Middlebury School *of the* Environment

-- Prepare for a life of meaning

SENV 3410: Sustainability Practicum

This course will explore, through reading, discussion, and direct engagement, sustainability in theory and practice. Using a case study approach to analyzing sustainability initiatives in the local area, students will explore—and practice—the process of advancing a project from inception to launch. This class will involve team-based research projects focused on identifying and analyzing solutions to real sustainability challenges confronted by government, business, or individuals.

The course will also emphasize training in critical leadership skills, including project management, team building and team leading, persuasive communication, networking, conflict resolution, understanding diverse communication styles, human-centered design, and emotional intelligence.

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Course structure

This practicum will be roughly divided into three parts. In the first part, coming primarily during the first two weeks but continuing throughout the semester, we will emphasize readings and discussions that explore the history, themes, and critiques associated with the concept of sustainability as a foundational principle of environmental practice. During this first part we will also engage in a number of leadership workshops intended to help you develop the skills needed to envision and advance ideas for positive environmental change. We will also explore a number of tools that can be used for developing pro-active approaches to envisioning and developing sustainable systems, in particular scenario planning and creative ideation through human-centered design.

In the second part, during Weeks 3-5, you will each work in a team of four students on a project aimed at addressing the following challenge: Assess a human-natural system for its vulnerability to climate change in the next 20 years and develop solutions that effectively increase the system's resilience in the face of uncertainty.

Middlebury College will serve as our template for how any community – be it a town, state, corporation, or ecoregion – can engage in scenario planning, systems analysis, and creative ideation both to define vulnerabilities and imagine strategies to strengthen society's sustainability and resiliency.

Finally, during Week 6, each team will prepare a presentation of their ideas for a panel of judges, using the skills learned throughout the program on persuasive communication.

Readings

During this course we will read a number of articles, reports, and book excerpts on the themes and projects of the course, which will be made available as pdfs or links on the class Moodle site. In addition, we will read one book in particular: *Flourishing* (John Ehrenfeld and Andrew Hoffman).

Assessment

Assessment in this course will be of your engagement, project, and writing.

Engagement.—I will be assessing you throughout the term with respect to your engagement with our activities and discussion of readings. In addition, each of you will be asked to perform a self-assessment of your engagement in all aspects of this class but especially of your role as a member of your project team. You will also be asked to perform an assessment of each member of your team. (20%)

Project.—The final results of your team project, both in terms of the oral presentation and written report, will be assigned a grade (with input from the panel of judges who observe the final presentations). (40%)

Writing.—Throughout the session, you will have a number of written assignments, both as individuals and in your teams. Each week for Weeks 1-4, a reflective question will be posed to you regarding concepts and/or processes introduced in the course. The questions will be presented on the School's blog, *The Stream*, and you will be asked to respond as individuals to each question as a comment to the blog post. Your responses will be visible to the general public, raising the bar for you when considering your answers. Your project team will also turn in a number of interim assignments intended to provide benchmarks for progress toward your finished product. In addition, I reserve the right to assign additional writing assignments, such as reaction papers, if I feel that you would benefit from a more structured environment for pre-discussion preparation. (40%)

Grading

Grades will be assigned on a straight percentage basis: 90-100% is an A, 80-89% is a B, 70-79% is a C, 60-69% is a D, and <60% is an F, with + and - grades assigned to high and low scores within those ranges.

Course Calendar

Week 1

Monday: Framework for "Sustainability"

Reading:

- This syllabus (the document you are reading now) in its entirety.
- Brundtland, G.H., et al. 1987. Towards Sustainable Development. Chapter 2 in *Our Common Future: Report of the World Commission on Environment and Development*.
- Schaefer, F. et al. 2006. Ecological Footprint and Biocapacity: The world's ability to regenerate resources and absorb waste in a limited time period. Eurostat. *[Read for the general principles and applications but not for the calculations.]*
- *Flourishing*: Chapters 1 and 2
- Engleman, R. 2013. Beyond Sustainababble. Pp. 3-18 (Chapter 1) in *State of the World 2013*. Island Press, Washington, DC.

Wednesday: The Structure of Systems

Reading:

- A Basic Guide to Systems Mapping handout
- Liu, J. et al. 2007. Complexity of coupled human and natural systems. Science 317(5844): 1513-1516.
- Berkes, F. et al. 2003. Introduction. In Berkes, F. et al. (Eds.) *Navigating Social-Ecological Systems*. Cambridge University Press, Cambridge.

Friday: Scenario Planning

Reading:

- Shaping Our Future – Scenarios (video)
- Garreau, J. 2001. What to do with your life. Washington Post, December 30, 2001, Page F01.
- Driving Forces handout

Due: Group System diagram

Week 2

Monday: Scenario Planning (continued)

Reading:

- *Flourishing*: Chapters 3 and 4
- Eno, B. 1996. Unthinkable Futures. Pages 404-408 in *A Year with Swollen Appendices: Brian Eno's Diary.* Faber and Faber: London.

Due: On-line response to Week #1 essay prompt
Come prepared to develop plot lines for your named scenarios from last class

Wednesday: A College as a System

Reading:

- Middlebury College Campus Master Plan. Chapter 5: Sustainability.
- Middlebury College Campus Master Plan. Chapter 6: Built Systems.
- Middlebury College Campus Master Plan. Chapter 7: Natural Systems (Part 1).
- Middlebury College Campus Master Plan. Chapter 7: Natural Systems (Part 2).

Friday: Creative Ideation

Reading:

- Kelley, T., and D. Kelley. 2013. Flip: From design thinking to creative confidence. Pp. 13-35 (Chapter 1) in *Creative Confidence: Unleashing the creative potential within us all*. Crown Business Publishers: New York.
- IDEO.org. 2015. Pages 9-25 in *The Field Guide to Human-Center Design*. [*Read for detail on the broad concepts of HCD.*]
- IDEO.org. 2015. Pages 27-74 in *The Field Guide to Human-Center Design*. [*Scan for general overview of the Inspiration phase of HCD.*]

Due: Revised college system map

Week 3

Monday: Project Development: laying the groundwork

Reading:

- *Flourishing*: Chapters 5 and 6
- National Climate Assessment (2014) *[Focus on the Northeast Regional assessment, but also scan the assessment for your own home region]*
- Vermont Climate Assessment (2014) *[Use as a supplement to the Northeast regional assessment in the National Climate Assessment]*

- Walker, B., and D. Salt. 2006. Living in a Complex World: An Introduction to Resilience Thinking. Pages 1-14 (Chapter 1) in *Resilience Thinking: Sustaining Ecosystems and People in a Changing World*. Island Press: Washington, DC.

Due: On-line response to Week #2 essay prompt

Wednesday: Project Development: Scenario planning in the context of the National Climate Assessment (Northeast Region) and the Vermont Climate Assessment. Review all of the potential consequences of climate change in the report, sort them into the categories of certainty, and discuss which of the uncertainties are the most important to plan for.

Friday: Project Development: Writing scenarios. Develop two stories about Future Vermont that the college needs to plan for. These stories need to be based on the Scenario planning methodology (a) using the two uncertainties that you think are most important, and (b) includes the existence of the "very high" certainties.

Week 4

Monday: Project Development: Understanding the college as a system with respect to your scenarios.

Reading:

- *Flourishing*: Chapters 7 and 8

Due: (1) On-line response to Week #3 essay prompt
(2) Clean, written versions of your team's two scenarios

Wednesday: Project Development: Identify vulnerabilities in the system related to your scenarios.

Due: A system map of the college.

Friday: Project Development: Creative ideation regarding how to address the vulnerabilities.

Reading:

- IDEO.org. 2015. Pages 75-132 in *The Field Guide to Human-Center Design*. [*Scan for general overview of the Ideation phase of HCD.*]
- Kelley, T., and D. Kelley. 2013. Spark: From blank page to insight. Pp. 67-107 (Chapter 3) in *Creative Confidence: Unleashing the creative potential within us all*. Crown Business Publishers: New York.

Due: A list of the vulnerabilities identified from your work on Wednesday.

Week 5

Monday and Wednesday: Project Development: Continue to research and develop recommendations to address the vulnerabilities identified last week, with the goal being that by the end of the week you have finalized what your team wants to recommend to address the priority vulnerabilities to climate change.

Due (on Monday): On-line response to Week #4 essay prompt

Reading (*for Wednesday)*

- IDEO.org. 2015. Pages 133-162 in *The Field Guide to Human-Center Design*. [*Scan for general overview of the Implementation phase of HCD.*]

Friday: Developing your report

Reading:

- Handout: How to Develop a Personal and Peer Assessment

Week 6

Monday: Practice for presentations: First run through.

Due: An outline of the written report (one co-authored report for the whole team) that you are developing. At a minimum, your report will need to include (a) a description of the certainties and uncertainties that emerged from the Vermont Climate Assessment, (b) a justification for the top two uncertainties chosen by your team, (c) the top two stories you developed around those uncertainties, (d) your description of the college system and its boundaries as they relate to those stories, (e) the college's vulnerabilities to those uncertainties, and (f) your recommendations (including justifications) for how the college should address those vulnerabilities.

Wednesday: Final presentations to a panel of judges.

Thursday: Closing discussion

Reading:

- Moore, J., and W.E. Rees. 2013. Getting to One-Planet Living. Pp. 39-50 (Chapter 4) in *State of the World 2013*. Island Press, Washington, DC.
- Mr. Y. 2011. A National Strategic Narrative. Woodrow Wilson Center report.

Due: The written report (one co-authored report for the whole team) that (a) describes the certainties and uncertainties that emerged from the Vermont Climate Assessment, (b) a justification for the top two uncertainties chosen by your team, (c) the top two stories you developed around those uncertainties, (d) your description of the college system and its boundaries as they relate to those stories, (e) the college's vulnerabilities to those

uncertainties, and (f) your recommendations (including justifications) for how the college should address those vulnerabilities.

Friday: No class *but* the following are due by the end of breakfast Friday morning:

Due: (1) **Both** a .doc and .pdf version of your team's final report (if you haven't turned it in yet).
(2) A copy of the PowerPoint presentation your team used in your final presentation (if you used a PowerPoint presentation).
(3) Your written assessment of your own engagement in the class, following the guidelines in the handout on Assessments.
(4) Your written assessment of each of the other members of your team, following the guidelines in the handout on Assessments.