COURSE OUTLINE: GEOG 3471 –Environmental Impact Assessment (W) 2020

Prerequisite(s): Geography 1150 or 1170 or permission from the Chair of the Department of Geography and the Environment

Required Text: Noble, B. F. (2014). *Introduction to Environmental Assessment: A Guide to Principles and Practice,* 3d Edition. Don Mills: Oxford University Press. ISBN 978-0-19-900634-2

Supplementary: Hanna, Kevin S. (2015). *Environmental Impact Assessment: Practice and Participation,* 3rd edition. Oxford and New York: Oxford University Press.

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Office Hours: Office location: RC 2006E Thunder Bay Campus. Office hours are after class on M and W and by appointment. Feel free to message me at any time.

Communication: Please use the email address above for all digital communications. I will not monitor the D2L or other communication options to avoid missed messages. Please consult the reference materials before emailing me with a question. The Course Outline may be updated periodically, so please check it periodically. Questions are welcome, but please be patient. I will reply as soon as I can.

Introduction: My BSc and MSc are from the Department of Biology at Kansas State University. My PhD. is from the Department of Ecology at University of Minnesota. I did post-doctoral work and lectured at the Faculty of Forestry at University of British Columbia. I then joined the faculty at the Fisheries and Wildlife Department of Michigan State, but left that job to work as polar bear biologist for the Northwest Territories Department of Renewable Resources. That position transferred to Nunavut when the NW Territories divided. I was Manager of Nunavut's Wildlife Research Section for my last few years in the north and moved to the Thunder Bay area in 2008. I am an adjunct professor with Geography and I am teaching this course as contract lecturer.

Course Context:

Environmental Impact Assessment (EIA) and subsequent regulation of development is a natural responsibility of government because the government is responsible for much of the biosphere as "common property"; and because the activities associated with a development (and some government policies) can impact the public interest and other

private interests both during operations and after the development/policy has been terminated (e.g., clean-up costs). Governance is political, and the administration of any EIA process and the permitting that does or does not occur is no exception. The political spectrum is essentially a value spectrum. Governments are perceived to be pro-development or environmentalist based on the core values of the ruling or majority party. In law there are three things that matter. The first is what the law actually says. The second is how the judiciary interprets the law (legislating from the bench). The third is how the law is practiced (enforced). A recent addition to this dynamic has been termed "Social License" or "Social Permission". Additionally social pressure outside the EIA process can influence or even over-turn a permitting decision if politicians see the loss of support for following their own legislation as unacceptable. In the real world, projects get pushed through and projects get terminated for reasons external to the published EIA process. Most permit legislation allows the responsible Minister some discretion in the final decision of whether to allow or disallow a project or a policy.

The EIA process is value-based, and thus changes as societal values change. Just as the difference between education and indoctrination can be a fine line; the difference between an EIA practitioner and an advocate for some particular outcome can be subtle. Our legal system is based on recognition that there is an inherent conflict of interest between the accused and the state, or between a plaintiff and a defendant. The justice system is an adversarial system. No project proponent accepts the time and cost of an EIA because they have a well-developed social conscience; they do it because a screening committee has required it as a condition of permitting the activity. Similarly, environmentalist groups may try to block the project simply because they feel the environment has already become unacceptably damaged by development activities (a generic rejection of all development). One group of social and physical scientists prepares the EIA, while other groups of scientists (government agencies or intervenor contractors) criticize and provide alternative interpretations and arguments. Conservation Biology argues that professionals have a duty to act as advocates for the organisms and ecosystems they study. The Center for Biological Diversity is an environmentalist legal firm that attempts to compel government and private industry to adopt environmentalist perspectives through litigation. Local people often benefit from the development economically but are also typically impacted most by the development. If the development is proposed on lands identified by Treaties or Land Claims as owned outright by aboriginal peoples, the same dichotomy between economic benefits and impacts exists. If the development occurs on Crown lands where aboriginal people have traditional rights, the same trade-offs exist. Most of the benefits of a development project flow to the shareholders and investors; however without the expectation of a substantial return on the investment, few projects would even be proposed … let alone accomplished. There is always diversity of opinion about the extent, longevity, and acceptability of a projects impacts and benefits. Very often the information required for certainty about impacts (or that no impacts will occur) is unavailable.

The quality of life experienced by a nation is proportional to its economy. Government plays a central role in providing national defense, infrastructure, social assistance, civil justice systems, monetary systems, health, education, and conservation and preservation

of common property resources. However, government produces none of the revenues necessary to cover the cost of these functions. The capacity of government to fulfill its responsibilities including environmental stewardship ultimately depends on the economy. In times of duress (such as recession or national defense crisis) environmental stewardship can become a secondary concern. In better times, environmental stewardship concerns may outweigh local and investor and national benefits; especially when past damage to ecosystem services has occurred through poorly regulated or unregulated similar developments.

The various EIA processes and protocols that have been identified attempts to navigate these troubled waters and to provide an outcome that eliminates or mitigates negative impacts, is responsive to the various cultural and social concerns/preferences expressed, and fully appreciates the benefits of the project to the proponents and the nation/jurisdiction as a whole. There is a presumption of good faith among practitioners for this process to work effectively, but that presumption is sometimes (often) overly optimistic. Some participants feel that strongly held values and beliefs are sufficient to justify an adversarial approach to the EIA process. Others believe the best argument for a fair and balanced EIA process is long-term self-interest. Collectively and individually we all depend on ecosystem services for the continuation of our social, cultural and ecological systems; and we also depend on a viable economy to sustain our way of life. Best practices result in best outcomes, so this course will consider EIA as is presented by our text … a process that provides for sustainable development by applying the best available information to a fair and balanced consideration of the benefits and impacts of a project so that development can be implemented in a manner that is both sustainable and economically viable.

This course is an introduction to both theory and practice of EIA in Canada. EIA aims to predict, evaluate and mitigate the impacts of a proposed project, program or policy prior to its undertaking in order to minimize or avoid adverse effects. We will explore current practices and processes of federal, provincial, and territorial EIA protocols. The course provides an overview of the methodologies for the design and conduct of environmental impact studies. A secondary goal is to expose students to both past and ongoing EIA's to gain appreciation for the diversity and effectiveness of this sometimes controversial process as it is practiced in Canada. Good luck with the course.

Pedagogy and Evaluation:

The material for this course will be provided as lectures, assigned readings from the text and selected articles from the published literature. The assigned papers are archived on D2L under the folder "Resources". There will be weekly timed open-book practicals over the material assigned to date. These practicals will be proctored and scored by the "Quizzes" Tab on D2L. All practicals are to be written **independently** and all practicals are comprehensive because the course will build upon the concepts and terminology already covered as we progress through the term. However the practicals will emphasize the material that has been assigned the week previous. D2L will scramble the order of practical questions and the order of the answers for individual questions. The questions

for any given practical can also be varied randomly by selection from a test bank, and not all questions from the test bank will occur on all practicals. However, the main feature to promote adherence to the Lakehead code of ethics (independent work) is that the practical questions will be timed (~1 minute per question). Practicals will be open book and open notes. You may highlight and outline your text and assigned papers. You may create and use a digital key-word search index. You may share your study archive with other students. You may use a calculator. Practicals will be "open" for a 12 hour window beginning 6:00 AM and ending at 12:00 midnight on Sundays of each week. If more than one practical is scheduled, you may take a break between practicals. The length of each practical will vary, but each practical question is counted as the same value for the practical portion of your final mark. Missed practicals may not be made up without documentation or prior approval in writing (email message). Those traveling for sports or other purposes are responsible to make arrangements for internet access while they are away. I will re-schedule practicals missed for medical reasons for the next consecutive week only, unless the documentation identifies longer time frame for recovery. After that time interval, the window for make-ups will have expired.

Our course meets in RC 1001 on M-W from 08:30 to 10:00. Please have the weeks assigned reading completed before class meets because we will emphasize discussion and workshops rather than simply repeat the assigned readings as a lecture.

The final exam will be a proctored on-line exam. The final examination will be a no notes, no books, and no memory aids exam. You use bring a non-programmable calculator for any math problems. You will need a laptop computer for the final exam.

The schedule of course material is provided by the course outline listed below.

The on-line format offers considerable flexibility for students to complete the course in a manner that is complimentary to their other priorities. However, successful completion of this course requires discipline, diligence and consistency. The term system puts pressure on both students and professors to defer what can be deferred to accommodate other scheduled priorities. I have tried to provide sufficient structure to make this course a successful competitor for your time this term. If you keep up with the readings and appreciate that the p are identifying what I consider to be the core material for the course … you should do well. If you procrastinate or schedule too many conflicting priorities … your mark will reflect these choices. So if you need a particular mark to meet your professional goals, make sure you budget the time and do the work necessary to get the mark you need. Please do not come to me after the course is over and ask for special dispensation.

There is no mid-term examination. In addition to the practicals and the final, a short (~5 page) review paper is required. Course marks are determined as 15% for the review paper, 35% from the total percent correct on the practicals and 50% from the total percent correct on the final exam.

The Course Schedule below provides a time table for assigned readings, practicals, and EIA review paper.

The scheduled times for completion of the practicals, final exam, and assignment are not flexible and will be modified only in accordance with Lakehead policy (documented illness and family/personal issues). Please contact me in advance if you have any special circumstances or questions that will interfere with your completion of scheduled course activities.

EIA Review: Critical Review of a past or ongoing Canadian EIA

Many EIA documents are available on line to facilitate public review and to achieve greater transparency. Some of these documents are huge and would literally require days to download and perhaps weeks to read. Others are more manageable. You may choose any EIA you wish for this assignment (territorial, provincial, or federal).

The format for your review is as follows:

Title Page with your name and student #

Introduction: Describe the development and main concerns for impacts, identify the relevant legislation and EIA process, summarize the outcome, identify your approach to the review (e.g., appropriateness of the type of EIA used, were alternatives considered, public participation and consultation, methodology used, adherence to EIA best practice principles, appropriate use of precautionary principle, specific examples of strengths and weaknesses of the EIA, was the outcome appropriate and accepted?)

Considerations: This is the main body of the paper. Use subheadings to identify the topic being discussed. Do not forget to consider social and cultural impacts as well as physical and biological issues. You may include tables, figures, and maps to support the text.

Conclusions: Summarize in point form the topics discussed in Considerations. Provide a summary paragraph that explains why you feel the EIA you considered was successful or unsuccessful, and how it could have been improved.

Literature Cited: Cite the EIA source. Follow the usual protocol for crediting your sources. Online agency or journal references are fine. Advocacy websites are unlikely to provide balanced and neutral information, and may even exaggerate a bit. The best sources for reliable information are academic journals and books. However, be critical of everything you read. Is the information supported by the data or by logical argument; or is it opinion or conjecture.

The length of your review paper should be about 5 pages plus the title page plus any figures, tables, or maps that you include. Please use normal fonts and pitch.

EIA Review Papers are due 24 February, but they can be turned in before that date. Please submit them as email attached IBM PC MS WORD documents or hard copy in class. If I can't download them or I can't read them, they will not be considered "received". I will confirm receipt by email message.

You should select an EIA by the second week of class. An outline must be submitted by the end of the third week of class to confirm your approach that will be successful. The outline should be consistent with the above format. A description of what constitutes an outline is contained in the Resources directory, and that style is required. Please keep the scope of your paper to something that is manageable for our time frame (one term) and our page limit (5 pages maximum). You can search for EIA's by Province or by

Grading Protocol:

Weekly Practicals	35%
Review Paper (outline 2%, paper 10%)	15%
Final Exam	50%
Total	**100%**

Deferred Examinations and Assignments:

Please regard the scheduled practicals as a series of appointments that have been arranged to facilitate teaching and evaluation for Environmental Impact Assessment. Assignments are accepted on or before the day that they are due. Late assignments will be counted as zero credit unless prior approval is provided (email message or hard copy) or appropriate documentation for University approved absence is provided. Approved absence includes illness (medical practitioner certificate), varsity sports (letter or email message from coach), or personal/family emergency (documentation of circumstance). Scheduling conflicts with other courses are not considered an approved absence. Absence due to participation in scientific meetings or field trips associated with other courses will be considered on a case by case basis.

Special Circumstances or Disabilities:

Students with special circumstances or disabilities are encouraged to contact the Learning Assistance Center right away so that appropriate accommodations can be arranged. It is not necessary to get my permission or support. The Learning Assistance Center will notify me of any accommodations that are required, and this information will be kept confidential.

Academic Honesty:

The Guidelines for Academic Conduct from Lakehead University (Code of Student Behaviour and Disciplinary Procedures) may be found at:
>http://vpacademic.lakeheadu.ca/?display=page&pageid=46<

Honesty and integrity are expected in class participation, examinations, assignments, and other academic work. Expectations include:

- 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.

Hints to doing well in this course:

To reiterate: practicals are comprehensive, but mainly cover the previous week's material and emphasize the material in the lecture slides. If you are not already familiar with the Desire to Learn (D2L) software you should go to the site and read the introductory material. Your practicals will be automatically scored, and your marks will be available to you as soon as everyone has completed the practical. After the practical window has closed, the questions and correct answers will be posted under the "Submission Views" tab of each practical. It is OK to construct a memory aid for your practical. Some students have constructed searchable data bases on their computers. Others have created an indexed reference system using key words and acronyms. Anything goes except having someone help you do the practicals. No additional materials are allowed for the final exam (calculator only) … so not learning the material during the term will only set you up for a poor performance when you take the final. I use the practicals to indicate what I consider to be the core material for the course. This course rewards preparation and consistency. Good luck.

Course Schedule for Environmental Impact Assessment GEOG 3471

Dates	**Practical** all day Sunday	**Chapters**	**Topic Area**	**Assigned Readings**
Jan 06-12	Practical 1	Chapt 1, 2	Canada EIA Aims and Objectives	Morgan (2012), review Canadian Environmental Assessment Act @ https://www.canada.ca/en/environmental-assessment-agency.html (Lecture 1) Introduction to Environmental Impact Assessment
Jan 13-19	Practical 2	Chapt 3	Tools to Support EIA Practice	Savan and Gore (2014), Precautionary Principle (2003)
Jan 20-26	Practical 3	Chapt 4	Screening Procedures	IAIA and IEA (1999), https://www.ontario.ca/page/preparing-environmental-assessments
Jan 27-Feb 02	Practical 4	Chapt 5	Scoping and Baseline Assessment	Noble (2015)
Feb 03-09	Practical 5	Chapt 6	Predicting EnvironmentalImpacts	Waltner-Towes and Kay (2005)
Feb 10-16	Practical 6	Chapt 7	Managing Environmental Impacts	Gibson (2011)
Feb 17-21	Study Break			
Feb 24-Mar 01	Practical 7	Chapt 8	Determining Impact Significance	Tennoy et al. (2006)
Mar 02-08	Practical 8	Chapt 9	Follow-Up and Monitoring	Morrisson-Saunders et al. (2007)
Mar 09-15	Practical 9	Chapt 10	Public Engagement	Andre et al. (2006), Salomons and Hoberg (2014)
Mar 16-22	Practical 10	Chapt 11	Cumulative Effects	Canter and Ross (2010)
Mar 23-29	Practical 11	Chapt 12	Strategic Environment Assessmt	Tetlow and Hanusch (2012)
Mar 30-Apr 3	Practical 12	C 13,14	Professional Practice and Ethics	Benson 2003, Gibson (2012)
TBA	Final Exam is **online**,		Please note: EIA Review Paper is due February 24th or earlier	
	Course Marks due:			

* Practicals are online (D2L) from 06:00 AM to 24:00 midnight on Sunday. Practicals are comprehensive, but emphasize the assigned readings from that week. For example, Practical 1 covers Chapters 1 and 2 from the text; and Practical 2 mainly covers Chapter 3 … and so on.