



BIOL*4500 Natural Resource Policy Analysis -

DRAFT

Winter 2022

Section(s): 01

Department of Integrative Biology

Credit Weight: 0.50

Version 1.00 - December 09, 2021

1 Course Details

1.1 Calendar Description

This course explores the role of science in management decision-making for Canadian renewable natural resources, including legal, political, social and economic factors. The course will rely on active learning by students working in collaborative groups, leading to deeper understanding of real-world issues while developing professional skills that are essential for those who wish to make significant contributions at the science-management interface. Four themes will be explored: 1) acts/policies/guidelines, 2) science and other knowledge systems, 3) management strategy evaluation, and 4) decision analysis & adaptive management.

Pre-Requisites: 15.00 credits including BIOL*4150

Restrictions: Registration in Semester 7 or 8.

1.2 Course Description

This course explores the role of knowledge systems in management decision-making for Canadian renewable natural resources generally, and a student's selected case study specifically. Four major themes will be explored in this course: 1) Acts/Policies/Guidelines, 2) Indigenous/Local/Science knowledge systems, 3) Bayesian Belief Networks and 4) Management Strategy Evaluation. The course will deliver content through a combination of class-based open discussions and active learning by students working in collaborative groups. Students will transform published scholarship into ideas for application by participating in a series of online discussion groups that are focussed on selected aspects of course themes. Throughout the course, each student will develop sections of their case study in Canadian natural resource management, and apply each of the course themes to that case. Grading for this course will be based on (a) online submission and classmate peer-review of draft case study report sections, and (b) online submission of case study final report for evaluation by the Instructor. Ultimately, it is intended that the student's final case study report

could/should serve as example of their conceptual understanding and communication skills, suitable for submission with a professional B.Sc. *curriculum vitae* for future position/employment as a resource management ecologist

1.3 Timetable

Lectures

1300h-1420h Tuesday via Zoom

1300h-1420h Thursday via Zoom

1.4 Final Exam

There is no Final Exam for this offering of the course.

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Stephen Crawford
Email:	scrawfor@uoguelph.ca
Telephone:	+1-519-824-4120 x53544
Office:	SCIE 2474

2.2 Office Hours

Individual Zoom discussions with Instructor scheduled on request

3 Learning Resources

Course Resources

Textbook: There is no required text. We will be using articles from the published scholarly literature.

CourseLink: This course will make use of the University of Guelph's course website on D2L (via CourseLink). Students will be responsible for all information posted on the CourseLink page for BIOL*4500.

PEAR 2: This course will make extensive use of the University of Guelph's Peer Evaluation, Assessment and Review (PEAR 2) website for student submissions and review of draft sections for the case studies. Please make sure that you are successfully able to login to PEAR 2 (<https://pear.opened.uoguelph.ca/>) using your central login ID and password.

4 Learning Outcomes

Learning Outcomes

By the end of this course, students will be able to:

1. Knowledge Objectives:

- a. Identify the components of Acts/Policies/Guidelines that determine how natural resources are managed in Canada;
- b. Interpret the explicit and implicit roles of science in the development of management programs;
- c. Prioritize the key uncertainties (natural or social) that science must address for effective management;
- d. Evaluate current management programs on the basis of interaction between science, models and management decision-making;
- e. Create a vision of natural resource management that would provide Canada with an optimal balance of non-human and human needs.

2. Skill Objectives:

- a. Assemble key science-related concepts from complex legal and policy and management documents into an understandable form;
- b. Refine the logical structure of management plans to evaluate the role of science and models in decision-making;
- c. Adapt recommendations from primary and technical literature to improve effectiveness of science and modeling in management programs;
- d. Combine ideas from Local, Indigenous and Science knowledge systems to improve design of management programs;
- e. Synthesize the complex legal, political, social and economic factors in a manner that specifically addresses the fundamental objectives of renewable resource management in Canada.

3. Attitude Objectives:

- a. Listen to what colleagues say effectively enough to return their ideas and opinions in your own words;
- b. Assist team-mates in heterogeneous groups to learn the assigned knowledge and skills;
- c. Value the diversity of cultural experience and opinion; protecting differences and seeking similarities;
- d. Internalize the values and skills of this course in a way that significantly improves your ability help real people deal with real management issues.

By satisfying these objectives, students will create broad conceptual knowledge and adaptive

vocational and generic skills that can readily be transferred from a classroom to a workplace environment. Throughout the course, special emphasis will be placed on five learning outcomes – critical/creative thinking, literacy, global understanding, communication, and professional/ethical behaviour.

5 Teaching and Learning Activities

Individual Case Study: Each student will select a real-world ecological issue/conflict in Canadian natural resource management as a case study to explore issues associated with each of the course themes. The individual case studies will be informed by a combination of personal communications with people directly involved in the issue, news articles/commentaries, and primary/technical literature. Students will submit written drafts of sections for their case studies that will be reviewed by classmates, and ultimately reviewed/evaluated as a final submission by the Instructor using the UG Peer Evaluation, Assessment and Review (PEAR 2.0) online system. Due to the time-sensitive demands of PEAR 2.0 peer-reviews, late submissions cannot be accepted/processed. It is the student's responsibility to ensure that at least a working draft of each submission has been submitted prior to the deadline (replacement submissions are allowed Courselink > Dropbox; the last submission will be transferred by the system to PEAR 2.0).

Regrade Policy: In the event that a student wishes to submit a regrade request for any component of their course grade, the following requirements will apply:

- 24-hour rule before regrade email requests to Instructor will be accepted;
 - MINIMUM 1.5% final grade increase requested/justified;
 - paragraph(s) clearly and fully explaining specific component(s) of grading rubric appealed, with clear explanation about specific submission/rubric rationale for grade increase; and
 - all regrade requests subject to independent, overall re-evaluation (i.e. could result in decreased grade).
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6 Assessments

6.1 Marking Schemes & Distributions

PEAR 2 Online Submission and Student Peer-Review of Case Study Draft Sections (60%)

1. Case Study Introduction (Context/KEU) (10%)
2. Acts/Policies/Guidelines (10%)
3. Knowledge Systems (10%)
4. Bayesian Belief Networks (15%)
5. Management Strategy Evaluation (15%)

PEAR 2 Online Submission and Instructor Evaluation of Case Study Final Report (40%)

7 Department of Integrative Biology Statements

7.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

7.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.

<https://www.uoguelph.ca/counselling/>

- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.selfregulationskills.ca/>

7.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) <http://www.e-laws.gov.on.ca/index.html>. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar. (<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

7.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses
<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such

changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
