FALL 2015 SYLLABUS
ECO 370: BUILDING SUSTAINABLE ENERGY COMMUNITIES THROUGH SERVICE LEARNING
Tues/Thurs 3:30-4:45
Aubert Hall 422

INSTRUCTOR
Dr. Sharon Klein
School of Economics
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207-581-3174
Office Hours: By appointment
305 Winslow Hall
website: http://umaine.edu/soe/faculty-and-staff/klein/

PREREQUISITES
ECO 120 and ECO 121; or ECO 180; or ECO 405; or ECO 410; or equivalent; or permission

REQUIRED TEXTS
There are no required texts for this course.

COURSE DESCRIPTION
This course explores community energy as a possible solution to a complex set of technical, economic, environmental, and social issues associated with energy supply, distribution and use. The course begins with a broad overview of a variety or sustainability issues associated with energy. Students will examine the need to challenge existing paradigms that perpetuate these issues. They will learn the importance of civic engagement, community building, and service learning in creating lasting solutions. Students will acquire hands-on learning about sustainable energy issues, options, policies, and tradeoffs by actively designing and participating in community projects. They will apply tested methods for civic engagement, community building, and service learning to help solve energy issues. They will conduct quantitative and qualitative assessments of potential sustainable energy solutions across technical, economic, environmental, and social criteria, employing assessment tools such as life cycle assessment (LCA), social benefit cost analysis (SBCA), and multi-criteria decision analysis (MCDA). Students will evaluate policy options for encouraging community sustainable energy development. This is a project-oriented course that may require field trips.

COURSE LEARNING OBJECTIVE:
Create and evaluate community-based solutions to the technical, economic, environmental, and social issues associated with current systems of energy supply, distribution, and use.

COURSE LEARNING OUTCOMES
Upon successful completion of this course, students will be able to:
1. Distinguish between concepts of power and energy, and convert between power and energy units across a wide range of energy resources, technologies and uses.
2. Define sustainability and sustainable energy.
3. Define “systems thinking”, and use it to evaluate sustainable energy options.
4. Define the “food-water-energy nexus” and “energy poverty”, and discuss their
implications in the context of systems thinking and sustainable energy.

5. Compare current energy paradigms based in centralized generation and top-down incentives with alternatives based in distributed generation, demand-side efficiency and conservation, and bottom-up approaches.

6. Identify challenges associated with using top-down policies to change the behavior of individuals and firms.

7. Define “community energy”, and examine its role in achieving a sustainable energy future.

8. Compare community energy options across quantitative and qualitative sustainability indicators associated with technical, economic, environmental, and social sustainability.

9. Compare sustainability tradeoffs associated with community energy options using LCA, SBCA, and MCDA.

10. Implement and evaluate strategies for promoting civic responsibility and community building.

11. Evaluate the effectiveness of community building, civic engagement, and service learning methods in creating and implementing sustainable energy solutions.

12. Evaluate existing barriers to grassroots community energy development and potential policy options that could reduce these barriers.

13. Create a new vision for a sustainable energy future and propose strategies for achieving it.

14. Build a community to address sustainable energy challenges.

“FLIPPED CLASSROOM” AND SERVICE LEARNING

Implicit to every learning experience you engage in is a goal to develop professionally and personally. Every college course you take is a professional learning/development experience. You are not just learning a topic, you are learning to learn. Mastering communication and participation skills, collaborative learning skills, and professional academic discourse, are requirements of every profession in every field. More than ever before, the ability to collaborate and learn with others is fundamental to your ongoing professional and academic success.

In keeping with this implicit goal, this course will follow a “flipped” classroom approach and include a service learning project, to increase opportunities for collaborative and active learning, while providing a positive benefit to the community. A flipped classroom is different from the traditional lecture-style approach because instead of sitting and listening to me lecture to you for 75 minutes, you will be actively engaging in problem solving, discussions, debates and other in-class assignments usually in small groups (but sometimes individually) while I listen to you and provide guidance, feedback and mini-lectures on topics that help you be successful in the activities. In class, you will apply what you have learned in your homework assignments under my guidance so if you are struggling with understanding some concepts, I will be there to help you understand. Sometimes, I may teach directly to the whole class for a few minutes if it is clear there is a concept that most people are struggling with, but most of the class time will involve you doing the work while I roam the classroom, providing guidance, answering questions, teaching small groups, and listening.

Service-learning is a “teaching method which combines community service with academic instruction as it focuses on critical, reflective thinking and civic responsibility. Service-learning programs involve students in organized community service that addresses local needs, while
developing their academic skills, sense of civic responsibility, and commitment to the community” (http://umaine.edu/volunteer/service-learning/). Research shows that service learning and other active learning methods improve learning outcomes, problem-solving and critical thinking skills, student confidence, retention of information, group collaboration, and many other important aspects of learning. These approaches are especially appropriate in a course focusing on community energy and sustainability because the main goal is for you to understand the community’s role in achieving a sustainable energy future.

**GRADING**
Graded Activities & Percentages:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework &amp; In-Class Assignments</td>
<td>70%</td>
</tr>
<tr>
<td>Final Project</td>
<td>30%</td>
</tr>
</tbody>
</table>

All students are expected to attend class each day and be prepared with a **calculator** (can use phone, tablet or computer), **paper** and **pen/pencil**.

**Homework & In-Class Assignments (70%)**
Students are expected to be prepared each day for active learning. Often, this will require a homework assignment, consisting of reading and/or watching videos and writing a reflection and/or answering specific questions about the material. These HW assignments will prepare students for in-class activities, which may include consisting of group discussions, reflections, debates, games, problem-solving (often involving math – hence the calculator), individual writing, quizzes, etc. As a service learning course, most HW assignments and in-class activities will be designed to help students progress in their service learning project.

**Final Project (30%)**
The final project will consist of a final paper and presentation about the service learning project at the end of the semester. More instructions will be presented at the start of class.

**Final Semester Grade**
Your final semester grade will be the sum of your weighted total HW & In-Class Assignment and Final Project grades and will be assigned as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (90 or above)</td>
<td>87-99.9</td>
</tr>
<tr>
<td>B+ (87-89.9)</td>
<td>82-86.9</td>
</tr>
<tr>
<td>B (80-81.9)</td>
<td></td>
</tr>
<tr>
<td>C+ (77-79.9)</td>
<td>72-76.9</td>
</tr>
<tr>
<td>C (70-71.9)</td>
<td>65-69.9</td>
</tr>
<tr>
<td>C- (60-64.9)</td>
<td>59.9 or less</td>
</tr>
</tbody>
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**Late/Missed Assignments**
At the end of the semester, I will drop the 3 lowest homeworks or in-class assignments to account for any life event that may have made it difficult for students to submit assignments on time or attend class. Due to that policy, there will be NO opportunities to make up missed work, and late assignments will NOT be accepted. The only exception to this rule is if the University has granted you a leave from course duties for some reason - in this case, the proper documentation would be required to make up missed or late assignments within the appropriate timeframe specified on the University documentation.
Extra help
I am available for extra help as needed and always willing to help students achieve success. Please send email requests for meetings at least 48 hours ahead of time – depending on my travel and research schedule, I may need more time than this.

Communication Policy
Check Blackboard (BB) regularly for announcements, assignments and other communication from me. To access BB, go to: www.courses.maine.edu. Enter your Mainestreet username and password. Select this course from the list on the welcome page.

Disabilities Policy
Students with disabilities who may need services or accommodations to fully participate in this class should contact Ann Smith, Director Disability Services in 121 East Annex, (voice) 581-2319, (TTY) 581-2325 as early as possible in the semester.

Academic Integrity Policy
Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.