

October 10, 2016

Fisher College of Business
The Ohio State University

MHR 7640

Business & the Environment: Strategies for Sustainability

Autumn Semester 2016 – Term 2

SYLLABUS

Class Schedule:

Mondays - 6:15 PM – 9:30 PM
Room: 210 Gerlach

Instructor: Senior Lecturer Neil L. Drobny, Ph.D.
Phone: (614) 268-6100
Office: 218 Ag. Admin. Building (2120 Fyffe Rd.)
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This syllabus has five Sections:

- Section 1 – Course Description
- Section 2 – Course Overview
- Section 3 – Class meeting Detail
- Section 4 – Deliverables and Course Mechanics
- Section 5 – OSU Policies

Section 1 - Course Description

How a company interacts with the environment is a strategic issue for many corporations and those who supply them. Strategic issues are associated with matters that convey competitive advantage, build shareholder value, and strengthen stakeholder relationships. The business-environment interface contains many acute opportunities to gain -- or lose -- shareholder value and stakeholder goodwill. Such opportunities pertain to image/reputation, product quality, risk management, attraction and retention of talent, and cost reduction, just to mention a few.

Business & the Environment will teach students how to integrate consideration of the environmental and social capital into thinking about business processes to improve a company's competitive advantage. The course will be anchored in the topic of sustainability, often referred to in a business context as the Triple Bottom Line, and will investigate two important dimensions of this concept. One will be translating the principles of sustainability into operational terms and the other will be establishing the business case for sustainable business practices.

Topics to be covered in the course will include: renewable and non-renewable energy issues, industrial ecology, by-product synergy, design for environment, green buildings, corporate social responsibility, and transparency and disclosure of environmental impacts. Local sustainability initiatives will be highlighted including the sustainability initiatives of several Central Ohio organizations. Students will also complete a team project.

Section 2 - Course Overview

The topics for each class session are summarized below.

Date	Topic(s)
Oct. 17	<ul style="list-style-type: none"> • 6:15-7:15: Introduction to Sustainability in Business • 7:15-8:15: Selection of projects and teams • 8:15-9:30: Independent team project work (in breakout rooms)
Oct. 24	<ul style="list-style-type: none"> • 6:15-7:15: Stakeholder Engagement • 7:15-8:15: Eco-labels and Certifications • 8:15-9:30: Independent team project work (in breakout rooms)
Oct. 31	<ul style="list-style-type: none"> • 6:15-7:15: Energy, Environment, Economy Nexus (Prof. Brent Sohngen – Guest Lecturer) • 7:15-8:15: Climate Change & Carbon – Business Risks & Opportunities • 8:15-9:30: Independent team project work (in breakout rooms)
Nov. 7	<ul style="list-style-type: none"> • 6:15-7:15: Strategic Materials Management • 7:15-8:15: Ecosystem Services • 8:15-9:30: Independent team project work (in breakout rooms)
Nov. 14	<ul style="list-style-type: none"> • 6:15-7:15: Sustainability in the Supply Chain • 7:15-8:15: Life Cycle Assessment (Prof. Liz Toman – Guest Lecturer) • 8:15-9:30: Independent team project work (in breakout rooms)
Nov. 21	<ul style="list-style-type: none"> • 6:15-7:15: Columbus’ Smart City Program (Ms. Aparna Dial, Deputy Director, Columbus Dept. of Public Service – Guest Lecturer) • 7:15-8:15: The Built Environment • 8:15-9:30: Independent team project work (in breakout rooms)
Nov. 28	<ul style="list-style-type: none"> • 6:15-7:15: End-of-Term • 7:15-9:30: Independent team project work (in breakout rooms)
Dec. 5	<ul style="list-style-type: none"> • 6:15-as Needed: Team Project presentations.(approx.. 25 minutes per team including Q&A)

Section 3 – Class Meeting Detail

Oct. 17, 2016

COURSE KICKOFF AND PROJECT PLANNING

Read before class

- Course syllabus (come to class with your 1st and 2nd choice project).
- [Sustainability in USA – Top Trends in 2015](#)
- [State of Green Business – 2016.](#)

Agenda for Class:

- The instructor will review the syllabus and the overall plans for the course plus the business case for sustainability in business.
- Students will select their projects in accord with Attachment 1 and teams will have the opportunity to meet in breakout rooms.

Oct. 24, 2016

STAKEHOLDER ENGAGEMENT AND ECO-LABELS & CERTIFICATIONS

Read before class:

- [Engaging Employees to Create a Sustainable Business](#)
- [The Core of Materiality – What Matters Most.](#)
- [About Sustainability Reporting \(and related links\)](#)
- [Sustainability Certifications and Standards: Making Sense of the Maze for Your Business](#)
- [CDP: Driving Sustainable Economies \(and related links\)](#)

Agenda for Class:

- The instructor will discuss stakeholder engagement and the role played by eco-labels and certifications in executing a sustainability agenda.
- Project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Oct. 31, 2016

ENERGY & CLIMATE ISSUES

Read before class:

- [Business Solutions to Enable Energy Access for All.](#)
- [Cost of Inaction – Recognizing the Value at Risk from Climate Change.](#) (Read only the Executive Summary and Conclusions)
- [Reporting Your Company’s Carbon Footprint Can Save \\$1.5 million a year.](#)
- [COP 21 Commentary](#)
- [California Cap-and-Trade: A Booming Success in Disguise.](#)

Agenda for class:

- Guest Lecturer, [Professor Brent Sohngen](#), Department of Agricultural, Environmental and Development Economics, will discuss issues at the interface of environmental, energy and economic issues. The instructor will discuss climate change issues and global efforts to deal with them.
- Project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Nov. 7 2016

STRATEGIC MATERIALS MANAGEMENT & ECOSYSTEM SERVICES

Read before class:

- View: [Circularity: Preparing for the New Economy.](#)
- View: [Kalundborg Symbiosis.](#)
- [Achieving a Circular Economy: How the Private Sector is Reimagining the Future of Business.](#) (Read pages 4-15)
- [By-Product Synergy and Industrial Ecology](#)
- [The Value of the World’s Ecosystem Services and Natural Capital.](#)
- [A Safe Operating Space for Humanity.](#)

Agenda for class:

- The instructor will discuss the emerging concept that waste must be eliminated from all aspects of the value chain and examples of where and how that is being accomplished.
- Project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Nov. 14, 2016

SUSTAINABILITY IN THE SUPPLY CHAIN AND LIFE CYCLE ASSESSMENT

Read before class

- [Sustainability Through the Value Chain. Click here to download.](#)
- [From Risk to Resilience – Learning to Deal with Disruption.](#)
- [Tracing Conflict Minerals Proves Elusive and Expensive.](#)
- [Life Cycle Assessment Principles and Practice.](#)

Agenda for class:

- The instructor will review the importance of assessing sustainability impacts throughout entire supply chains. Guest Lecturer, Assistant Professor [Elizabeth Toman](#), School of Environment & Natural Resources, will discuss life cycle assessment as a tool for measuring the sustainability of products and processes.
- Project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Nov. 21, 2016

SUSTAINABILITY IN BUILDINGS AND TRANSPORTATION

Read before class:

- [Columbus Smart City Application.](#)
- Review the website, [LEED is driving the Green Building Industry:](#)
- [Making the Business Case for High Performance Green Buildings.](#)

Agenda for class:

- Guest Lecturer, Ms. Aparna Dial, Smart Columbus Program Manager, will discuss implementation and execution of Columbus' recent receipt of a major federal grant to demonstrate "next-generation" transportation concepts and technology in Columbus. The instructor will discuss how sustainability is being embedded into the built environment.
- Project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Nov. 28, 2016

END-OF-TERM EXAM

Read before class:

- *None*

Agenda for class:

- After a 60-minute end-of-term exam, project teams will have the opportunity to meet in breakout rooms and to consult with the instructor on project matters.

Dec. 5, 2016

TEAM PROJECT PRESENTATIONS

Read before class:

None

Agenda for class:

- Each team or individual will present project results. Approximately 2025 minutes per team will be available including Q&A. Project clients will be invited to attend.

Section 4 – Deliverables and Course Mechanics

Project

As described in Attachment 1 students will work in teams on a major project. Students will work in teams of 3-5 students each on projects to find solutions of business problems and issues expressed by various client organizations. Students will self-select teams and projects at the first class meeting on October 17.

Each project team will prepare a report on its work. The target length (not a minimum or maximum) is 25 double-spaced pages, 12 point Times Roman font with one-inch margins. Project summaries will be presented orally (PowerPoint format and 15 min. in length) in class on **December 5** (the last class meeting). For team projects, all team members should participate in the presentation.

Your PowerPoint presentation deck and report in MS Word format are due to the instructor in electronic form via email before the **beginning of class on December 5**.

Approximately 60 minutes at the end of each class period will be set aside for student teams to work on their projects in breakout rooms. The instructor will visit each team to answer questions and provide needed guidance.

The project reports and presentations will count 40 percent of the final course grade.

Individual Research Project

In 2015 the United Nations released 17 Sustainable Development Goals:

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Insure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

[These broad overarching goals](#) are intended to be guideposts for corporations, governments, and individuals in setting their sustainability agendas. Leading corporations, such as [Dow](#) have relied on the SDGs in setting their long term sustainability goals. The SDGs were preceded by the [Millennium Development Goals](#) (MDGs).

You are to prepare a briefing document to acquaint C-level and board-level executives of a Fortune 1000 corporation summarizing implications of the SDGs for their long term strategy. To provide a focus for your work you should think in terms of an industry sector (but not necessarily a company) that interests you.

Your briefing document may be in the form of a report or a Power Point deck. If you choose to prepare a report, the target length should be about 10 pages (not a minimum or maximum), double spaced, 12 point Times Roman font and 1 inch margins. If you choose to prepare a Power Point deck shoot for about 15 slides (not a maximum or minimum).

A good place to get started on your research is [here](#).

Your briefing document will count 30 percent of your final course grade. It will be due to the instructor via email by 10 PM on **November 30**.

End-of-term Exam

At the next to last session of class you will take a 60-minute exam covering material presented in class and assigned reading. There will be a mix of true/false, multiple choice, fill-in-the-blank, and short essay questions.

The exam will count 30 percent of your final grade.

Summary of Deliverables

- Briefing Document – due Wednesday, **November 30**.
- Project reports and presentation PowerPoint decks – due **Monday, December 5**.

Grading

Your course grade will be based on a combination of factors weighted as follows:

- | | |
|-------------------------|------|
| • Project | 40 % |
| • SDG Briefing Document | 30% |
| • End of Term Exam | 30% |

Letter grades will be assigned to all work using the following criteria.

A Demonstrates superb understanding of the subject as evidenced by depth and scope of critical thinking and analysis about the subject. (4.0)

A - in between A and B+ (3.7)

B+ Demonstrates complete understanding of the subject as evidenced by analysis and thinking about the subject. (3.3)

B in between B+ and B- (3.0)

B - Demonstrated depth and/or understanding of subject matter is somewhat below that which should be attained from information presented in class or in reading assignments (2.7)

C+ in between B- and C+ (2.3)

C Demonstrated depth and/or understanding of subject matter is clearly below that which should be attained from information presented in class or in reading assignments (2.0)

C - in between C and D (1.7)

D + Demonstrated depth and/or understanding of subject matter is significantly lacking in one or more significant aspects (1.3).

D Demonstrated depth and/or understanding of subject matter is significantly lacking in many significant aspects (1.0).

E Demonstrated gross lack of understanding of subject matter, lack of interest in course material, and/or unsatisfactory effort on assigned work (0).

Presentations and written material will be graded not only on content but how well the content is presented. In this regard students are encouraged to take advantage of the free resources available at the OSU Center for the Study and Teaching of Writing (www.cstw.osu.edu). *The Center's assistance may be engaged to assist with improving the quality of written work before it is submitted for grading.*

Class Attendance and Participation

There is no separate grade for attendance (which will be taken) and participation. However, both are important as class discussion an important part of the learning process and they will enter the grading process as follows. If your final course grade based on the course deliverables is on the borderline between one grade and the one higher, you will receive the higher grade if you have been an active participant in class discussion. If you were relatively uninvolved throughout the term, your grade will be the one lower.

Absences

Excused absences will be approved by the instructor on a case-by-case basis. Except where an emergency is involved, requests should be made by phone or email at least 3 days in advance

Late Deliverables

Late submissions of graded work will be penalized one grade increment for 6 each hours it is late. For example, A-graded work received 6 hours late will be awarded a grade of A minus; 12 hours late and the awarded grade will be a B plus, etc.

All assigned work must be submitted to receive a grade in the course. Even if an assignment is so late that it would receive a "zero", it must still be submitted, no later than 3 days before final course grades are due. Otherwise a course grade of **Incomplete** will be assigned..

Section 5 - OSU Policies

Your attention is directed to the following OSU policies.

Diversity

We will, as a group and as individuals, hold ourselves accountable for demonstrating an openness to and appreciation for ideas of others. This means being conspicuously respectful of each other on all occasions and in all of our class transactions.

Disability

Every effort will be made to provide each student with a meaningful learning opportunity. If there are any obstacles that could prevent you from learning effectively, please set an appointment with the instructor so that we might jointly figure out how to circumvent those obstacles. Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. The Office for Disability Services, 614-292-3307, in room 150 Pomerene Hall can assist with coordinating reasonable accommodations should there be a need.

Academic Misconduct

All students are expected to abide by the university's Code of Student Conduct which may be found on the website of the Office of Academic Affairs, Committee on Academic Misconduct (COAM): <http://oaa.osu.edu/coam/home.html>. Your attention is particularly called to guidance on plagiarism: <http://oaa.osu.edu/coam/hownottoplagiarize.pdf>. The instructor is obligated by University policy to report to COAM all suspected cases of academic misconduct.

If you are unclear regarding any aspect of University policy on the above matters, discuss your questions with the instructor.

ATTACHMENT 1

MHR 7640

Business & the Environment: Strategies for Sustainability Term 2 – Autumn 2016

Project Assignment

All students will complete a team project. Projects will be performed in self-selected teams of 3-5 students and will be client-driven. The assignment will be to develop recommendations for solving a problem or pursuing an opportunity as framed by a client.

The following 11 projects have been vetted by the instructor and are available for selection by project teams

Client: Ohio Health

OhioHealth Riverside Methodist Hospital (RMH) recognizes that there may be a significant opportunity to improve the performance of its operations regarding environment, health & safety. The goal would be to reduce operating costs and to better support a healthy environment for our stakeholder community. This project will focus on benchmarking industry best practices and evaluating the potential to apply those practices at RMH. Such practices will include, but not be limited to, sustainable materials management, energy sourcing and conservation, water use and conservation, carbon emissions, cleaning and related janitorial operations, and renovation and new construction projects. The expected deliverable for this project is expected to include a strategy road map for integrating sustainability into RMH operations, including the development of a business case to support the creation of a sustainability coordinator role at RMH to execute on the plan developed. This project will focus on the medical complex on Olentangy River Road in Columbus, but shall be framed with the expectation that results may be adopted as applicable at other Ohio Health facilities. Students contemplating this project may find it helpful to consult the online Sustainability Roadmap for Hospitals.

Client: Clean Fuels Ohio

The goal of this project is to develop the draft of a sustainability report for Clean Fuels Ohio, (CFO) following GRI standards as closely as applicable. CFO is a local, high-impact non-profit organization that works to promote sustainability in transportation, broadly speaking, through research and demonstration programs and projects. CFO employs 10 people (including 2 interns) and was established in 2002. CFO is a major player in the Smart Cities grant recently awarded to the City of Columbus by the U.S. Department of Transportation in competition with over 80 other progressive cities.

This project will be a pioneering effort, in that non-profit organizations have only begun to prepare sustainability reports. In keeping with the overall purpose of sustainability reports, the draft report to be prepared for CFO should capture the sustainability practices employed by CFO in its internal operations, its selection of programs and projects, and in

service to its stakeholders. The project team will develop in consultation with CFO leadership and staff the content and structure of the report. The work should include an initial literature search to determine if other similar organizations have issued such a report. To the extent available from CFO, the report should include metrics to convey key points. Where desirable metrics are not available, recommendations should be made for their collection going forward. The audience for the report should be CFO stakeholders which are a diverse group. Definition of the stakeholder universe will be a joint effort of the project team and CFO.

Client: Jeni's Splendid Ice Cream

Jeni's Splendid Ice Cream ships ice cream product nationwide in containers that employ polystyrene and dry ice to protect the product. Because of its commitment to sustainability, Jeni's provides recipients with pre-paid labels to return (via ground truck transport) the package and polystyrene for possible reuse. About 30-40 percent of the returned items are, in fact, reusable. The non-reusable materials are recycled. While Jeni's believe this practice to be the most sustainable packaging option, that belief not supported by any life cycle metrics. This goal of this project is to develop those metrics and to suggest other options, including metrics, for Jeni's consideration. Data needed to support the required life cycle assessments are available from Jeni's.

Client: The Ohio State University

1- Carbon footprint of varsity sports

This project shall assess the carbon footprint of varsity sports at Ohio State. A starting point for the project should be an investigation of prior work done on the topic by peer universities. This investigation should yield (1) information on what sports have a sufficiently large impact to merit study, (2) what activities associated with each sport to be included in the study have the largest potential footprint – e.g. playing, practice and training per se, sourcing of supplies, purchasing of supplies, advertising and promotion, printing and disposition of programs, preparation of food served, disposition of uneaten prepared food and uneaten food brought by spectators, spectator travel, and other pertinent sources of footprint identified. Major sources of carbon footprint from Ohio State varsity supports will be ranked into a management hierarchy that will allow Ohio State to prioritize reduction options taking into account factors such as amount of carbon emitted, available control options, cost and other pertinent factors uncovered during the project.

2-Carbon footprint of building modifications

The purpose of this project is to identify building modifications undertaken by Ohio State which because of scale or the nature of work involved have a sufficiently large carbon footprint to warrant the carbon footprint of the project to be addressed in project specifications and design. As a starting point the project team will work the Ohio State facilities staff to develop a list of modification to be included in the scope of the project. The list of potential projects types is diverse and long, including for example the addition of restrooms to a building, the addition of

food preparation and service to a building, cosmetic renovation of a space including lighting, and floor and wall covering replacement just to mention a few. The carbon footprint estimates will be based on a life cycle assessment approach taking into account emissions that will occur not only during the construction (and demolition) associated with a project but also use of the project if water, energy and other resources will be consumed by activities in the project spaces.

3-Integrating sustainability messaging into the Fawcett Center outreach media

Ohio State's Fawcett Center (the Center) is a major conference center in Columbus also housing the offices of the Ohio State Athletic Department and WOSU. Increasingly the Center is finding it necessary to compete for business not only on traditional hospitality factors such as price, location and amenities, but additionally on the degree to which sustainable practices are integrated into operations. The Center has made progress in this regards but has not progressed to the point of effectively conveying its achievements on the Center website and media/advertising material. The goal of this project is to suggest website, media, and advertising design and content changes to achieve improvements. The work should include a benchmarking of sustainable practices and outreach representations for facilities with which the Center competes. Students considering this project should consult How to Increase your Bottom Line by Going Green published by the Green Hotels and Responsible Tourism Initiative.

4-Execution Plan for OSU' goal for sustainable purchasing

In 2015 Ohio State developed comprehensive sustainability goals. One goal deals with purchasing practices and states: "Develop university-wide standards for targeted environmentally preferred products and fully implement preferable products and services by 2025." Committees are at work to develop execution plans for all of the sustainability goals to which Ohio State is committed except the goal regarding purchasing practices. This project will serve as at least the foundational work on an execution plan for the Ohio State's sustainable purchasing goal. The work should include a benchmarking of what other Big Ten universities are doing in this regard and a review of best practices among public and private organizations that have purchasing requirements, including stakeholder priorities, similar to Ohio State.

5-Potential Impact on Operating Efficiency from Adopting Tablets in Blackwell Operations

The Blackwell generates significant hand-written documents in organizing and communicating the many aspects of its daily operations. The goal of this project is to determine whether a switch from hand-written documents to electronic tablets would yield reduced costs and increased performance through efficiency improvements. Blackwell management believes that reduced paper use might have the potential to yield significant savings. Another possibility is that more electronic sharing of information between and among staff might yield improvements in performance times for key tasks. Such anticipated benefits are based only on anecdotal information and casual observation. This project will collect and evaluate the data needed to make an informed judgement regarding the merits of adopting electronic tablets at the Blackwell.

Client: The Solid Waste Authority of Central Ohio**1-Food Waste Management in Central Ohio.**

This project will establish the baseline of food waste management in central Ohio and benchmark current approaches against best practices in other progressive cities. The work shall include a discussion of barriers and incentives applicable to the adoption of landfill alternatives to food waste management including, but not limited to regulatory, economic, and behavioral issues. Landfill alternatives of special interest include composting and anaerobic and aerobic digestion. Also of special interest are issues that impede the collection and processing of food waste from apartments and condominiums. The key deliverable for this project will be recommendations for actions by SWACO to promote landfill alternatives to food waste management (including waste reduction) in Central Ohio.

2-Economic Characterization of Recycling and Related Businesses in Central Ohio

This project will define the scale of business activities in Central Ohio that offer products or services which facilitate the recycling, reuse, repurposing and reduction as alternatives to the landfilling of waste materials. Information desired includes employment, revenues, products or services sourced within central Ohio, and other similar data deemed pertinent to the overall goal of the project. Also of interest is information regarding regulatory or institutional factors that impede business growth of companies operating in the targeted business sectors.

3-Community Level Impacts of Waste Diversion in Central Ohio

This goal of this project is to establish the nature and scale of economic, environmental and social impacts of programs and actions taken by communities in Central Ohio to promote the diversion of waste from landfills. Information of interest includes, but is not limited to, financial costs and benefits of municipal services, impact on tax revenues, employment impacts, social cost/savings of changes in carbon emissions, recreational and other impacts on green spaces. Results of this project will be employed to identify best practices that can be promoted throughout Central Ohio.