



THE UNIVERSITY OF BRITISH COLUMBIA

Sauder School of Business

Comm 495 - Section 201

**Business and
Sustainable Development**

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Time: M W 11:30-1:00

**Classroom: Angus 37
(January-April 2016)**

COURSE RATIONALE:

The state of the physical environment is becoming increasingly critical to corporate strategy. It is essential for companies to be aware not only of the threats to business-as-usual from changes in the physical and regulatory environments, but also the unique opportunities to achieve competitive advantage from acting proactively in this area.

COURSE STRUCTURE:

The course will provide students with an overview of the most important issues pertaining to sustainable development as they affect both the public and private sectors of the economy. As such, the course structure is divided into five general parts:

- (1) an overview of the scientific theory, evidence and issues;
- (2) a description of the issues of sustainable development in the public sector, with an emphasis on environmental and ecological economic theories and their application;
- (3) a summary of the issues of sustainable development in the private sector, with particular emphasis on analytical tools and strategic management;
- (4) in-class discussion of case studies and presentation of student research reports on corporate or public sector environmental issues; and
- (5) a possible field trip to a major regional industrial plant.

COURSE GRADING:

Midterm exam: 25%

Case slides 10% [2.5% per case]

Group research report and presentation: 50%

Participation: 15%

[Note: websurfing in class will negatively affect your participation mark!]

Rev. December 28, 2015

MAJOR COURSE REFERENCES

Peter N. Nemetz (ed.) *Bringing Business On Board: Sustainable Development and the B-School Curriculum*, co-sponsored by the National Round Table for the Environment and the Economy, 2002. [Selections will be made available in electronic format on UBC CONNECT at no cost].

Peter N. Nemetz (ed.) *Sustainable Resource Management: Reality or Illusion?*, Edward Elgar, 2007. [Selections will be made available in electronic format on UBC CONNECT at no cost].

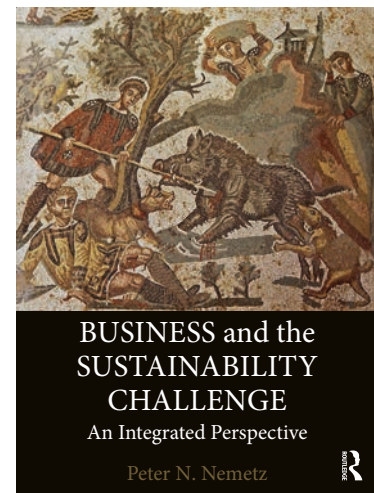
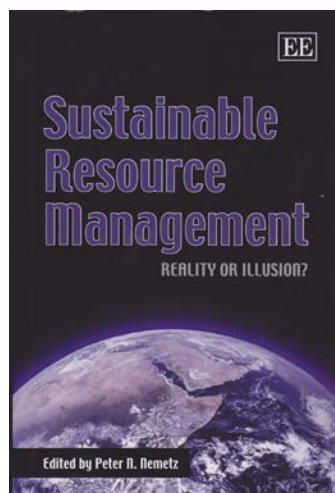
Peter N. Nemetz, *Business and the Sustainability Challenge: An Integrated Perspective*, Routledge, 2013. [NOTE: The course lectures are derived from the chapters in this book]. Available from the UBC Bookstore or on-line book retailers. **Cited in the course reading list as B&SC.**

Peter N. Nemetz, "Reconstructing the Sustainability Narrative: Separating Myth from Reality", chapter two in *Sustainability: Key Issues*, edited by Helen Kopnina and Eleanor Shoreman-Ouimet, Routledge, 2015, pp. 40-69.

An excellent source of background information:

GreenBiz Group and Trucost, 2015, *State of Green Business 2015*, downloadable at: <https://www.greenbiz.com/report/state-green-business-report-2015>

Other readings will be made available on on-line or assigned as the course progresses.



LEARNING OBJECTIVES:

At the end of this course, it is expected that students will be able to understand and explain the fundamental issues associated with sustainability and business; specifically, the basic science, the essentials of environmental economics and ecological economics, the principal public policy issues and the options available to the corporate sector in formulating and implementing strategy with respect to sustainability in a business context.

SPECIFICALLY:

1. Be able to define sustainable development as originally enunciated and be familiar with key components such as natural capital, intergenerational equity, development versus growth and dematerialization, precautionary principle, weak vs. strong sustainability).
2. Be familiar with the debate over the meaning of standard economic measures of well-being (such as GDP/capita) and some of the proposed alternatives.
3. Be familiar with the basics of environmental economics (especially the principles of public goods and externalities, common property resources vs. open access resources) as well as some of the basic methods of measuring environmental benefits and the debate over appropriate social discount rates.
4. Be familiar with some of the basic principles of ecological economics (especially how ecological principles are integrated into this new discipline, and the measurement problems associated with ecological services).
5. Have a working knowledge of the principal climate change effects, scientific issues and possible policy responses (such as the greenhouse effect, the Kyoto Protocol, non-linear dynamics, positive feedback loops, thresholds and tipping points, embodied carbon, pollution taxes, marketable permits, offsets).
6. Be familiar with some of the new metrics and data sources associated with sustainable development such as ecological and carbon footprints, NPRI, TRI and GHG databases.
7. Have a basic knowledge of some of the metrics and analytical methodologies used in the corporate sphere (eco-efficiency, cradle-to-grave vs. cradle-to-cradle, life-cycle analysis, IO-LCA, environmental management systems, product certification, chain of custody, triple bottom line accounting, sustainability reporting, risk assessment matrices).
8. Have a basic knowledge of some major market responses to climate change (European Trading System, Green portfolios, Dow Jones Sustainability Indices and others).

POSSIBLE EXTRAS:

9. Have a working knowledge of the basic concepts and issues around social enterprise and/or the basics of risk analysis.

COMMERCE 495 - SPRING 2016 SCHEDULE

Week #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	4-Jan Class #1	5-Jan	6-Jan Class #2	7-Jan	8-Jan
2	11-Jan Class #3	12-Jan	13-Jan Class #4	14-Jan	15-Jan
3	18-Jan Class #5	19-Jan	20-Jan Class #6	21-Jan	22-Jan
4	25-Jan Class #7	26-Jan	27-Jan Class #8	28-Jan	29-Jan
5	1-Feb Class #9	2-Feb	3-Feb Class #10	4-Feb	5-Feb
6	8-Feb BC Family Day	9-Feb	10-Feb Class #11	11-Feb	12-Feb Project proposal due
	MIDTERM BREAK February 15-19				
7	22-Feb Class #12	23-Feb	24-Feb Class #13	25-Feb	26-Feb
8	29-Feb Class #14	1-Mar	2-Mar Class #15	3-Mar	4-Mar
9	7-Mar Class #16	8-Mar	9-Mar Class #17	10-Mar	11-Mar
10	14-Mar Class #18	15-Mar	16-Mar Class #19	17-Mar	18-Mar
11	21-Mar Midterm Exam	22-Mar	23-Mar Student presentations #1	24-Mar	25-Mar GOOD FRIDAY
12	28-Mar EASTER MONDAY	29-Mar	30-Mar Student presentations #2	31-Mar	1-Apr
13	4-Apr Student presentations #3	5-Apr	6-Apr Student presentations #4	7-Apr	8-Apr Final Paper Due

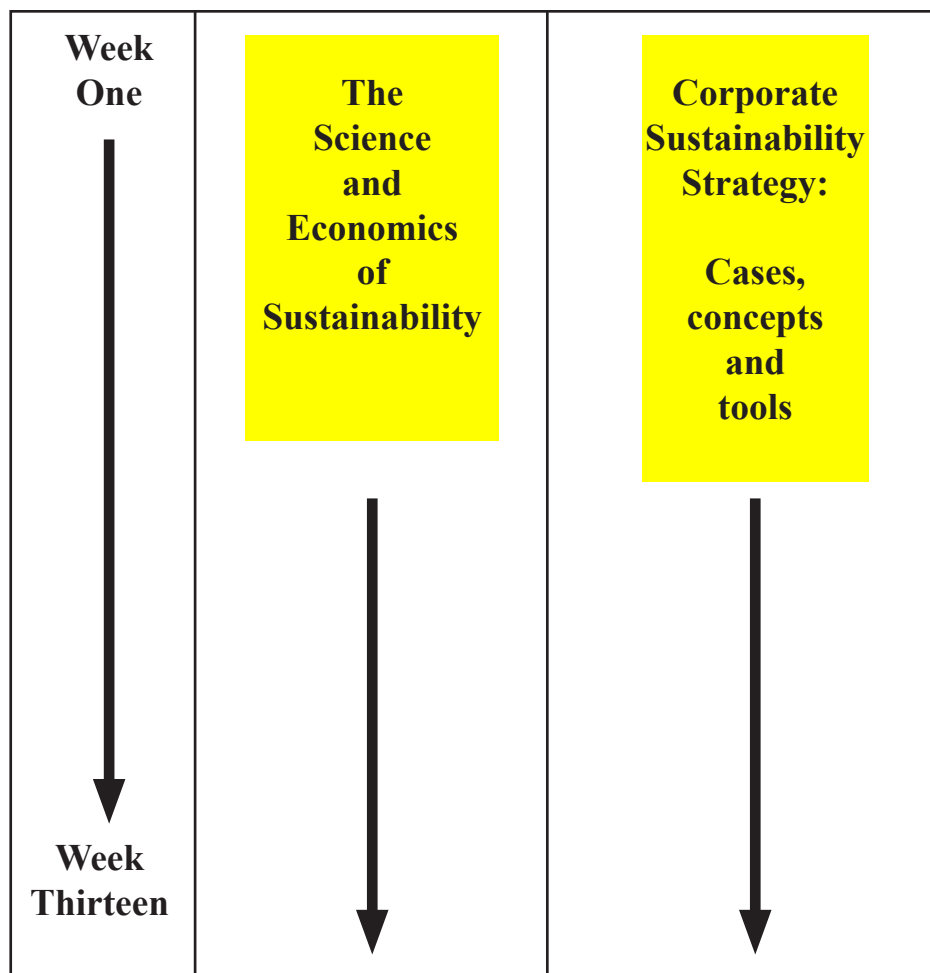
Class #	Date	Subject	KEY concepts/tools	Required and Recommended Readings	Textbook [B&SC] Linkage
1	04-Jan	Introduction	The economy vs. the environment	Recommended: Michael E. Porter and Claas van der Linde, "Green and Competitive: Ending the Stalemate" in <i>Bringing Business on Board</i> ; Peter N. Nemetz, "Reconstructing the Sustainability Narrative: Separating Myth from Reality," in Koprina 2015.	Ch. 1
2	06-Jan	Economic Development and the environment	Environmental Kuznets Curve; Is it possible to de-link economic growth and environmental degradation? Predator-prey relationships; Carrying Capacity; Demographic transition; Environmental Risk transition	Recommended: William Rees, "Ecological Integrity and Material Growth: Irreconcilable Conflict?" in <i>Bringing Business on Board</i>	Ch. 2-3
3	11-Jan				
4	13-Jan	Defining Sustainable Development and Measures of Well-Being	Is bigger better? Alternative measures of wealth; Natural capital; Genuine Progress Indicator; Weak vs. strong sustainability; Gross National Happiness; Index of Sustainable Economic Welfare; Genuine Savings Rate	Recommended: Edward O. Wilson, "Is Humanity Suicidal?" in <i>Bringing Business on Board</i> ; Herman Daly & John Cobb, "For the Common Good," in <i>Bringing Business on Board</i> ; Ronald Colman, "Measuring Genuine Progress," in <i>Sustainable Resource Management</i> ; Mark Anielski, <i>GPI: Alberta's Sustainability Trends</i> , in <i>Bringing Business on Board</i> ; David Suzuki, "The challenge of the 21st century: setting the real bottom line," in <i>Sustainable Resource Management</i> ; William Rees, "Is humanity fatally successful?" in <i>Sustainable Resource Management</i>	Ch. 4
5	18-Jan	CASE STUDY: Interface Carpets	see listing below	Required: Ch 13 in B&SC	Ch. 13
6	jn20	Corporate Sustainability Metrics	Redefining the nature of industrial production; Corporate Sustainability Metrics; Eco-efficiency; Eco-effectiveness; Downcycling; Upcycling; Cradle-to-grave; Cradle-to-Cradle; Industrial ecology; Biomimicry; Life Cycle Analysis - process vs. input-output; Mass balances; Industrial parks; Dow Jones Sustainability Index; Green Portfolios; Strategic Decay; PAS 2050; Defining the sustainable corporation; Index of sustainability; carbon footprinting	Recommended: William E. Rees, "Ecological Integrity and Material Growth: Irreconcilable Conflict?" from <i>Bringing Business on Board</i> ; Rebekah Young et al., "Byproduct Synergy: Mexico", from <i>Bringing Business on Board</i> ; T.J. McCann, "Chemical Industry Integration", from <i>Bringing Business on Board</i> ; W.G.B. Smith, "Accounting for the Environment: Can Industrial Ecology Pay Double Dividends for Business?", from <i>Bringing Business on Board</i> ; William McDonough and Michael Braungart, "The Next Industrial Revolution", <i>The Atlantic Monthly</i> , October 1998. - Downloadable off the web.; Investor Environmental Health Network (IEHN) Case Study, "Rohner Textiles: Cradle-to-cradle innovation and sustainability," December 2008. Downloadable off the web; Investor Environmental Health Network (IEHN) Case Study, "Shaw Industries: Ecoworx and Cradle-to-Cradle Innovation in Carpet Tile", date? Downloadable off the web.	Ch. 14-19
7	25-Jan				
8	27-Jan				
9	01-Feb	Ecological Economics	Ecosystem services; Efficiency vs. resilience; Natural capital; Development vs. growth; Material throughput; Weak vs. strong sustainability; Precautionary principle; Ecological economics vs. neoclassical economics model	Recommended: Robert Costanza et al., "The Development of Ecological Economics," in <i>Bringing Business on Board</i>	Ch.6 and pp. 203-213 from Ch. 9

Class #	Date	Subject	KEY concepts/tools	Required and Recommended Readings	Textbook [B&SC] Linkage
10	03-Feb	Ecological Economics (continued)	Case study: Licence to operate; The Ecological Footprint and some similar methodologies		
11	10-Feb	CASE STUDY: Osteel Forest Products	see listing below	Required: Ch. 21 from B&SC Recommended: Linda Coady, "What I Saw of the Revolution: Reflections of a Corporate Environmental Manager in the 1990s BC Coastal Forest Industry," and "Iisaak: a New Economic Model for Conservation-Based Forestry in Coastal Old Growth Forests, British Columbia," both in <i>Bringing Business on Board</i>	Ch. 21
February 15-19 Midterm Break					
12	22-Feb	Some Sustainability strategies	Product certification; Chain of custody; Ecotourism; Carbon credits; Biodiversity credits and offsets; Sustainability branding		Ch. 22
13	24-Feb	Measuring Ecological Values	Hedonic Pricing; Contingent Valuation; Willingness to Pay; Willingness to Accept; Travel cost methodology; Replacement cost; Avoidance cost; Use value; Existence value; Bequest value; Option value	Recommended: Stanley Hamilton and Moira Quayle, "Corridors of Green: Impact of Riparian Suburban Greenways on Property Values," in <i>Bringing Business on Board</i>	Ch. 7
14	01-Feb	Stakeholders and corporate accounting for sustainability	Triple Bottom Line versus Integrated Bottom Line		
15	02-Mar	CASE STUDY: Suncor	see listing below	Required: Ch. 23 from B&SC; Suncor 2012 Sustainability Report - available on their website Recommended: David Coglon, "The Journey Toward Sustainable Energy Development - the Experience of Suncor Energy" in <i>Bringing Business on Board</i>	Ch. 23
16	07-Mar	Misc. sustainability topics	Carbon trading; Carbon offsets; AA 1000; GRI-G3; ISO 14001; TRI; NPRI; Sustainability-based financial risk; Environment-sustainability risks; Risk assessment matrix		Ch. 24
17	09-Mar	Environmental Economics	Policy instruments: command and control; economic mechanisms (effluent charges, marketable permits); information programs (TRI, NPRI)		Ch. 5

Class #	Date	Subject	KEY concepts/tools	Required and Recommended Readings	Textbook [B&SC] Linkage
18	14-Mar	Some Ecological Principles	Revenge Theory; Biomagnification and Bioaccumulation; Non-Linear Dynamics and Irreversibilities; Resilience vs. stability; Efficiency vs. Resilience; Positive Feedback; Lagged systems; Systems Theory; Domain of attraction; Biodiversity; Dose-response functions; Exposure pathways		Ch 10
19	16-Mar	CASE STUDY: Wal-Mart	assessing the three components of sustainability	Required: Scott, Lee (2005) "Twenty First Century Leadership," Wal-Mart, October 24, available at http://walmartwatch.com/wp-content/blogs.dir/2/files/pdf/21st_Century_Leadership.pdf . Wal-Mart (2012) <i>Beyond 50 Years Building as Sustainable Future</i> . 2012 Global Responsibility Report. [on their website] Wal-Mart (no date) <i>Supplier Sustainability Assessment</i> . [on their website] Recommended: Recent articles concerning Wal-Mart's operations in North America or elsewhere in the general press, and any reputable anti-Wal-Mart websites.	Ch. 28
Self-study		Internalizing sustainability into corporate decision-making	Environmental cost accounting; Sustainability Reporting; Signaling sustainability; Internalizing sustainability into financial statements; Green Ledgers; Activity-based costing; Genuine Wealth Accounting; Sustainable Balanced Scorecard	Recommended: Murray Hogarth, "Doing Sustainability: The ECOS Corporation Story," in <i>Bringing Business on Board</i> ; Amory B. Lovins, L. Hunter Lovins and Paul Hawken, "A Road Map for Natural Capitalism," in <i>Bringing Business on Board</i> ; Brian Nattrass and Mary Altomare, "IKEA: Nothing is Impossible", in <i>Bringing Business on Board</i> ; Robert Repetto and Duncan Austin, "A Quantitative Approach to Strategic Environmental Risk Management," in <i>Bringing Business on Board</i>	Ch. 25
March 21 Midterm Exam					
20	23-Mar		STUDENT PRESENTATIONS		
21	28-Mar	EASTER - NO CLASS			
22	30-Mar		STUDENT PRESENTATIONS		
23	04-Apr		STUDENT PRESENTATIONS		

A GENERAL COMMENT ON THE PEDAGOGY OF COMM 495

In order to understand corporate strategy, it is necessary to be familiar with the environment within which the corporation operates, specifically the role of government - both economics and policy. Understanding what influences government policy in the area of sustainability, in turn, requires knowledge of some basic ecological science. As such, the natural ordering of pedagogy should be: (1) the science, (2) the economics and policy, and, finally (3) corporate strategy. Since this course is ultimately focussed on business, the material will be twin-tracked; i.e. case discussions and material illustrating corporate sustainability strategy will be interwoven with the delivery of the economics and science as illustrated by the following schematic.



CASE DISCUSSIONS

There will be several case discussions in class. Students are expected to have read the case and be prepared to discuss it in class. Students will be asked to form ad hoc groups in each class to assume the role of stock analysts who are making presentations to a group of potential investors with recommendations. The analysts are to make a case for BUY or SELL to two classes of investors: those solely seeking financial returns versus those who are green or ethical investors. If the companies in question are not public, then the analysts will be advising venture capitalists on the value of the potential investment.

Note: there are three general types investors:

- (1) **traditional investors** interested in maximizing financial returns.
- (2) **triple bottom line investors** interested in funding those activities which achieve financial objectives while advancing social and environmental goals. The earliest description of this type of investor is to be found in Michael Porter's seminal article in the *Harvard Business Review* entitled "Green and Competitive: Ending the Stalemate" where Porter argues that firms can gain sustainable competitive advantage by incorporating social and environmental goals into their strategic planning. In other words, being sustainable can yield the highest long-term profitability. Note: it is important to distinguish between companies that are truly triple bottom line and those who merely report social and environmental indicators along with their financial results.
- (3) **social enterprise investors** interested in social and environmental returns subject to a minimum financial return constraint.

One way to characterize this tripartite typology is represented in the table below.

		Traditional Investor	
		YES	NO
Sustainable Investor	YES	Triple Bottom line: Michael Porter's model (see: Michael E. Porter and Claas van der Linde, "Green and Competitive: Ending the Stalemate" in <i>Bringing Business on Board</i>)	Social enterprise: focus on social and environmental aspects with minimum economic return constraint
	NO	focus solely on economic returns	

CASE DISCUSSIONS / DEBATES

The list of major cases to be considered are:

CASE A: Interface Carpets

Required Reading: B&SC Chapter 13

CASE B: Ooteel Forest Products

Required Reading: B&SC Chapter 21

Recommended Reading: Linda Coady, "What I Saw of the Revolution: Reflections of a Corporate Environmental Manager in the 1990s BC Coastal Forest Industry," and "Isaak: a New Economic Model for Conservation-Based Forestry in Coastal Old Growth Forests, British Columbia," both in *Bringing Business on Board*

CASE C: Suncor

Required Reading: B&SC Chapter 23

Recommended Reading: David Coglon, "The Journey Toward Sustainable Energy Development - the Experience of Suncor Energy" in *Bringing Business on Board*

CASE D: Wal-Mart

Required Reading:

Scott, Lee (2005) "Twenty First Century Leadership," Wal-Mart, October 24, available at http://walmart-watch.com/wp-content/blogs.dir/2/files/pdf/21st_Century_Leadership.pdf.

Wal-Mart (2012) Beyond 50 Years Building as Sustainable Future. *2012 Global Responsibility Report*. [on their website]

Wal-Mart (no date) *Supplier Sustainability Assessment*. [on their website]

Recommended Readings:

B&SC Chapter 28

Recent articles concerning Wal-Mart's operations in North America or elsewhere in the general press, and any reputable anti-Wal-Mart websites.

Reference only:

Humes, Edward (2011) *Force of Nature. The Unlikely Story of Wal-Mart's Green Revolution. How It Could Transform Business and Save the World*. New York: Harper Business.

NOTE: for American public companies, you may wish to peruse their 10-K Annual reports which they file with the U.S. Securities and Exchange Commission at www.sec.gov. For Canadian public companies, the comparable site is SEDAR. In both cases, pay particular attention to the section on perceived risks.

DEADLINES:

Case Presentations:

Due before the beginning of the class on the day of the presentations. No marks will be awarded for late submission of presentation slides. All ad hoc groups must submit slides even if they are not chosen to present their material.

Group Project:

Proposal due February 12

Final paper due April 8 in electronic format. Five percent penalty per day for late submission.

TURN-IT-IN.COM: please note that all projects must be submitted to this website before the 4:00 deadline on the day it is due.

MARKING CRITERIA FOR PROJECTS

More Marks:

Use of systems analysis

Critical thinking; not taking statements at face value

Awareness of political and social context where relevant

A clear conception of the difference between “sustainability” and “non-sustainability” at both the societal and corporate level

A clear distinction between profit-driven investors and green investors

Awareness of triple bottom line issues (economic, ecological and social)

A well-reasoned argument with corroborative data suitable for publication rather than an opinion piece

A different perspective on a standard problem

Fewer Marks:

Text not consistent with financial data

Too narrow a focus; i.e. no systems analysis

Inaccurate statements of fact

Excessive reliance on others' analyses, even if footnoted

Undefined terms

Material without citations

Unclear wording/meaning

General statements without supporting specifics or evidence