Student: Chair records minutes of meeting and files decision
Permission to Defend	Student, Chair records minutes of meeting (or e-mail correspondence) and files decision
Dissertation Submission (multiple copies)	Student
Dissertation Defence	Student
Final Copies of Dissertation	Student