

GEOG 360: Analyzing Sustainability

Instructors

Navin Ramankutty Room 627 Burnside Hall navin.ramankutty@mcgill.ca Office hours: 3-4 pm Wed & Fri	Verena Seufert Room 510 Burnside Hall verena.seufert@mail.mcgill.ca Office hours: 11am-noon Wed & Thurs
Sarah Wilson (TA): Room 313 Burnside Hall; sarah.wilson@mail.mcgill.ca Office hours: Lab 1: Wed, Jan 23, Noon-1pm Lab 2: Wed, Feb 6, Noon-1pm Lab 3: Fri, Feb 22, 11am-noon Lab 4: Wed, Mar 20, Noon-1pm Lab 5: Wed, Apr 10, Noon-1pm	

If all nations decided to curtail global warming by 2°C, how much would we need to cut emissions and what are the ethically responsible ways to distribute these reductions? How can we manage trade-offs between producing food and degrading water quality? Who pays and who benefits when we create a new national park in a developing country?

If these questions intrigue you, and if you would like to learn some analytic tools used to address such questions, this course is for you. Transitioning to sustainability is one of the great challenges of this century. While we may not have all the solutions needed, major advances have been made in recent years to deal with complex sustainability challenges. This course will provide you with experience in using some of the most promising tools and approaches. The course is structured to encourage student participation and discussion, and learning by doing.

CALENDAR COURSE DESCRIPTION

Examines challenges to sustainability through a series of case studies to illustrate the analytical approaches used to understand the linkages between scientific-technological, socio-economic, political-institutional, ethical, and human behavioural aspect of systems. Includes cases that are thematic and place-based, national and international, spanning from the local to global scales.

PREREQUISITES: ENVR 201 or equivalent; and GEOG 203 or ENVR 200 or ESYS 200 or equivalent; or permission of instructor.

Note: Students are welcome from a diversity of backgrounds, but you are expected to have some experience (and motivation) in working with analytical methods. Useful background include courses in systems modeling, introductory statistics, quantitative methods, or GIS.

Strong knowledge of Microsoft Excel is required (e.g., formula entry, absolute versus relative cell references, etc.).

COURSE STRUCTURE: 3 credits. The course will be taught on Wed/Fri from 9:35-10:55am. It is structured as 5 modules, dealing with different case studies/analytical tools. A module will typically be covered over 4-5 meetings, scheduled as shown on the next page:

Preliminary Course Outline, Winter 2013

WEEKLY SCHEDULE (DRAFT)

Wk	Dates	Theme	Wed activity	Instructor	Fri activity	Instructor
1	Jan 9, 11	Introduction	Intro. to class	Shared	Excel tutorial	Shared
2	Jan 16, 18	Climate change ethics	Lecture	Navin	Lab	Navin
3	Jan 23, 25		Lab	Navin	Paper discussion	Navin
4	Jan 30, Feb 1	Marine protected area design	Lecture	Verena	Lab	Verena
5	Feb 6, 8		Lab	Verena	Presentation	Verena
6	Feb 13, 15		Presentation	Verena	TBD	(Navin away)
7	Feb 20, 22	Cost-benefit analysis of national park	Lab	Navin	Lab	Navin
8	Feb 27, Mar 1		Paper discussion	Navin	Midterm Exam	Shared
9	Mar 6, 8	STUDY BREAK				
10	Mar 13, 15	Sustainable fisheries	Lecture	Verena	Lab	Verena
11	Mar 20, 22		Lab	Verena	Presentation	Verena
12	Mar 27, 29		Presentation	Verena	GOOD FRIDAY	
13	Apr 3, 5	Tradeoffs between food and water pollution	Lecture	Navin	Lab	Navin
14	Apr 10, 12		Lab	Navin	Paper discussion	Navin
15	Apr 16	Final discussion	Discussion	Shared		

Last day to add/drop class = Jan 22 (Tues).

LEARNING OUTCOMES, ASSESSMENT & TEACHING STRATEGIES

Outcomes	Assessment	Strategies
Recognize the different dimensions of sustainability	<ul style="list-style-type: none"> Paper summaries and contribution to discussions. 	<ul style="list-style-type: none"> Reading papers, writing summaries, participating in discussions
Use existing tools that measure different aspects of sustainability	<ul style="list-style-type: none"> Lab reports/presentations Mid-term and final exam 	<ul style="list-style-type: none"> Working on problem solving assignments
Interpret the results of the analysis within a broader context (i.e., different dimensions of sustainability)	<ul style="list-style-type: none"> Paper summaries and contribution to discussions. Lab reports/presentations Final exam 	<ul style="list-style-type: none"> Reading papers, writing summaries, participating in discussions Working on problem solving assignments

COURSE EVALUATION

Lab Reports (3)/Presentations (2)	50%
Summaries of papers (3)	10%
Mid-term exam (in-class)	10%
Final exam (take-home)	25%
Overall class participation*	5%

*** NOTE: CLASS ATTENDANCE IS MANDATORY FOR GOOD PERFORMANCE**

ASSIGNMENT DUE DATES

- Lab reports are due at the last meeting for each module (i.e., the paper discussion class) – follow instructions on assignment handout.
- Journal article summaries are due at the beginning of the paper discussion period
- Final exam (during final exam period, date TBD)

Lab reports

Follow the instructions on the assignment hand-out for completing the lab reports. To be submitted as a hard-copy in class.

Presentations

For two assignments (marine protected areas, sustainable fisheries) you will work in small groups and present your work together. A group grade will be assigned to the presentation. In addition, all students will complete an evaluation of their own contributions, and their peers' contributions to the group project. Based on this peer-evaluation, as well as the instructor's own observations of contributions to group project, individual grades may be adjusted up or down from the group average grade.

Paper summaries

Maximum ½ page summary of each article (see handout for details). To be submitted in-class.

Participation

Participation is a critical component of this class! Sustainability issues are complex and can only be fully understood by analyzing and debating each case from multiple perspectives. We have thus tried to design the class to allow as much student interaction and discussion as possible, and hope that you will take advantage of this opportunity.

Exams

The exams will test your ability to apply an analytical tool like the ones we have explored in class to solve a problem posed to you, and to analyze the results of the analysis in the broader context of the multiple dimensions of sustainability. It will be similar to the labs, but you will work on your own.

Right to submit in English or French written work that is to be graded

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/srr/honest/) for more information).

Disability

If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this.