

SMBA 731 Sustainability Tools and Processes for New Initiatives

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There are over 120,000 MBA degrees awarded each year in the U.S. Only a small proportion of these newly minted MBAs will do more than read about a sustainable development issue during their graduate studies. This lack of exposure to innovation can be attributed to a dearth of schools attempting to proactively integrate sustainability focused experts and real-world projects into business curricula. The tide has changed, and more recently, the surge of interest in measurement, planning, energy conservation, carbon trading, green buildings and sustainability has brought many companies to the doors of business schools looking for the next generation of managers with the ability to quantify and develop a business case and management plan for sustainable opportunities. In this class we will hear from business leaders, integrate sessions with faculty across disciplines, analyze and evaluate different case studies. In teams, understand and develop a LCA sustainability plan, and complete an Energy Management System design competition in order to better understand the attributes of sustainable business practices, how to measure performance, manage change, and explore the business case for sustainability focused initiatives.

Course Mission: To build upon the fall semester Strategic Sustainability & Models course by reviewing sustainable business tools and processes. Through a combination of LCA, case analysis, group projects, guest speakers, videos, web based information, live cases, and analysis of current readings you will develop:

1. The ability to identify sustainable business opportunities, analyze and make recommendations as to how to implement new product initiatives.
2. Familiarity with the drivers and measures companies may use to implement sustainable initiatives, develop a sustainability plan, and the costs/benefits of these activities.
3. An understanding of the financial models and business case for new initiatives including energy management systems, building retrofits, clean energy, and estimates of uncertainties associated with these initiatives.


Alignment with Graduate Program Goals: This course is designed to foster greater in-depth discussion and equip you with the critical thinking and tools to develop a better understanding of sustainability in practice. Weekly objectives include the development of value propositions and tools that contribute to a management toolkit enabling better decision making within and outside of this course. A number of business leaders have accepted invitations to come to this class and share their experiences, or host us on-site. The speakers have also been invited to be part of student case discussions. You will utilize a Social Cost of Carbon (SCC) to analyze new initiatives. Through the insight provided by guest speakers, the application of your own skills and previous coursework, you will further develop the capacity to lead any organization towards an Integrated Bottom Line of economic, ecological, and social sustainability.

Linkages Across Curriculum: Previous courses in Strategic Sustainability & Models, Financial and Managerial Accounting, Applied Ethics, Statistics, Financial Management, Value Chains and Operations, Sustainable Consulting Project I, Systems Thinking, and Environmental Science provide a solid foundation from which to understand the general sustainable contexts in which businesses operate. This course builds on these functional areas and concepts to consider the sustainable challenges that businesses today face while hearing from successful area business leaders that are part of the next industrial revolution shaping a new direction for sustainable businesses. A common theme during the spring semester will be “Energy & Innovation” and we will focus on modeling the business case that includes environmental and social performance.

Course Materials

- Hitchcock, D., & Willard, M. (2008). The Step-by-Step Guide to Sustainability Planning. Routledge Earthscan. ISBN: 978-1-84407-616-1.
- Decision Tools 7.5 <http://www.palisade.com/academic/students.asp> (\$50)
- LCA Software www.Sustainableminds.com
- Other materials are available via the class Blackboard site and Harvard Course Pack

Case Studies

- Coursepack purchased on-line from Harvard Business School Press
<http://cb.hbsp.harvard.edu/cbmp/access/57297762>
- SMBA case studies available within Blackboard 

Pedagogy: The specific material we cover in any class will be largely determined by your input and questions when developing the business case for sustainability. One component of your class participation grade will be the quality of your input to the discussion process with case analysis and guest speakers. Keep in mind your participation is dependent solely upon your ability to engage in discussion. If you do not say anything during the semester, you can expect your performance evaluation to reflect your lack of substantive contribution. The goal is to develop your ability to consider managerial decisions and situations related to sustainable development, to find, analyze and solve problems, to communicate ideas, and to appreciate a general management point of view.

A second component of individual learning and assessment is directly linked to further developing your own ability to evaluate a business situation, determine the primary and secondary drivers of a given situation and to then research and develop feasible alternatives. These alternatives need to be tested and further developed before recommending a course of action, implementation plan and suggestions for monitoring and controlling outcomes. To this end, individual case studies are due in Blackboard before noon on the given date in this syllabus.

Group learning and assessment is facilitated through the use of projects with both presentation and written deliverables. The class will be divided into teams for the purpose of the course project deliverables. Each team will be required to electronically submit their LCA project report and presentations to the groups section of Blackboard. The first group project will be the development of new product development plan utilizing Sustainable Minds LCA software. Deliverables are due by noon on February 28th. Sustainability Plan assignment details and evaluation forms are available within Blackboard.

The second component of group learning and assessment will be deliverables of an Energy Management System (EMS) design competition. With the help of the USGBC regional Green Building Alliance, a commercial construction firm, invited speakers, and field trips, you will have the opportunity to develop an understanding of what it takes to design and value office and educational space paying particular attention to energy, ecological impacts, costs, and value created. The parameters of the competition are available in Blackboard with the task for teams to design an EMS for the Business School’s Rockwell Hall, using data analytics, and value of the system for a building. All teams will have details on square footage, orientation, number of employees in the space, availability of technology and HVAC systems, infrastructure, and a budget. The goal is to maximize the ROI and address the feasibility of a high performance work environment that include social and environmental performance. Project evaluation will be based on the review of an expert panel. In addition, audience members will also evaluate project presentations on preparation, thoroughness of the proposed business case for the renovations, innovation, and communication skills. Evaluation forms will be available within the Assignments folder in Blackboard. Reports will be due within Blackboard by 5PM on May 4th; presentations due by 9AM on May 9th.

Performance Assessment: Your final performance evaluation will be a composite of the instructor’s assessment of your contributions to discussions with invited speakers, case discussion, case report and project deliverables.

The overall performance evaluation will be assigned based on the following weightings:

Individual

Participation	20%	randomly, in class
5 Case write ups	30%	assigned

Groups

LCA Project Presentation/Report	20%	evaluated by instructor
EMS Design Presentation/Report	30%	evaluated by panel, audience, instructor

Deliverables: All written documents should be size 12 font, New Times Roman, single spaced, 1” margins, using [MLA citation guidelines](#) (as a single Word document with embedded tables and appendices). All evaluation forms are available within the Blackboard Assignments folder.

Participation (Individual =20%)

Substantive contributions to class discussion includes any comments, or analysis which advances the general class understanding of key management issues for the topic or issue, the major problems, key alternatives to consider, and appropriate decisions or plans of action that could be undertaken. I reward contributions that advance our discussion, help us change direction when needed, bring in outside sources, provoke useful debate, and build off of the comments of others. Both quantity and more importantly, *quality* is important. An assessment will be made six times using the following scale: 5 (excellent), 4 (very good), 3 (good), 2 (satisfactory), 1 (poor), 0 (absent). The best five times will constitute your participation. This system is set up to encourage risk-taking needed for excellent contributions and discourage counterproductive behaviors, such as talking just to talk. At the end of the course I sum the points and rank the class by these totals.

I use these scores to evaluate individual participation, where to make breaks between the extremes, and trends. Further details regarding participation evaluation can be found within the class Blackboard site.

Case Analysis Deliverables (Individual = 30%)

- Individual case analysis reporting requires the submission of a written report (as a single Word file, maximum length 2 pages, excluding title page and appendices).
- All written deliverables for this assignment must be submitted with a title page containing the following statement and the authors' signature. *"In accordance with the Business School's Code of Ethical Behavior, I attest that I have not engaged in any acts of plagiarism in completing this assignment."*
- Answer all case questions and follow the case report guidelines with the following structure: Problem Statement, Situation Analysis, Alternatives with Advantages and Disadvantages, Recommendations for Implementation of Chosen Alternative, Suggestions to Monitor and Control.
- *Four cases will be in-class, one case (TBD) will be a live case reviewed on-site.

LCA Project - Presentation/Report (Group = 20%)

- Each team will present their plans for assessing and managing a new product development plan utilizing LCA data.
- All written deliverables for this assignment must be submitted with a title page containing the following statement and all authors' signatures. *"In accordance with the Business School's Code of Ethical Behavior, I attest that I have not engaged in any acts of plagiarism in completing this assignment."*
- Outline and instructions for deliverable can be found within Blackboard.

EMS Design& Sustainability Plan Competition Presentation/Report (Group = 30%)

- Each team will be required to present their ideas for an innovative and high performance building system in addition to a written report (maximum length 5 pages, excluding title page and appendices).
- Cover sheets are required, with group member names. All written deliverables for project reports must be submitted with a title page containing the following statement and all authors' signatures. *"In accordance with the Business School's Code of Ethical Behavior, I attest that I have not engaged in any acts of plagiarism in completing this assignment."*
- Reports and presentations should follow the guidelines posted within Blackboard.
- Evaluation based on audience feedback, judging panel, and instructor's evaluation.

After the submission of project deliverables an electronic group member evaluation will be sent. Each member of a group will be asked to evaluate their own contributions to group work and the performance of the other members of the same group. This evaluation will be taken into consideration for overall performance evaluation for the course.

If you have any questions or concerns, stop by my office or contact me via email.

Course Goals, Learning Objectives and Assessment

Course Goals	Learning Objectives	Assessment
Develop better communication skills through the evaluation of managerial decisions and situations related to sustainable development and ethics.	Students will communicate their reasoning when resolving sustainability dilemmas; listen to other individuals' opinions, reasoning processes and decision alternatives when resolving dilemmas and enable this listening to affect the student's reasoning processes and decision alternatives.	Class Discussion Case Analysis Product LCA Plan
Ability to apply graduate course learning while contributing to business case analysis and discussion.	Students will be able to identify and analyze sustainable development dilemmas while applying previous coursework knowledge and tools working with a Social Cost of Carbon (SCC).	Class Discussion Case Analysis Product LCA Plan
Ability to recognize the drivers and measures companies use to implement sustainable initiatives.	Through hearing from experts and from utilizing current readings and case studies students will identify sustainability issues, opportunities and the stakeholders involved.	Class Discussion Case Analysis Product LCA Plan EMS Design Project
Orientation to a cost/benefit decision-making framework applicable to contemporary management issues.	Using a structured approach, students will apply the frameworks, e.g., GRI, GHG Protocol, and LEED along with simulation tools to find the business case for sustainability and SCC.	Class discussion Case Analysis Product LCA Plan EMS Design Project
Awareness, understanding, and evaluation of sustainable business opportunities and implementation obstacles.	Students will identify organizational influences on individual decision making processes and action while applying these influences to business situations.	Class discussion Case Analysis Product LCA Plan EMS Design Project
Apply decision-making and evaluation skills necessary to balance competing resource needs with long term and short term IBL performance.	Students will be able to develop, analyze, and evaluate options or alternatives for resolution of environmental, financial, and social challenges while utilizing relevant simulation and spreadsheet software.	Class Discussion Case Analysis Product LCA Plan EMS Design Project
To foster effective small group problem solving and cross-functional teamwork .	Students will be able to identify, analyze, discuss and debate business opportunities surrounding emerging business innovations.	Case Analysis Product LCA Plan EMS Design Project

Overview of Schedule and Topics¹

Week/Date/Topics	Speakers/Case Studies/Readings
1. Tuesday, January 17 Sustainable Minds Groups = Project II Course	Sustainable Minds LCA Software and Resources Model Sustainability Policy, and SOBA Code of Ethical Behavior, accessible within Blackboard HBS: Learning by the Case Method
2. Tuesday, January 24 Multi Criterion Decision Analysis	Analytical Hierarchy Process LCA Planning Social Cost of Carbon
3. Tuesday, January 31 Sustainability – Making the Business Case	CH 1: Preparing for Change CH 2: Refining the Business Case @Risk Monte Carlo simulation software installed before class Case Study: USAF (this case posted within Blackboard) Preliminary LCA Product modifications Review
4. Tuesday, February 7 Impacts and Priorities for Successful Sustainability Planning Individual Assignment	CH 3: Creating the Vision CH 4: Identifying Impacts & Priorities *Case Study: Ergonomics - Analytical Hierarchy Process (this case is posted within Blackboard)
5. Thursday, February 16 How to Create and Implement Sustainability Plans	Site Visit: PITTOHIO Cross Dock facility site visit Live case study CH5: Developing Sustainability Reports CH6: Developing an Implementation Strategy
6. Tuesday, February 21 Developing Systems and Structures	CH7: Developing Effective Management Systems CH8: Determining the Structures Needed to Manage the Effort HBS Case study: Amanco - Developing the Sustainability Scorecard “Transforming the Balanced Scorecard from Performance Measurement to Strategic Management” LCA Wrap Up
7. Tuesday, February 28 LCA Project Group Assignment	LCA Presentations and Reports <i>*all teams submit reports and slides by noon on February 28</i>
March 7 th	Spring Break

¹ Schedule subject to change

Thursday, March 9	Nespresso Sustainability MBA Challenge Case Released Nespresso Team Submission Due Monday, March 27th
8. Tuesday, March 14 USGBC-Green Building Alliance LEED Certification Sustainable Sites	Speaker: Leslie Montgomery USGBC & Green Building Alliance CH9: Informing and Involving Employees USGBC ; & USGBC LEED Green Associate Credentials How to Capture the ROI of LEED “LEED Building Requirements” *Bring a monthly utility bill from your apartment or home
9. Tuesday, March 21 Operations and Maintenance Living Building Challenge	Speaker: Jason Wirick, LEED ®AP, Phipps Living Building site visit Live case study Living Building Challenge USGBC: LEED Integrated Process Pittsburgh 2030 Challenge “Blue-Collar Green-Building Boom”
10. Tuesday, March 28 Energy Systems Individual Assignment	Speaker: Jack Mason, Director Entrepreneurship Program “Building the Green Way” “Finding and Implementing Energy Efficiency Projects” “New Energy Economy” DOE Annual Energy Outlook *HBS Case study: Financial and Environmental Impact of Sustainable Retrofitting
ASPEN CASE COMPETITION	March 31 – April 7
11. Tuesday, April 4 Renewables	Speaker: Laura Quinn, Burns & Scalo Solar/Green Roof site visit live case study USGBC: Energy and Atmosphere “Green Buildings and Productivity” “Energy Savings and Performance Gains in GSA Buildings”
12. Tuesday, April 11 Value Proposition for High Performance Buildings Individual Assignment *Integrated Case with Organizational Behavior	Speaker: Craig Stevenson, EVP James Construction USGBC: Materials and Resources “What Does Green Really Cost” “The Cost of Green Revisited” *HBS Case study: Interface’s Evergreen Services Agreement
Tuesday, April 18	No Class this week - Classes Meet According to a Monday Schedule
13. Tuesday, April 25 Innovation in Design	Speaker: Craig Stevenson, EVP James Construction Passive House Institute US Preliminary EMS Plan Review

<p>14. Tuesday, May 2 Project Feasibility</p> <p>Individual Assignment</p>	<p>*HBS Case study: Wells Fargo: Solar Energy for LA Branches</p> <p>Wrap up <i>*Teams submit report by 5PM on Thursday May 4th</i></p>
<p>15. Friday, May 5th Group Assignment 11:00 – 1:00</p>	<p>SMBA Energy Management System Design Competition (presentations to panel) Groups randomly drawn for order – Location TBD <i>*Teams submit slides by noon on May 4th</i></p>