

IDM 7090 (G05) (3.0 CH)
SUSTAINABILITY ECONOMICS
WINTER 2023

INSTRUCTOR

Name: Robert Parsons	Office Location: Drake 645
Phone: Cellphone 204-880-4287	Office Hours: Virtual: 6 PM - 8 PM CST Monday, Tuesday or Thursday
Email: robert.parsons@umanitoba.ca or robertvparsons@gmail.com	Class Room: Drake 104 (but amenable to using Cisco Webex via UM Learn)
	Class Time: Wednesday 6:15 PM to 9:30 PM Starts January 25 th , with last class on April 5 th (no class February 22 nd) Concepts exam March 15 th , 2023.

COURSE DESCRIPTION

This interdepartmental special-topics course specifically examines “sustainability economics,” and relates directly to the sustainability theme area within the MBA program. The overall aim is to provide solid practical knowledge about this developing subject area. The intent is to help you understand both implications and potential applications for organizations with whom you will be working in the future. Sustainability inherently includes both environmental and corporate social responsibility (CSR) aspects. Although both will be addressed, the environmental-related side will be covered more extensively, simply because there is more material available. Also, given that economics involves the evaluation and comparison of costs and benefits, this course will include significant quantitative analysis. There is a mid-course examination covering theoretical concepts. The major project, five briefing assignments and two case studies all deal with issues of current interest, both locally and internationally.

COURSE OBJECTIVES

On course completion, you should be able to understand:

- Basic terminology and methodologies employed with sustainability economics;
- How sustainability economics is used and applied in practical situations; and
- Where major uncertainties and potential controversies exist.
- You will also gain practical experience as part of a real-world-oriented major project that potentially may be published (and included as part of your resume).

In relation to the overall Learning Goals and Objectives of the MBA program, this course is primarily oriented to Quantitative Proficiency, i.e., being able to approach organizational issues using quantitative analysis. Although there is no direct focus on Strategic Thinking or an Ethical Mindset, gaining an understanding of sustainability economics provides important inputs for both. Frequently, preparing a suitable analysis can greatly assist in strategic decisions or in how best to address ethical considerations. At the same time, a combination of local and global issues are considered, such that the course also supports having a Global Perspective, in particular how to better assess global issues from a local context, i.e., not all locations may be affected by a particular sustainability issue in the same way.

COURSE MATERIALS

Optional course textbook: Tietenberg, T.H., E.A. Wilman and P. Tracey. 2009. Environmental Economics and Policy, Canadian Edition. Pearson/Addison-Wesley, Toronto, Canada.

This textbook covers all of the relevant environmental aspects of the course, but is not required. A copy can be obtained through the University Bookstore, but is solely available in a paper format, which could limit access for students, depending on physical location. It discusses the topics of interest in roughly the same order as we look at them in class, with applicable sections for reading each week noted in the schedule. All necessary information is fully presented in the lectures and associated lecture notes. The textbook includes materials relevant to Canada, and was also selected, in part, because it could be a useful future reference, if retained by students. This is a useful backup reference book to retain.

In terms of corporate social responsibility, a primary, and still highly relevant source, is the 2008 special report by the Economist Magazine entitled, "Just good business" which is available at the following site: <http://www.economist.com/sites/default/files/special-reports-pdfs/10490978.pdf>

Two cases are included as assigned activities. Case #1 is in the public domain, and this case document will be provided in advance to all students via UM Learn at the time of Lecture 3. Case #2 will be assigned at the time of Lecture 6. The latter case document will need to be purchased electronically from the Ivey School of Business on-line (but involves a very low cost): <https://www.iveycases.com/>

Selected academic and media articles will be assigned or noted in lectures throughout the course. Many of these will be publicly available already through the internet, but if general access is restricted due to copyright, they can be still readily viewed through University Library on-line access.

COURSE ASSESSMENT

Student progress will be assessed as summarized in the following table:

Component	Worth
Case analysis written submissions	12 marks (i.e., 2 x 6 marks each)
Shorter briefing analysis written submission	3 marks (only one such briefing)
Longer briefing analysis written submissions	20 marks (i.e., 4 x 5 marks each)
Exam covering theoretical concepts	24 marks (during Lecture 7 time)
Major project report (cost benefit analysis)	20 marks (due at end of course)
Class presentations/participation	21 marks (throughout course)
Total	100 marks

Details on specific components are provided as follows:

Case analysis written submissions (Case #1 and Case #2) involve:

- Series of specific questions to be answered, based on your analysis of the case materials.
- Maximum **6 pages** of text content. Can be single-spaced, but must be at least 12-point font.
- Figures, tables and additional references can be included on separate pages at the end, and, as long as within reason, do not count toward maximum pages.

- As part of lecture, we will hold class discussion, framed around answering key questions, which are outlined for each case. These discussions involve 4 marks for each case toward the class presentation/participation component below (meaning cases in total are worth 20 marks).
- Case assignments will be distributed two weeks before submission due-date (and class discussion), with Case #1 provided at time of Lecture 4, and Case #2 at time of Lecture 6.
- Case written submissions are due on Wednesday, March 1, 2023 at 6:15 PM CST for Case #1 (Lecture 5), and Wednesday, March 22, 2023 at 6:15 PM CST for Case #2 (Lecture 8).
- You can work with other students on the analysis of data associated with each case, but your written submission must be your own work.

Short briefing analysis submission (Briefing #1):

- Maximum **2 pages** of text (12-point font).
- Inverted-pyramid communication format: starting with brief **Summary** section, including explicit recommendation(s); **Background** section, summarizing key factors; and **Analysis** section, including the rationale for a proposed selection or course of action.
- For short-briefing submission, you are required to include a minimum of **3 cited references**.
- Briefing assignment distributed one week before due date.
- As part of the class, you will be asked to briefly describe a summary of your findings (maximum two minutes), with 1 mark for each briefing presentation separately towards the class presentations/participation component below.
- You can work with other participants on the analysis of data that may be associated with the briefing, but the written submission must be your own work.

Longer briefing analysis submissions (Briefing #2 through Briefing #5) involve:

- Same format as briefings above, but with maximum **3 pages** of text (12-point font). These briefings are less “high-level,” involving somewhat more in-depth analyses.
- Inverted-pyramid communication format again: starting with brief **Summary** section, including explicit recommendation(s); **Background** section, summarizing key factors; and **Analysis** section, explaining the rationale for a proposed selection or course of action.
- In longer briefing submissions, you are required to include a minimum of **5 cited references**.
- As part of the class, you will be asked to briefly describe a summary of your findings (maximum two minutes), with 1 mark separately towards the class presentations/participation component.
- Just as with other briefings, assignments will be distributed one week before being due.
- You can work with other participants on the analysis of data that may be associated with the briefing, but the written submission must be your own work.

Issues discussed in the various briefing analyses are highly topical within Manitoba (and elsewhere). Based on the results obtained, the instructor may elect in specific cases to prepare short summary article(s) explaining what has been found, and that may be submitted to local media. One example is the Eco-Journal article in Fall 2018 on carbon-tax equivalency of elevated biofuels:

Parsons, R., M. Baranowski, K. Borce and T. MacHutchon. 2018. Environmental win-win is possible: Manitoba leads on renewable fuels. Eco-Journal (Manitoba Eco-Network) 29(3): 8.
https://mbeconetwork.org/wp-content/uploads/2018/10/Eco_Journal-Fall-18_online.pdf

Concepts examination component will be:

- Undertaken in-class during the first half of Lecture 7, on March 15th, 2023.
- 1.5-hour duration (one-half of class time for that week).
- Closed book, with no external communications permitted (no cell-phone or Google searching).

- Examination structure more like a midterm but scheduled a bit later than other midterms.
- Intended to cover the major theoretical concepts presented in the course.
- Detailed information will be provided in advance regarding administration of the exam.

Major project (Cost-Benefit Analysis) report:

- The major project involves preparation of a cost-benefit analysis (CBA) report, with students assigned (randomly) to address an analysis relating to a timely issue or opportunity.
- This year students will be working in one of two teams, with the two somewhat diverse topics.
- Overall project subjects will be introduced and team formation will be undertaken during Lecture 3, which is on Wednesday, February 8, 2023.
- Each team will work together to prepare a major project final report, one for each topic.
- Format of the report involves the following sections to be included: **Title** page, including report title, student name(s) and student number(s); **Summary** section, briefly summarizing the work and results; **Introduction** section, identifying the issue being evaluated; **Background** section, describing relevant information, and qualitatively what may be important regarding the subject being evaluated; **Methods** section, describing important assumptions, and methods employed for quantifying results and for analysis; **Results** section, describing what was found, in particular the quantitative results; **Conclusions** section, outlining the conclusions of the work, including identifying aspects that may be of greatest importance; and **Reference** section, documenting literature cited in the report using a consistent format.
- Report should use 12-point font and can be single-spaced, but should not have a length greater than **20 pages**, excluding any figures, tables, or references.
- There should be a minimum of **10 cited reference sources**, not including guidance document on CBA prepared by the Government of Canada (below) or specific references provided by the instructor for the major project assignment.
- Citations and formatting of references should use a consistent approach. You are free to select whatever approach you wish, but noting it should be consistently used. One possible useful approach is APA, which is described later, but you are not required to use it.
- Further guidance on the preparation of the CBA will be discussed in class, based on the following document available from the Government of Canada: Treasury Board of Canada Secretariat. 2007. Canadian Cost-Benefit Analysis Guide. Government of Canada. <https://www.tbs-sct.gc.ca/rtrap-parfa/analys/analys-eng.pdf>
- As part of the last class session (on Wednesday, April 5th, 2023), each of the student teams will make a presentation of key findings to the rest of the class, with 4 marks per student separately included towards the class presentations/participation component.
- Final report submissions are due on Wednesday, April 13, 2022 at 6:15 PM CST, which is one week after the last lecture. Late submission is permitted, but there is a penalty for being late.
- **Bonus Opportunity:** After the end of the course, it is intended by the instructor to bundle results found by students into brief overall report(s), or for article(s) such as for the site Conversation Canada (<https://theconversation.com/ca>). The intent is to be “published” on-line through a suitable and academically valid venue, with the instructor as the lead author and all participating students included in the list of authors. This was first done in 2017 regarding electric buses, with a compendium report on externalities made public through the auspices of the Canadian Urban Transit Research and Innovation Consortium, CUTRIC at the site: <https://cpb-ca-c1.wpmucdn.com/www.rrc.ca/dist/6/47/files/2013/11/UofM-AsperMBA-2017-EBus-Externalities-CBA-sgs15r.pdf>. The instructor will inform everyone involved if a report has been accepted and published. If you have any concerns about being listed as an author in a proposed public report or article, please inform the instructor prior to the end of the course.

Class presentations/participation (total of 21 marks):

- As noted earlier, 17 marks are specifically allocated as follows:
 - 4 marks each for in-class discussions of cases, Case #1 and Case #2 (total of 8 marks);
 - 1 mark each for in-class summary discussions of results (two minutes) for short-briefing and longer-briefing analyses (total of 5 marks);
 - 4 marks for each student for summary presentation of the most important findings of major project (CBA) report (total of 4 marks).
- Remaining 4 marks are allocated to ongoing class activities, including in-class group analysis, and general class participation.

Citations for Briefing Analysis, Case and Major Project submissions. As described in the section on Academic Integrity, it is important to properly cite documents used in your work. You are required to use a consistent citation and reference format approach within each individual document, but you are permitted to use whatever approach you want (and you can even change from one document to the next as long as each individual document is consistent throughout). Properly and consistently citing sources, in particular properly formatting your references, can be tricky and time consuming. A suggested approach is the American Psychological Association (APA) format, which is very common, but you are not required to use it. There are many useful guidance internet-sites to help with APA (sites for others formats are also available). A few for APA are as follows:

- <http://www.apastyle.org/>
- <http://libguides.csuchico.edu/citingbusiness>
- <https://owl.english.purdue.edu/owl/resource/560/05/>

Final grades will be assigned as outlined in the following table:

Cumulative Marks	Grade	GPA	Performance
90-100	A+	4.5	Excellent
80-89.99	A	4.0	Very Good
75-79.99	B+	3.5	Good
70-74.99	B	3.0	Satisfactory
65-69.99	C+	2.5	Marginal
60-64.99	C	2.0	Unsatisfactory
50-59.99	D	1.0	Unsatisfactory
49.99 and below	F	0.0	Unsatisfactory

NOTE: Class attendance is required. Missing more than 20% of this course due to absence from lectures may result in a failing grade. It is your responsibility to inform your professor, in advance if possible, of your absence and the reason for it:

- 1) if **medical**, self-declaration form must be submitted for an illness lasting 5 consecutive days or less <https://umanitoba.ca/governance/governing-documents-students#self-declaration-for-brief-or-temporary-student-absences>, no later than 48 hours after the end of the brief absence; a medical note from your physician must be submitted for an illness lasting more than 5 days;

- 2) if a **work commitment**, a signed letter on letterhead from your supervisor is required in advance, noting clearly the date(s) you must be away for your work commitment(s);
- 3) if for **student competitions**, an email from your Asper team coach must be received in advance indicating the dates you are away at competition.

The professor will then decide how to deal with the impact of the missed classes on your final grade.

COURSE SCHEDULE

Each class typically will be split approximately into two 1.5-hour parts with a 15-minute break:

Part A: 6:15 PM to 7:45 PM

Part B: 8:00 PM to 9:30 PM

All class notes will be posted to the UM Learn system in PDF format. Copyright materials will be removed, but links included in order for students to locate relevant copyrighted materials.

Week 1 (Wednesday January 25th, 2023)

Part A Discussion:

Introductions and course administration overview; review of important aspects of conventional economic analysis; background review and updating of relevant mathematics (key derivatives and integrals); business-environment relationships; and similarities and differences in analysis between environmental and social responsibility aspects of sustainability.

Optional reading: Tietenberg et al. (2009) Chapters 1 and 2.

Part B Discussion:

Human-environment relationships; valuing the environment; property rights, externalities; and environmental problems.

Optional reading: Tietenberg et al. (2009) Chapters 3 and 4.

Additional reading (not required):

The Economist. 2019. Future lives matter (regarding discount rates). (December 8th, 2018 issue, page 75). <https://www.economist.com/finance-and-economics/2018/12/08/the-moral-assumptions-embedded-in-economic-models-of-climate-change>

Assignments:

Briefing Analysis #1 assignment will be distributed. This involves qualitative analysis leading to recommendations on the suitability of using compact fluorescent light (CFL) bulbs in six randomly selected cities around the world (i.e., whether there is likely net benefit or net cost in terms of sustainability economics). This assignment builds on initial work undertaken by earlier classes, the results of which were summarized in the following article:

Parsons, R.V., 2015. Not-so-good nature of compact fluorescent light bulbs in Manitoba. Eco-Journal (Manitoba Eco-Network) 25(3): 5,9.

http://mbeconetwork.org/wp-content/uploads/2016/02/Eco-Journal-Fall15_Online.pdf

Week 2 (Wednesday February 1st, 2023)

Part A Discussion:

Briefing Analysis #1 in-class discussion of results, i.e., what was important (two minutes each)?
“Sustainable development” definition and analysis approaches; additional background review and updating of relevant mathematics (using financial principles, i.e., PVIFA, to combine capital and operating components of costs); applying environmental economics principles to specific pollutants, i.e., basis for pollution pricing systems (emission-fee systems, and tradeable permit systems).
Optional reading: Tietenberg et al. (2009) Chapters 5 and 6.

Part B Discussion:

Air pollution from stationary and mobile (i.e. vehicle) sources.
Optional reading: Tietenberg et al. (2009) Chapters 7 and 8.

Assignments:

Briefing Analysis #1 written submission is due by the time of the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, February 1st, 2023.
Briefing Analysis #2 assignment will be distributed. This assignment involves evaluating the “cost per tonne” for emissions reductions during 2021 from application of the federal carbon pricing backstop (carbon tax) in applicable provinces, and resulting implications regarding the ongoing effectiveness of this policy. This briefing assignment follows from similar work done by students in 2021, based on carbon pricing results for 2019.

Additional background reading on carbon pricing approaches (not required):

How carbon tax should work: McKittrick, R. 2016. Practical guide to the economics of carbon pricing. SPP Research Papers 9(28), School of Public Policy, University of Calgary.

<https://www.policyschool.ca/wp-content/uploads/2016/02/Carbon-Pricing-McKittrickFINAL.pdf>

Case for broadening carbon taxes: The Economist. 2020. The contentious and correct option, Briefing on Taxing Carbon. (May 23, 2020 issue, pages 56-59).

<https://www.economist.com/briefing/2020/05/23/the-world-urgently-needs-to-expand-its-use-of-carbon-prices>

How tax not working: Parsons, R. 2019. Carbon-tax ambitions reduced to pure misdirection. Winnipeg Free Press, Analysis Section (Friday October 18, 2019 print edition, page A7).

<https://www.winnipegfreepress.com/opinion/analysis/carbon-tax-ambitions-reduced-to-pure-misdirection-563353012.html>

Additional dissent: Jaccard, M. 2016. Want an effective climate policy? Heed the evidence: Carbon taxes and caps may be most effective in economic theory, but smart regulation will produce better climate policy for our political reality. Policy Options (February 2, 2016).

<https://policyoptions.irpp.org/magazines/february-2016/want-an-effective-climatepolicy-heed-the-evidence/>

Recent peer reviewed article by Parsons: Parsons, R.V. 2021. Canada as a case study for balanced presentation to address controversy on emission reduction policies. Sustainability 13(14): 7909. <https://www.mdpi.com/2071-1050/13/14/7909/pdf>

Additional recent articles on climate change, carbon pricing and mitigation (not required):

The Economist. 2019. The climate issue, Leader. (September 21, 2019 issue, page 13):

<https://www.economist.com/leaders/2019/09/19/the-climate-issue>

The Economist. 2019. What goes up, Briefing on Climate Change (September 21, 2019 issue, pages 26-32): <https://www.economist.com/briefing/2019/09/21/the-past-present-and-future-of-climate-change>

EcoFiscal Commission. 2019. Bridging the Gap: Real Options for Meeting Canada's 2030 GHG Target. c/o McGill University, Montreal, Canada. Report Portal:

<https://ecofiscal.ca/reports/bridging-gap-real-options-meeting-canadas-2030-ghg-target/>

The Economist. 2018. Technology Quarterly, Toward Zero Carbon: Conquering CO₂. (December 1, 2018 issue, 12 pages). <https://www.economist.com/technology-quarterly/2018-12-01>

Week 3 (Wednesday February 8th, 2023)

Part A Discussion:

Briefing Analysis #2 in-class discussion of results, i.e., what was important (two minutes each)?

Water pollution; and wastes.

Optional readings: Tietenberg et al. (2009) Chapters 9 and 10.

Additional readings (not required):

The Economist. 2019. Water: Climate change and population growth are making the world's water woes more urgent. (March 2, 2019, Special Report, pages 5 to 7).

<https://www.economist.com/special-report/2019/02/28/climate-change-and-population-growth-are-making-the-worlds-water-woes-more-urgent> (Accessible via Library system)

The Economist. 2018. Troubled Water: Can conservation save our ocean? (Video, March 7, 2018). <https://www.youtube.com/watch?v=BFtrZoagqtM>

The Economist. 2019. Thirsty planet: Special report on water. (March 2, 2019, print edition, remainder of special report). <https://www.economist.com/printedition/specialreports?page=2>

The Economist. 2018. Cash for trash: How the world should cope with its growing piles of rubbish, Leader. (September 29, 2018, print edition, page 16).

<https://www.economist.com/leaders/2018/09/27/how-the-world-should-cope-with-its-growing-piles-of-rubbish>

The Economist. 2018. A load of rubbish: Special report on waste. (September 29, 2018, print edition, 12 pages). <https://www.economist.com/special-report/2018/09/27/emerging-economies-are-rapidly-adding-to-the-global-pile-of-garbage>

Part B Discussion:

Global environmental issues.

Optional reading: Tietenberg et al. (2009) Chapters 13 and 14.

The overall topic for the major project (cost benefit analysis) reports will be introduced, as well as the specific subjects for the two student teams, and selection/assignment of students to individual teams (random draw can be used as required).

Assignments:

Briefing Analysis #2 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, February 8th, 2023.

Briefing Analysis #3 assignment will be distributed. This assignment will look at the relative dangers and comparative costs imposed by different sorts of water pollution incidents. The assignment will include discussion of the Energy East pipeline that was a topical subject and controversy across Canada. (This assignment was deemed by students in earlier classes to be both interesting and informative).

Week 4 (Wednesday February 15th, 2023)

Part A Discussion:

Briefing Analysis #3 in-class discussion of results, i.e., what was important (two minutes each)?
More detailed discussion of cost-benefit analysis, including typical CBA components.
Optional reading: Treasury Board of Canada Secretariat. 2007. Canadian Cost-Benefit Analysis Guide. Government of Canada: <https://www.tbs-sct.gc.ca/rtrap-parfa/analys/analys-eng.pdf>
(Copy of this document will also be provided via UM Learn).

Part B Discussion:

Biodiversity and implications; management and allocation of resources that are limited or can be depleted (leads to important model explaining over-exploitation of limited resource species).
Optional reading: Tietenberg et al. (2009) Chapters 11 and 12.

Assignments:

Briefing Analysis #3 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, February 15th, 2023.
Case #1 assignment will be distributed, and case document provided via UM Learn. You will have two weeks to work on the written submission, and the case will be discussed during the first half of the class on March 1st, 2023.

Week 5 (Wednesday March 1st, 2023)

Part A Discussion:

Class discussion of Case #1 will be undertaken using assigned questions for guidance.
Further background on the methods involved with Case #1 and associated rationale will be presented, along with potential application of the methods, as employed, and implications.
Law and regulation in terms of environment, and their relevance and implications; alternative methods of addressing environmental issues.

Part B Discussion:

Corporate social responsibility (CSR).

Readings on CSR (you should read this article):

The Economist. 2008. Just good business: A special report on corporate social responsibility. (January 19th 2008 issue). <http://www.economist.com/sites/default/files/special-reports-pdfs/10490978.pdf>

This article can be accessed electronically through the Library system if necessary. Although it is now older, it is still one of the best practical references for CSR regarding economics. If you have difficulty getting access, academics at a number of educational institutions and some other locations have posted PDF versions of this on-line.

Additional background material (not required reading):

The Economist. 2019. What companies are for? Competition, not corporatism, is the answer to capitalism's problems (Leader). (August 24th, 2019, print edition, pages 7-8).

<https://www.economist.com/leaders/2019/08/22/what-companies-are-for>

The Economist. 2019. I'm from a company, and I'm here to help: Briefing on corporate purpose. (August 24th, 2019 issue, print edition, pages 14-16).

<https://www.economist.com/briefing/2019/08/22/big-business-is-beginning-to-accept-broader-social-responsibilities>

These latter articles are more recent, and reflect changing corporate attitudes on social issues.

Additional useful guidance document from Industry Canada (not required reading):

Industry Canada. 2014. Corporate Social Responsibility (CSR): An Implementation Guide for Canadian Business. Government of Canada, Ottawa, Canada. [https://www.ic.gc.ca/eic/site/csr-rse.nsf/vwapj/CSRImplementationGuide.pdf/\\$file/CSRImplementationGuide.pdf](https://www.ic.gc.ca/eic/site/csr-rse.nsf/vwapj/CSRImplementationGuide.pdf/$file/CSRImplementationGuide.pdf)

Additional recent academic-oriented materials (not required reading):

Kitzmueller, M., and J. Shimshack, 2012. Economic perspectives on Corporate Social Responsibility. *Journal of Economic Literature* 50(1): 51-84.

http://econ.tulane.edu/shimshack/post_CSR.pdf

Albuquerque, R., A. Durnev and Y. Koskinen. 2014. Corporate social responsibility and firm risk: Theory and empirical evidence. Centre for Economic Policy Research (CEPR). Discussion Paper No. 9533. <http://capitalism.wfu.edu/wp-content/uploads/2016/03/Koskinen-Paper.pdf>

Assignments:

Case #1 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, March 2st, 2023.

Briefing Analysis #4 assignment will be distributed. This involves a significant social responsibility issue, with unexpected adverse cost implications, and will specifically deal with the 2016 documentary film entitled, "Angry Inuk" by film-maker Aletha Arnaquq-Baril, who is based in Nunavut.

Week 6 (Wednesday March 8th, 2023)

Part A Discussion:

Briefing Analysis #4 in-class discussion of results, i.e., what was important (two minutes each)? Hazardous wastes, and hazardous goods and materials.

Additional reading on hazardous materials and industry (not required required):

The Economist. 2018. Hazard signs: Chemicals firms are facing a regulatory and consumer backlash against some of their best-selling products (November 12th 2018, print edition, pages 65-67). <https://www.economist.com/business/2018/11/17/upheaval-in-the-chemicals-industry>

Part B Discussion:

Lifecycle assessment (LCA).

Background readings on LCA (not required reading):

Rebitzer, G. T. Ekvall, R. Frischknecht, D. Hunkeler, G. Norris, T. Rydberg, W.-P. Schmidt, S. Suh, B.P. Weidema, D.W. Pennington. 2004. Life cycle assessment, Part 1: Framework, goal and scope definition, inventory analysis, and applications. Environment International 30(5): 701-720. http://doc.rero.ch/record/13102/files/Rebitzer_G._-Life_cycle_assessment_part_1_framework_20091130.pdf
Guinee, J.B., R. Heijungs, G. Huppes, A. Zamagni, P. Masoni, R. Buonamici, T. Ekvall and T. Rydberg. 2011. Life cycle assessment: Past, present, and future. Environment Science and Technology 45(1): 90-96. <http://pubs.acs.org/doi/abs/10.1021/es101316v> (Accessible via Library system)

Assignments:

Briefing Analysis #4 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, March 8th, 2023.

Case #2 for analysis will be identified, and assignment question document provided via UM Learn. Note, that you will need to purchase this case on-line from the Ivey School of Business, but at very modest cost (<https://www.iveycases.com/>). If you encounter any issues in this regard, please contact instructor. You will have two weeks to work on the written submission, and the case will be discussed during the first half of the class on March 23rd, 2020.

Week 7 (March 15th, 2023)

Part A: Course basic-concepts examination.

Part B Discussion:

Implications for conventional energy and petroleum supplies, regarding social license and changing price situation; and application of balanced presentation technique (refer to Case #1) focusing on carbon taxation.

Background readings (not required reading, but useful for references):

The Economist. 2016. Breaking the habit: A special report on the oil industry. (November 26th 2016 issue). <https://www.economist.com/news/special-report/21710628-worlds-use-oil-approaching-tipping-point-writes-henry-tricks-dont-expect>

The Economist. 2019. To the last drop: Saudi Arabia's strategy to survive the end of oil (Leader). (November 2nd, 2019 issue, print edition, page 11). <https://www.economist.com/leaders/2019/10/31/the-message-from-the-worlds-biggest-and-wildest-ipo> (These articles can be accessed electronically through the Library system)

Cleland, M., L. Nourallah and S. Fast. 2016. Fair Enough: Assessing Community Confidence in Energy Authorities. CanadaWest Foundation and University of Ottawa. http://cwf.ca/wp-content/uploads/2016/04/NRP_FairEnough_Report_11APR2016-1_WEB.pdf

Colton, J., K. Corscadden, S. Fast, M. Gattinger, J. Gehman, M.H. Findlay, D. Morgan, J. Sayers, J. Winter and A. Yatchew. 2016. Energy Projects, Social Licence, Public Acceptance and Regulatory Systems in Canada: a White Paper. SPP Research Paper 9(20), School of Public Policy, University of Calgary. http://www.energy.ca/energycouncil/sites/default/files/files/Of-Note-Publications/cnepra_-_energy-white-paper.pdf

Energy and Mines Ministers Conference. 2016. Facilitating Responsible Mineral and Energy Development – Compendium of Case Studies on Building Public Confidence in the Mineral and Energy Resource Sectors. Natural Resources Canada, Ottawa, Canada. https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/Compendium_access_16-0059%20eng.pdf

Implications of “loss of public trust” in other sectors (not required reading):

The Economist. 2018. The next capitalist revolution: To rebuild public faith in markets, restore competition (Leader). (November 17th 2018 issue, print edition, pages 13-14).

<https://www.economist.com/leaders/2018/11/15/the-next-capitalist-revolution>

The Economist. 2018. Trust-busting in the 21st century: Special report on competition.

(November 17th 2018 issue, print edition, 12 pages). <https://www.economist.com/special-report/2018/11/15/regulators-across-the-west-are-in-need-of-a-shake-up>

Recent articles on problems with emerging modern trend toward ESG (environmental, social, governance) approaches, particularly relating to investments:

The Economist. 2022. Three letters that won't save the planet (Leader). (July 23rd 2022 issue, print edition, page 9). <https://www.economist.com/weeklyedition/2022-07-23>

The Economist. 2022. A broken idea: Special report on ESG investing. (July 23rd 2022 issue, print edition, 12 pages). <https://www.economist.com/special-report/2022-07-23>

Assignments:

There are no assignments due or distributed this week.

Week 8 (March 22nd, 2023)

Part A Discussion:

Class discussion of Case #2 will be undertaken. In terms of guidance, based on your analysis, the discussion is framed around two questions: (1) What are the top three recommended actions for the company in the short-term? and (2) What are the top three recommended actions for the company in the long-term?

Part B Discussion:

Environment and social responsibility implications of clothing manufacturing (setting up the last briefing analysis assignment).

Assignments:

Case #2 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, March 22nd, 2023.

Briefing Analysis #5 assignment will be distributed (noting this is the final briefing). This assignment focuses on comparing and monetizing environmental and social responsibility impacts of two different major clothing items.

Week 9 (March 29th, 2023)

Part A Discussion:

Briefing Analysis #5 in-class discussion of results, i.e., what was important (two minutes each)?
Reduction of wastes and residuals, and economics of pollution prevention.

Part B Discussion:

Future of energy and associated issues.

Background readings (not required but useful for reference):

The Economist. 2015. Let there be light: A special report on energy and technology. (January 15th 2015 issue).

http://media.economist.com/sites/default/files/sponsorships/MCR75_20150117_Accenture/2015_0117_Energy.pdf (This article can be accessed electronically through the Library system).

Gimon, E., M. O'Boyle, C.T.M. Clark and S. McKee. 2019. Coal Cross-Over: Economic Viability of Existing Coal compared to New Local Wind and Solar Resources. Energy Innovation.

https://energyinnovation.org/wp-content/uploads/2019/03/Coal-Cost-Crossover_Energy-Innovation_VCE_FINAL.pdf

The Economist. 2017. Electrifying everything (Briefing regarding electric vehicles). (August 12th, 2017 issue, print edition, pages 16-18). <https://www.economist.com/news/briefing/21726069-no-need-subsidies-higher-volumes-and-better-chemistry-are-causing-costs-plummet-after>

Arbib, J. and T. Seba. 2017. Rethinking Transportation 2020-2030: The Disruption of Transportation and the Collapse^[1] of the Internal-Combustion Vehicle and Oil Industries. The ReThinkX Project. <https://www.rethinkx.com/transportation>

The Economist. 2017. The price of jam: Road-pricing has long been a good idea. Today it is an urgent one. International section. (August 5th, 2017 issue, print edition, pages 45-46).

<https://www.economist.com/news/international/21725765-ride-sharing-and-electric-cars-take-governments-are-seeking-new-ways-make>

Gill, V., B. Flemming, P. Godsmark and B. Kirk. 2015. Automated Vehicles: The Coming of the Next Disruptive Technology. Conference Board of Canada

<http://www.conferenceboard.ca/e-library/abstract.aspx?did=6744>

The Economist. 2018. Who is behind the wheel? (Leader). (March 3rd, 2018 issue, print edition, page 14). <https://www.economist.com/leaders/2018/03/01/self-driving-cars-offer-huge-benefits-but-have-a-dark-side>

The Economist. 2018. Reinventing wheels: Special report on autonomous vehicles. (March 3rd, 2018 issue, print edition, 12 pages). <https://www.economist.com/special-report/2018/03/01/autonomous-vehicles-are-just-around-the-corner>

The Economist. 2017. Sacred spaces (Briefing on parking). (April 8th, 2017 issue, print edition, pages 19-20, 22) <https://www.economist.com/news/briefing/21720269-dont-let-people-park-free-how-not-create-traffic-jams-pollution-and-urban-sprawl>

Assignments:

Briefing Analysis #5 written submission is due at the beginning of the class. The assignment needs to have been sent electronically to instructor via email or UM Learn with postmark of no later than 6:15 PM, March 29th, 2023. (This is the last briefing analysis assignment due).

Week 10 (April 5th, 2023)

Part A and Part B Discussions:

Presentations of key findings of major project work by student teams (random order).
Final general discussions, and concluding remarks.

Deadline for submissions of Major Project reports

The major project report is to be forwarded electronically to instructor via email or UM Learn, but must have email or UM Learn postmark of no later than 6:15 PM CST, April 12, 2023.
You can send earlier if desired. If the report is sent via email, the instructor will acknowledge receipt so that you have documentation as such.

Late submission penalty

Late submission of any written case analysis (Case #1 and Case #2) or briefing analysis (Briefing Analysis #1 through #5) is not permitted, given their time-sensitive nature. (At the same time note that individual values for these assessment items are not large, such that if you miss one, it is not critical to success in the course).

The major project report assignment can be submitted late, but a late penalty will be imposed, with deductions outlined in the following table:

Major Project Late Submission	Mark Deductions
Late within 1 day (24 hours) of final deadline	3 marks
Late within 2 days (48 hours) of final deadline	6 marks
Late within 3 days (72 hours) of final deadline	9 marks
Late within 4 days of final deadline	12 marks
Late within 5 days of final deadline	15 marks
Late within 6 days of final deadline	18 marks
Late within 7 days of final deadline	20 marks

ACADEMIC REGULATIONS AND STUDENT SERVICES

HUMAN ETHICS APPROVAL FOR DATA COLLECTION

As part of coursework, if you will be collecting data from people who are not students in this class, you must obtain Human Ethics approval from the UofM's Research Ethics Board (REB) prior to data collection. This applies to data collection such as surveys, interviews, focus groups, experiments, video recording, etc., where a respondent is solicited for participation.

If the entire class will be working on the same project, your instructor will apply for human ethics approval from the REB. If individuals or small groups of students will be working on different projects, it is the responsibility of the students to obtain approval (only one group member needs to apply). Your instructor will tell you whether s/he will be or you need to. When in doubt, please talk to your instructor.

Instructions and forms to apply for human ethics approval can be found at:

<http://umanitoba.ca/research/orec/ethics/guidelines.html>

In most cases, you will be using the "Protocol Submission Form" which is under the "REB Forms - Fort Garry Campus" heading.

It can take up to six weeks to process human ethics applications and obtain approval. Therefore, plan early. Note that approval must be obtained prior to data collection and cannot be obtained during the data collection phase or retroactively. Violation can get you, your instructor, and the Asper School in serious trouble with the REB.

If you will be collecting data only from other students in the class, you do not need REB approval. If you have any questions, please contact humanethics@umanitoba.ca or your instructor.

UNCLAIMED ASSIGNMENT POLICY

Pursuant to the FIPPA Review Committee's approved recommendations of August 15, 2007, all unclaimed student assignments will become the property of the faculty and will be subject to destruction six months after the completion of any given academic term.

STUDENT SERVICES AND SUPPORTS

The University of Manitoba provides many different services that can enhance learning and provide support for a variety of academic and personal concerns. You are encouraged to visit the below websites to learn more about these services and supports. If you have any questions or concerns, please do not hesitate to contact your instructor or the Graduate Program Office.

For Information on...	...follow this link
Course Outlines, Year-at-a-Glance, Concentrations, Textbooks, VW Dates and Final Exams	Asper Graduate Student Resources
Exam Rescheduling Policy - <i>Please refer to Missing a Test/Exam on page 18 of the MBA Student Handbook</i>	MBA Student Handbook
Help with research needs such as books, journals, sources of data, how to cite, and writing	Library Resources
Tutors, workshops, and resources to help you improve your learning, writing, time management, and test-taking skills	Writing and Learning Support
Support and advocacy for students with disabilities to help them in their academic work and progress	Student Accessibility Services
Copyright-related questions and resources to help you avoid plagiarism or intellectual property violations	Copyright Office
Student discipline bylaws, policies and procedures on academic integrity and misconduct, appeal procedures	Academic Integrity
Policies & procedures with respect to student discipline or misconduct, including academic integrity violations	Student Discipline
Students' rights & responsibilities, policies & procedures, and support services for academic or discipline concerns	Student Advocacy
Your rights and responsibilities as a student, in both academic and non-academic contexts	Your rights and responsibilities
Full range of medical services for any physical or mental health issues	University Health Service
Information on health topics, including physical/mental health, alcohol/substance use harms, and sexual assault	Health and Wellness
Any aspect of mental health, including anxiety, stress, depression, help with relationships or other life concerns, crisis services, and counselling.	Student Counselling Centre
Support services available for help regarding any aspect of student and campus life, especially safety issues	Student Support Case Management
Resources available on campus, for environmental, mental, physical, socio-cultural, and spiritual well-being	Live Well @ UofM
Help with any concerns of harassment, discrimination, or sexual assault	Respectful Work and Learning Environment
Concerns involving violence or threats, protocols for reporting, and how the university addresses them	Violent or Threatening Behavior

ACADEMIC INTEGRITY

I.H. Asper School of Business, The University of Manitoba

It is critical to the reputation of the I. H. Asper School of Business and of our degrees that everyone associated with our faculty behaves with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any misconduct in our academic transactions violates this trust. The University of Manitoba Graduate Calendar addresses the issue of academic misconduct under the heading "Plagiarism and Cheating." Specifically, acts of academic misconduct include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing tests prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved.

Many courses in the I. H. Asper School of Business require group projects. Students should be aware that group projects are subject to the same rules regarding academic misconduct. Because of the unique nature of group projects, all group members must exercise extraordinary care to insure that the group project does not violate the policy on Academic Integrity. Should a violation occur on a group project, all group members will be held jointly accountable, no matter what their individual level of involvement in the specific violation.

Some courses, while not requiring group projects, encourage students to work together in groups (or at least do not prohibit it) before submitting individual assignments. Students are encouraged to discuss this issue as it relates to academic integrity with their instructor to avoid violating this policy.

In the I. H. Asper School of Business, all suspected cases of academic misconduct involving a graduate student (i.e. MBA, MFin, MScM, MSc or PhD student) will be reported directly by the instructor to the Dean of the Faculty of Graduate Studies.

FACULTY BIOGRAPHY

I.H. Asper School of Business, The University of Manitoba

Robert V. Parsons, PhD, MBA, MSc, BSc

Sessional Instructor, I.H. Asper School of Business

Dr. Robert Parsons has an eclectic background, both academically and in terms of work experience.

Academic Background:

Dr. Parsons holds technical degrees in Chemical Engineering (B.Sc. and M.Sc.) from the University of Calgary, and a doctorate in Bio-Systems Engineering from the University of Manitoba. The latter also involved a significant business-related orientation, i.e., looking at the development of a novel process to recover multiple high-value constituents from flax shive as feedstock; the latter representing a low-cost, high-volume agricultural processing waste uniquely available in Manitoba. He also holds a M.B.A., with distinction, from the Schulich School of Business at York University, Toronto, with a specialization in Business and the Environment. His background also has been strongly oriented to quantitative analysis using a variety of different techniques.

Dr. Parsons holds a Certification in Higher Education Teaching (C.H.E.T.) qualification from University Teaching Services at the U of M (now the Centre for Advancement of Teaching and Learning or CATL), and has taught Sustainability Economics (IMD 7090 G05) as part of Asper Graduate Programs since the inception of the course. More recently he has been teaching M.B.A., M.Fin., and M.S.C.M. students for the “boot-camp” mathematics course (MSCI 5110 Basic Quantitative Methods for Management), as well as Introduction to Supply Chain Management (SCM 2230 A02) for undergraduate students. He also earlier taught as part of the Certificate in Public Sector Management (C.P.S.M.) program under Extended Education.

Professional Work Experience:

For more than fifteen years, Dr. Parsons worked as an advanced energy and technology consultant with the Manitoba Government. He has been directly involved in a variety of novel technology areas, including electric and fuel cell cars and transit buses. For example, he was directly involved with the on-route demonstration of four second-generation electric buses begun in 2014 by Winnipeg Transit. Since 2017 he has authored more than eighteen op-ed style articles primarily relating to sustainability that have been published locally in the *Winnipeg Free Press*, and was a co-author of an op-ed article in the national journal *Policy Options*. Most recently in 2021, he had a paper accepted in the peer-reviewed journal *Sustainability*.

Interesting Fact:

In March 2011, directly as part of electric transit bus development and demonstration activities, Dr. Parsons was one of four Manitobans visiting in the Tokyo area of Japan, and was present when the Tohoku earthquake (and associated tsunami) struck. This is the most powerful earthquake ever recorded in Japan, and the fourth most powerful ever recorded in the world.