

SUSM 701 – Advanced Theories of Sustainability Management

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Meetings

Lectures on Tuesdays, 8:30 – 11:20 in HH 119, during the reading week on Thursday 8:30 – 11:20. No lecture on Nov 20, lecture on Nov 27th is from 8:30 – 4:30pm in REV 200.

Office hours:

By e-mail appointment and Tuesdays, 1:00 – 2:00 pm.

Delivery of course material:

1. Material for this course will be delivered by the D2L system. Go to <https://learn.uwaterloo.ca/>
2. The course outline is available on the course website (through the D2L system).
3. We strongly encourage note taking during the lectures. Because of intellectual property and copyright issues, we cannot guarantee that all presentation material will be uploaded on the course website. We will also use the D2L system to deliver information to students in the course. We expect (assume) that you will be checking the course website regularly (at least every working day).

Tips for success:

1. Attend all sessions.
2. Come prepared for all sessions, and follow up on all sessions.
3. Plan ahead: check when assignments are due, tests and examinations are scheduled.

Creating an effective learning environment in class:

1. We will start ‘on time’, so please arrive on time. If you arrive late, then please enter by the back door.
2. We will get you out of the classroom in good time – please wait until we dismiss the class to prepare for your departure.

- a. Please do not disturb your classmates' abilities to learn.
 - b. Please do not talk in class.
 - c. Please turn off cellphones, etc.
3. If you use your laptop during lectures, then please turn the volume off, please do not surf to distracting (e.g. image-intensive) sites and please type quietly.
 4. It is expected that students have read at least the core readings before class, because they will be the basis of the classes.
 5. Our time together is valuable. We will, however, work to make the lectures informative, relevant and interesting. Throughout term, we will welcome suggestions as to how the learning environment can be improved.

Pre-requisite:

Tuition fees arranged. Be aware that you do not have access to the course website without having arranged your tuition fees.

Calendar description:

Advanced Theories of Sustainability Management SUSM 701 introduces background, concepts and theories of sustainability management.

Course description:

The objective of this course is to understand theory in terms of epistemology, review major theoretical paradigms in the social sciences, understand the relationship of theory to ontology and methodology, and with regard to theory application in sustainability management. Students should show the capacity to identify, use and potentially build theories in sustainability and in management in relation to their research questions.

Course Website:

Course information will be delivered through the D2L system (<https://learn.uwaterloo.ca>).

Course assessment:

Participation (20%): The course has a strong focus on active participation. It is expected that the students read the readings in advance and will be able to actively contribute to in-class discussions. Participation is not a case of ‘more is better’. Instead, you should strive to make occasional contributions that reveal your ‘engagement’ with the course material. This may be indicated by comments that make new connections among different parts of the material for the course (that is, the readings, the lectures, the discussions, etc.), comments that challenge or support positions in readings and/or lectures, comments that link other experiences to material in the course, comments that relate external, world events to material in the course, and comments that respond to questions posed in discussions in an informed manner, etc. You are asked to read and think about all of the assigned readings before each meeting; review of ideas and information presented in the corresponding lecture(s) is also required. Do bring your own ideas, arguments and reflections to the class – the quality of these meetings will depend upon students’ preparation.

Reflection Papers (2 pages each, 10% each):

1. Describe the working title of your planned PhD research and present a brief statement of the specific contributions to knowledge that you anticipate making through your doctoral research.
2. What are advantages and drawbacks of the SDGs for addressing sustainability problems? Support your arguments using the literature.
3. Define the major focus of your work and the main bodies of literature and sub-areas that you will use for your research.

Topic Presentation (10%): Introduction of the course topic by presenting relevant papers and research that answer the respective questions. The presentation should include an introduction to the topic and a critical discussion based on the readings. The presentation will be 50 minutes including discussion. Feel free to select any kind of method to discuss the topics. Presentation groups will be set by the course instructor and can be found on the course website.

Final Presentation (20 %): Each student will present a proposal for a research project addressing a sustainability management issue. The presentation includes the working title of your thesis and a brief statement of the specific contributions to academic knowledge, to real-world problem solving and to the SDGs that you anticipate making through your doctoral research. Define the major focus of your work (background, rationale, research questions, and expected results) and the main bodies of literature and sub-areas that you will use for your research.

Final Paper (20%): Present a proposal for a research project addressing a sustainability management issue. The presentation includes the working title of your thesis and a brief statement of the specific contributions to academic knowledge, to real-world problem solving and to the SDGs that you anticipate making through your doctoral research. Define the major focus of your work (background, rationale, research questions, and expected results) and the main bodies of literature and sub-areas that you will use for your research. Support your arguments with academic references.

All presentations and papers have to be submitted through the respective dropbox. Presentations may be presented by connecting a laptop to the classroom system or by using the classroom computer and a USB stick.

Summary of 'due dates':

- **Reflection papers:** Paper 1 due on September 23 (11:59 pm in the Reflection Paper Dropbox), paper 2 due on October 14 (11:59 pm in the Reflection Paper Dropbox), paper 3 due on November 4 (11:59 pm in the Reflection Paper Dropbox)
- **Topic presentations:** Due dates for the respective topic presentations are listed on the course website
- **Final presentation:** The presentation is due on November 25, 11:59 pm in the Final Presentation Dropbox
- **Final paper:** Due on December 4, 11:59 pm in the Final Paper Dropbox.

Academic Integrity: To maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. <http://www.uwaterloo.ca/academicintegrity/>. Students who are unsure what constitutes an academic offence are requested to visit the on-line tutorial at: <http://www.lib.uwaterloo.ca/ait/>

Research Ethics: Please also note that the 'University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Human Research and Animal Care (Office). The ethics review and clearance processes are intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants (Guidelines) as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.)' (<http://www.research.uwaterloo.ca/ethics/human/>). Recognise, however, that students are instructed NOT to contact any 'outside organisations' to complete their written assignments for this course.

Note for students with disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Religious Observances: Please inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>. When in doubt, please contact your Undergraduate Advisor for details.

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>. For typical penalties, check Guidelines for Assessment of Penalties, <http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm>

Appeals: A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals). See: <http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm>

Consequences of Academic Offences: ENV students are strongly encouraged to review the material provided by the university’s Academic Integrity office (see: <http://uwaterloo.ca/academicintegrity/Students/index.html>).

Course readings:

All readings can be acquired and downloaded through the library, through the course website, through course reserves, or are available in the internet. Please become familiar with the use of University of Waterloo’s library. The readings include the comprehensive examination reading list. The comprehensive examination reading list is available on the course website.

Course overview

Unit 1: What are we doing here or what is a PhD? (September 11)

- Why are you in the SUSM PhD programme?
- Introduction to the course
- What is a PhD?
- Preparation for Unit 2: For one of the academic papers from the comprehensive examination list, describe the main topic, the structure, the quality and the importance of the paper and explain how you did the analysis (participation mark).

Unit 2: Academic Publishing (September 18)

- How to write academic publications
- Quality criteria for academic publications
- Academic databases
- Preparation of presentation for September 25: Which sustainability problem are you most interested in? Prepare to describe the problem and why you think it is important to find a solution for it and which SDGs it addresses (participation mark).

Unit 3 and 4: Sustainability and the Sustainable Development Goals (September 25, October 2)

Lecture Content

- **Group presentation (Sep 25):** What is sustainability and sustainable development?
- **Group presentation (Oct 2):** Are the SDGs able to achieve sustainable development or are they a political buzz?
- Student presentation and discussion: Which sustainability problem you want to solve and why?
- Theoretical concepts of sustainability and sustainable development: General approaches, The Brundtland Definition of Sustainable Development and its operationalization, The Sustainable Development Goals (SDG)
- Weak vs. strong sustainability

Discussion

Impact analysis: The interdependency of the SDGs. Are some SDGs more important than others?

Core readings

- Ayres, R. U., & Gowdy, J. M. (2001). Strong versus weak sustainability: Economics, natural sciences, and consilience. *Environmental Ethics*, 23, 155-168.
- Brundtland, G. H. (1987). *Our Common Future*. Oxford, NY: Oxford University Press.
- Daly, H. E. (1990). Toward some operational principles of sustainable development. *Ecological Economics*, 2(1), 1-6. doi: 10.1016/0921-8009(90)90010-r
- Dietz, S., & Neumayer, E. (2007). Weak and strong sustainability in the SEEA: Concepts and measurement. *Ecological Economics*, 61(4), 617-626. doi: <http://dx.doi.org/10.1016/j.ecolecon.2006.09.007>
- Griggs, D., Stafford-Smith, M., Gaffney, O., Rockström, J., Öhman, M. C., Shyamsundar, P., . . . Noble, I. (2013). Policy: Sustainable development goals for people and planet. *Nature*, 495(7441), 305.
- Kates, R. W., Parris, T. M., & Leiserowitz, A. A. (2005). What is sustainable development? *Environment: Science and Policy for Sustainable Development*, 47(3), 8-21.
- Martinez-Alier, J., Temper, L., Del Bene, D., & Scheidel, A. (2016). Is there a global environmental justice movement? *The Journal of Peasant Studies*, 43(3), 731-755. doi:10.1080/03066150.2016.1141198
- Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet*, 379(9832), 2206-2211.
- United Nations. (2015). *Transforming our world: the 2030 agenda for sustainable development* (U. Nations Ed.). New York, NY: United Nations.
- United Nations. (2018). *Global indicator framework for the Sustainable Development Goals*. New York: United Nations.

Additional Readings

- Elkington, J. (1998). *Cannibals with forks*. Gabriola Island, BC: New Society Publishers.
- Emerson, J. (2003). The Blended Value Proposition: Integrating social and financial returns. *California Management Review*, 45, 35-51.
- Faucheux, S., & Nicolai, I. (2003). From sustainable development to corporate social responsibility: An application to the European aluminum sector. *Int. J. Sustainable Development*, 6(2), 155-169.
- Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine*, 33, 122-126.
- Gibbs, D. C., Longhurst, J., & Braithwaite, C. (1998). Struggling with sustainability: weak and strong interpretations of sustainable development within local authority policy. *Environment and Planning*, 30, 1351-1365.
- Hacking, T., & Guthrie, P. (2008). A framework for clarifying the meaning of Triple Bottom-Line, Integrated, and Sustainability Assessment. *Environmental Impact Assessment Review*, 28(2-3), 73-89. doi: 10.1016/j.eiar.2007.03.002

- Harlow, J., Golub, A., & Allenby, B. (2011). A Review of Utopian Themes in Sustainable Development Discourse. *Sustainable Development*, n/a-n/a. doi: 10.1002/sd.522
- Pearce, D. W., & Atkinson, G. D. (1993). Capital theory and the measurement of sustainable development: an indicator of “weak” sustainability. *Ecological Economics*, 8, 103-108.
- Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*, 89(1/2), 62-77.
- United Nations. (2012). The Future We Want (pp. 19). Rio de Janeiro: United Nations.
<http://www.un.org/en/sustainablefuture/>
- Vanclay, F. (2004). The Triple Bottom Line and Impact Assessment: How do TBL, EIA, SIA, SEA and EMS relate to each other?. *Journal of Environmental Assessment Policy & Management*, 6(3), 265-288.

Unit 5: The Economy and Sustainable Development (October 11)

Lecture Content

- **Group presentation:** Economy and sustainable development: How do they fit?
- Economic approaches of sustainable development
- Economic development, economic growth

Core Readings

- Allen, R. C. (2011). *Global economic history: a very short introduction* (Vol. 282). Oxford, UK: Oxford University Press.
- Coase, R. H. (1960). The problem of social cost. *Journal of law and Economics*, 3, 1-44.
- Costanza, R. (1989). What is ecological economics? *Ecological Economics*, 1(1), 1-7. doi:
[http://dx.doi.org/10.1016/0921-8009\(89\)90020-7](http://dx.doi.org/10.1016/0921-8009(89)90020-7)
- Costanza, R., D'Arge, R., De Groot, R., Farber, S. and others (1997). The Value of the World's Ecosystem Services and Natural Capital. *Nature*. Vol. 387, p. 253-260.
- Daily, G. C., Söderqvist, T., Aniyar, S., Arrow, K., Dasgupta, P., Ehrlich, P. R., ... & Walker, B. (2000). The value of nature and the nature of value. *Science (Washington)*, 289(5478), 395-396.
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, 302(5652), 1907-1912.
- Goulder, L. H., & Stavins, R. N. (2002). Discounting: an eye on the future. *Nature*, 419(6908), 673-674.
- Hunt, C., & Weber, O. (2018). Fossil fuel divestment strategies: Financial and carbon related consequences. *Organization & Environment*.
- Jackson, T. (2016). *Prosperity without growth: foundations for the economy of tomorrow*: Taylor & Francis.
- Kinzig, A.P., Perrings, C. Chapin, F.S. III, Polasky, S., Smith, V.K., Tilman, D., and Turner, B.L. II (2011). Paying for Ecosystem Services - Promise and Peril. *Science*. Vol. 334 (6056). Pp. 603-604.
- Krausmann, F., Fischer-Kowalski, M., Schandl, H., & Eisenmenger, N. (2008). The global socio-metabolic transition: past and present metabolic profiles and their future trajectories. *Journal of Industrial Ecology*, 12, 637-656

- Ostrom, E. (2015). *Governing the commons*: Cambridge university press.
- Pearce, D., Groom, B., Hepburn, C., & Koundouri, P. (2003). Valuing the future. *World economics*, 4(2), 121-141.
- Wackernagel, M., Onisto, L., Bello, P., Callejas Linares, A., Susana López Falfán, I., Méndez García, J., . . . Guadalupe Suárez Guerrero, M. (1999). National natural capital accounting with the ecological footprint concept. *Ecological Economics*, 29(3), 375-390. doi: [http://dx.doi.org/10.1016/S0921-8009\(98\)90063-5](http://dx.doi.org/10.1016/S0921-8009(98)90063-5)

Additional Readings:

- Barbier, E. (2011). The policy challenges for green economy and sustainable economic development. *Natural Resources Forum*, 35(3), 233-245. doi: 10.1111/j.1477-8947.2011.01397.x
- Costanza, R. (1991). *Ecological economics: the science and management of sustainability*. New York: Columbia University Press.
- Daly, H. E. (1990). Toward some operational principles of sustainable development. *Ecological Economics*, 2(1), 1-6. doi: 10.1016/0921-8009(90)90010-r
- Lovins, A. B., Lovins, L. H., & Hawken, P. (2007). A Road Map for Natural Capitalism. [Article]. *Harvard Business Review*, 85(7/8), 172-183.
- Pearce, D. W., Markandya, A., & Barbier, E. B. (1989). *Blueprint for a green economy*: Earthscan/James & James.
- Robert, K. H., Schmidt-Bleek, B., de Lardereel, J. A., Basile, G., Jansen, J. L., Kuehr, R., . . . Wackernagel, M. (2002). Strategic sustainable development - selection, design and synergies of applied tools. *Journal of Cleaner Production*, 10(3), 197-214.
- Singh, S.J. & Eisenmenger, N. (2011). How unequal is international trade? A biophysical perspective. *Journal für Entwicklungspolitik (JEP)* [Austrian Journal for Development Studies]. Special issue on Bridging the Social and the Natural in Development Studies. Guest editors: Singh, S.J. & Köhler, B. Vol. 26(4). Mattersburger Kreis: Vienna (see course website)
- TEEB (2010). *The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB*. (for a link see course website “Downloadable Content”)
- UNEP (2011). Introduction. Setting the Stage for a Green Economy Transition. (for a link see course website “Downloadable Content”)
- Unmüßig, B., Sachs, W., Fatheuer, T. (2012). *Critique of the Green Economy. Toward Social and Environmental Equity* . Heinrich Böll Foundation, Publication Series on Ecology, Vol. 22 (English edition) (for a link see course website “Downloadable Content”)
- Victor, P.A. & Jackson, T. (2012). A Commentary on UNEP’s Green Economy Scenario. *Ecological Economics*, Vol. 77, pp. 11-15.

Wackernagel, M., & Rees, W. E. (1997). Perceptual and structural barriers to investing in natural capital: Economics from an ecological footprint perspective. *Ecological Economics*, 20(1), 3-24. doi: [http://dx.doi.org/10.1016/S0921-8009\(96\)00077-8](http://dx.doi.org/10.1016/S0921-8009(96)00077-8)

Wiedmann, T., Schandl, H., Lenzen, M., Moran, D., Suh, S., West, J. & Kanemoto, K. (2013). The material footprint of nations. PNAS Early Edition: www.pnas.org/cgi/doi/10.1073/pnas.1220362110

Unit 6: Sustainable Business and Management (October 16)

Lecture Content:

- **Group presentation:** Business and Sustainable Development: Contradictory or consistent?
- Management: Introduction, the management process (planning, organizing, motivating, controlling supply chain management)
- Management: business management approaches and theories
- Social enterprise and social innovation

Core Readings

Bansal, P., & Hoffman, A. J. (Eds.). (2012). *The Oxford handbook of business and the natural environment*. Oxford University Press. Part IX.

Bansal, P., & Song, H. C. (2016). Similar but not the same: Differentiating corporate responsibility from sustainability. *Academy of Management Annals*, annals-2015.

Bernstein, S., & Cashore, B. (2007). Can non-state global governance be legitimate? An analytical framework. *Regulation & Governance*, 1(4), 347-371. doi:10.1111/j.1748-5991.2007.00021.x

Burch, S., Shaw, A., Dale, A., & Robinson, J. (2014). Triggering transformative change: a development path approach to climate change response in communities. *Climate Policy*, 14(4), 467-487. doi:10.1080/14693062.2014.876342

Carroll, A. B. (1999). Corporate Social Responsibility - Evolution of a Definitional Construct. *Business & Society*, 38(3), 268-295.

Collier, P. (2008). *The bottom billion* (Vol. 129). Oxford: Oxford University Press.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147-160.

Donaldson, T., & Preston, L. E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review*, 20(1), 65-91. doi: 10.2307/258887

Elkington, J. (1998). *Cannibals with forks*. Gabriola Island, BC: New Society Publishers.

Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine*, 33, 122-126.

- Gladwin, T. N., Kennelly, J. J., & Krause, T.-S. (1995). Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research. *The Academy of Management Review*, 20(4), 874-907.
- Hacking, T., & Guthrie, P. (2008). A framework for clarifying the meaning of Triple Bottom-Line, Integrated, and Sustainability Assessment. *Environmental Impact Assessment Review*, 28(2-3), 73-89. doi: 10.1016/j.eiar.2007.03.002
- Hart, S. L., & Christensen, C. M. (2002). The great leap. *Sloan Management Review*, 44(1), 51-56.
- Karnani, A. (2007). The Mirage of Marketing to the Bottom of the Pyramid: How the Private Sector can help Alleviate Poverty. *California Management Review*, 49(4), 90-111.
- Lovins, A. B., Lovins, L. H., & Hawken, P. (2007). A Road Map for Natural Capitalism. *Harvard Business Review*, 85(7/8), 172-183.
- Matten, D., & Moon, J. (2005). Corporate Social Responsibility. *Journal of Business Ethics*, 54(4), 323-337. doi: 10.1007/s10551-004-1822-0
- Mintzberg, H., & Westley, F. (2001). Decision Making: It's Not What You Think. *MIT Sloan Management Review*, 42(3), 89-93.
- Porter, M. E. (1991). America's Green Strategy. *Scientific American*, April, 168.
- Porter, M. E., & Kramer, M. R. (2006). Strategy & Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*, 84(12), 78-92.
- Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*, 89(1/2), 62-77.
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534-559.
- Seyfang, G. (2009). The new economics of sustainable consumption. Minería transnacional, narrativas del desarrollo y resistencias sociales. Buenos Aires: Biblos.
- Weber, O., & Feltmate, B. (2016). Sustainable Banking and Finance: Managing the Social and Environmental Impact of Financial Institutions. Toronto, ON: University of Toronto Press (Chapters 1 and 9).

Additional Readings

- Beu, D., & Buckley, M. R. (2001). The Hypothesized Relationship Between Accountability and Ethical Behavior. *Journal of Business Ethics*, 34(1), 57-73. doi: 10.1023/a:1011957832141
- Chatterji, A. K., Levine, D. I., & Toffel, M. W. (2009). How Well Do Social Ratings Actually Measure Corporate Social Responsibility? *Journal of Economics & Management Strategy*, 18(1), 125-169. doi: 10.1111/j.1530-9134.2009.00210.x
- Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the Determinants of Corporate Social Responsibility: International Evidence on the Financial Industry. *Journal of Business Ethics*, 93(1), 115-135. doi: 10.1007/s10551-009-0186-x

- Dahlsrud, A. (2008). How Corporate Social Responsibility is Defined: an Analysis of 37 Definitions. *Corp. Soc. Responsib. Environ. Mgmt.*, 15, 1-13. doi: 10.1002/csr.132
- Freeman, R. E. (1984). *Strategic Management: A stakeholder approach*. Englewood Cliffs, NJ: Prentice-Hall. (p. 1-30)
- Freeman, R. E. (1994). The Politics of Stakeholder Theory: Some Future Directions. *Business Ethics Quarterly*, 4(4), 409-421. doi: 10.2307/3857340
- Husted, B. W., & Allen, D. B. (2006). Corporate Social Responsibility in the Multinational Enterprise: Strategic and Institutional Approaches. *Journal of International Business Studies*, 37(6), 838-849.
- Magretta, J. 2012. What management is: How it works and why it's everyone's business (2nd Edition; pp. 19-42). New York, NY: Free Press. First Chapter: Value creation: From the outside in (downloadable on the course website).
- Mintzberg, H. (1971). Managerial work: Analysis from Observation. *Management Science*, 18(2), B-97-B-110.
- Moon, J. (2007). The contribution of corporate social responsibility to sustainable development. *Sustainable Development*, 15(5), 296-306. doi: 10.1002/sd.346
- Pelozo, J. (2009). The Challenge of Measuring Financial Impacts From Investments in Corporate Social Performance. *Journal of Management*, 35(6), 1518–1541. doi: 10.1177/0149206309335188
- Robbins, S.P., DeCenzo, D.A., Coulter, M., & Anderson, I. 2014. Introduction to management and organizations. In *Fundamentals of management (7th Cdn Ed.; pp. 2-15)*. Don Mills, ON: Pearson Education Canada (downloadable on the course website).

Unit 7: Industrial Ecology (October 23)

Lecture Content

- **Group presentation:** Why should we care about materials?
- What is industrial ecology?
- What is the problem?
- Life cycle assessment

Core Readings

- Allwood, J. M., Ashby, M. F., Gutowski, T. G., & Worrell, E. (2011). Material efficiency: A white paper. *Resources, Conservation and Recycling*, 55(3), 362-381.
- Finnveden, G., Hauschild, M. Z., Ekvall, T., Guinée, J., Heijungs, R., Hellweg, S., ... & Suh, S. (2009). Recent developments in life cycle assessment. *Journal of environmental management*, 91(1), 1-21.
- Graedel, T. E., Harper, E. M., Nassar, N. T., & Reck, B. K. (2015). On the materials basis of modern society. *Proceedings of the National Academy of Sciences*, 112(20), 6295-6300.

- Hawkins, T. R., Singh, B., Majeau-Bettez, G., & Strømman, A. H. (2013). Comparative environmental life cycle assessment of conventional and electric vehicles. *Journal of Industrial Ecology*, 17(1), 53-64.
- Hellweg, S., & i Canals, L. M. (2014). Emerging approaches, challenges and opportunities in life cycle assessment. *Science*, 344(6188), 1109-1113.
- Hertwich, E. G., & Peters, G. P. (2009). Carbon footprint of nations: A global, trade-linked analysis. *Environmental science & technology*, 43(16), 6414-6420
- McDonough, W., & Braungart, M. (2010). *Cradle to cradle: Remaking the way we make things*. New York: North point press.
- O'Brien, M., Doig, A., & Clift, R. (1996). Social and environmental life cycle assessment (SELCA). *The International Journal of Life Cycle Assessment*, 1(4), 231-237.
- Tukker, A., & Jansen, B. (2006). Environmental impacts of products: A detailed review of studies. *Journal of Industrial Ecology*, 10(3), 159-182.

Unit 8: Earth Systems, Energy, and Climate Change (October 30)

Lecture Content

- **Group presentation:** Why do we need to care for climate, water, biodiversity, and energy?

Core Readings

- Burke, M., Craxton, M., Kolstad, C. D., Onda, C., Allcott, H., Baker, E., . . . Tol, R. S. J. (2016). Opportunities for advances in climate change economics. *Science*, 352(6283), 292-293. doi:10.1126/science.aad9634
- Devezas, T., LePoire, D., Matias, J. C. O., & Silva, A. M. P. (2008). Energy scenarios: Toward a new energy paradigm. *Futures*, 40(1), 1-16. doi:http://dx.doi.org/10.1016/j.futures.2007.06.005
- Figueres, C., Schellnhuber, H. J., Whiteman, G., Rockström, J., Hobley, A., & Rahmstorf, S. (2017). Three years to safeguard our climate. *Nature*, 546(7660), 593-595.
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Unit 9: Regional Economic Development and Innovation, and Ecology, Natural Systems, and Resilience (November 6)

Lecture Content

- **Group presentation:** What is the connection between regional economic development and sustainable development?

Core Readings

- Christopherson, S. (2011). Green dreams in a cold light. In A. Pike, A. Rodriguez-Pose, J. Tomaney, *Handbook of Local and Regional Development*, 371-380.
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Unit 10: SDGs revisited: What can academic researchers contribute to the SDGs (November 13)

Lecture Content

- The SDSN network (external presentation by Jon Beale, Manager Sustainable Development Solutions Network (SDSN) Canada)
- Group work: SDG consulting: Develop a concept to address the SDGs for an industrialized country (such as Canada), and emerging country (such as China, India or Mexico), and a developing country (such as Rwanda or Yemen)

Unit 11 and 12 (November 27)

Lecture Content

- Student Presentations