**Envisioning a Sustainable World**

CE 203, Spring 2016

 *Instructor:* Prof. Mary Roth

 *Office:* 324 Acopian Engineering Center (AEC)

 *Phone:* 610-330-5030

 *E-mail:* rothm@lafayette.edu

 *Office Hours:* 10 a.m. to noon, TR (and by appointment)

 *Class times:* Section 02: 1:15 to 2:30 TR

 Section 03: 2:45 to 4:00 TR

 *Class Location:* Hugel 117

**Course Description**

Sustainability is a paramount concern in the 21st century as we grapple from the individual to the global scale with challenges related to access to clean water, increasing demand for energy, environmental degradation, climate change, and the knowledge that our planet has limited resources. In this course we take a multi-disciplinary approach to explore the concept of sustainability and its application to three areas of infrastructure that sustain society: energy, waste disposal, and cities.

*From the College catalog:* Students explore various types of activities, systems, and/or processes encountered in our everyday lives, as well as metrics to evaluate their sustainability. Discussion, projects, and research will focus on the use of energy, consumption or resources, and implementation and/or development of technology and their social, political, environmental, and economic implications.

(Course fulfills STSC and V requirements for the College’s Common Course of Study.)

**Student Learning Outcomes**

After successfully completing this course you will be able to do the following:

*STSC outcomes:*

* Demonstrate the ability to understand the fundamentals of the scientific method.
* Demonstrate the ability to create, interpret, and critically evaluate description and representations of scientific data including graphs, tables, and/or models.
* Apply scientific knowledge to understand scientific issues underlying global, national, or local decisions.
* Evaluate a published work related to physical or natural phenomena.

*V outcome:*

* Construct and evaluate answers to questions of moral and political concern (questions of morally correct conduct, justice, and social policy, e.g.) via rational deliberation and based on solid evidence.

*CE 203 course-specific outcomes:*

* Define sustainability and explain its historical origin
* Apply life-cycle principles and other sustainability frameworks to environmental assessment, economics, and/or social justice issues
* Describe the sustainable (and/or unsustainable) components of several large-scale examples (water systems, energy systems, food systems, etc.)
* Apply fundamental scientific principles to explore the interaction between built systems and the natural environment.

**Required Readings**

* Lunsford, Andrea (20xx). *St. Martin’s Handbook*. New York: Bedford/St. Martin’s.
* Robertson, Margaret (2014). *Sustainability: Principles and Practice*. New York: Routledge.
* PDFs and other materials placed on course Moodle site

**Outside Events**

Outside events (e.g., evening or lunch-time speakers, movies, hands-on opportunities) related to sustainability may occur outside of our scheduled class time. Attendance at such events may be required (unless you have an unavoidable conflict) or may be rewarded with extra credit. **NOTE: Earth Day is Friday, April 22nd. It is likely that you will be required to attend events on that day.**

**Student Responsibilities**

* ***Attend Class and Required Outside Events.*** If you miss more than two classes/required events, your final grade will be reduced by 1/3 of a letter grade for every class/required event missed.
* ***Do the Readings.*** Reading assignments must be completed prior to the class during which they will be discussed, and you must bring the reading assignment with you to class either in hard copy or on a laptop or tablet. Unannounced quizzes may be given to ensure that students have completed the assigned reading.
* ***Do the Work.*** Complete all work in a timely manner. Deadlines are firm. You may have one extension, but you must request it at least 24 hours in advance of the time due. If you do not receive an extension, late assignments will be penalized 10% of the grade for every day they are late.
* ***Check E-Mail and Moodle Daily.*** Information about the class including assignment updates and schedule changes will be posted to Moodle and/or sent by e-mail. Not reading your e-mail or checking Moodle will not be accepted as a reason for me to accept a late assignment or your absence in a class activity.

**Homework/Writing Assignments**

Assignments will include a mix of writing and problem solving. In the case of calculations (no higher-order math involved) or problem-solving, you may turn in neat hand-written work. Otherwise, all assignments must be turned in through Moodle as electronic files in .doc or .pdf format.

**Mid-term Exam**

This in-class exam will emphasize conceptual understanding of the introductory material covered in the first few weeks of the course. The exam format will be short answer questions.

**Portfolio Project**

For each of the three areas of the infrastructure/built systems that we will be studying, you will write an 800 to 1000-word essay. For each essay, you will identify a topic of personal interest to you that is mentioned in the Robertson text but that is not well documented in that text. You will develop a hypothesis regarding your topic and conduct research to determine the validity of your hypothesis. Your essay will present your hypothesis, the results of your research, and resulting recommendations. A grading rubric will be provided for these essay assignments.

Your essays will be combined into a portfolio that you will submit at the end of the semester. The portfolio will include the following for each essay and you are responsible for keeping copies of these materials so that they can be included in the portfolio:

* Annotated bibliography of six quality references you reviewed in the process of researching the topic
* Initial draft of essay
* Feedback from in-class peer review of draft essay
* Revised essay
* Memo addressed to me discussing how your essay was revised in response to the feedback

In addition to the items listed above, your portfolio will include a cover memo addressed to me that identifies which of the three essays represents your best work and, by comparing this selected essay to the other essays in the portfolio, describes why it is your best work. Your portfolio grade will be based primarily on the essay that you identify as your best work. Note, prior to submission of the portfolio, the essay you select may be revised further than the revised essay initially submitted for the class. A grading rubric will be provided for the portfolio assignment.

**Presentations**

For each of the three areas of the infrastructure/built system that we will be studying, you will prepare a short presentation on the topic you have selected for your section of the course. Your presentation will be approximately five minutes in length and as part of your presentation, you will be required to use either a small set of PowerPoint slides (or similar software package) or a hand drawn poster. A grading rubric will be provided for the short presentations.

During the last week of class, you will give an approximately 10-minute presentation to the class on expanded research conducted for one of the topics of your earlier essays. You will be required to use PowerPoint or a similar software package for your presentation. A grading rubric will be provided for the final presentations.

**Grading**

Your grade for this course will be based on the following:

Participation (rubric is included at the end of this syllabus): 25%

Homework and short writing assignments: 15%

Mid-term exam: 20%

Mini-presentations (rubric will be provided): 5%

Portfolio Project (rubric will be provided): 30%

Final presentation (rubric will be provided): 5%

There will be no final exam for this course.

**Technology**

Technology in the classroom should enhance the learning environment for all students.  Use of technology for purposes defined by the College as academic dishonesty is prohibited.  In the event that students receive permission in advance to digitally record a class (audio or video), the material should not be posted to the internet for public access, unless a prior agreement has been made with me.

The use of technology in my classes should reflect two key values:

* ***That we are here for a common purpose – education.*** Use of technology in the classroom by the faculty member and the students should always support student learning. If you are using your phone, tablet, or computer in class, be prepared to show me how you are using the technology to support your learning.
* ***That the classroom should be a place of mutual respect.*** I, as the teacher, need to respect how students understand and use technology to best support their own learning (though I might engage students in a discussion about the research that shows handwriting is better than typing for taking notes). I also need to be sympathetic to valid reasons students may have that require them to communicate with others during class time. Students need to respect my efforts to create a classroom environment and to organize the course in ways that support the learning of all students. Students also need to respect their fellow classmates and their classmates’ rights not to be distracted from participating fully in the classroom.

**Privacy and Moodle**

Moodle contains some student information that is protected by the Family Educational Right To Privacy Act (FERPA) and makes that information visible to other students in the class. Disclosure of this information to unauthorized parties violates federal privacy laws. Please remember that this information is protected by federal laws and must not be shared with anyone outside the class. Questions can be referred to the Registrar’s Office.

**Academic Accommodations**

In compliance with Lafayette College policy and equal access laws, I am available to discuss appropriate academic accommodations that you may require as a student with a disability. Requests for academic accommodations need to be made during the first two weeks of the semester, except for unusual circumstances, so arrangements can be made. Students must register with the Office of the Dean of Advising and Co-Curricular Programs for disability verification and for determination of reasonable academic accommodations.

**Academic Honesty**

Instances of plagiarism or academic dishonesty will be referred to the Office of the Dean of Advising and Co-Curricular Programs for appropriate action. By remaining in this class, you affirm two things: first, that you have carefully read and reviewed the “Code of Conduct” and “Academic Honesty” sections of the Lafayette Student Handbook (see studentlife.lafayette.edu/resources) and, second, that you agree to abide by the Code of Conduct and to rigorously practice academic honesty.

**Federal Credit Hour Compliance**

The student work in this course is in full compliance with the federal definition of a four credit hour course. Please see the Registrar’s Office web site (http://registrar.lafayette.edu/files/2013/04/Federal-Credit-Hour-Policy-Web-Statement.doc) for the full policy and practice statement.

**Class Participation Rubric**

(Source: John Immerwahr, 8/15/2008,

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| --- | --- | --- | --- |
|  | **Strong Work** | **Needs Development** | **Unsatisfactory** |
| **Listening** | Actively and respectfully listens to peers and instructor | Sometimes displays lack of interest in comments of others | Projects lack of interest or disrespect for others |
| **Preparation** | Arrives fully prepared with all assignments completed, and notes on reading, observations, questions | Sometimes arrives unprepared or with only superficial preparation | Exhibits little evidence of having read or thought about assigned material |
| **Quality of Contributions** | Comments are relevant and reflect understanding of: assigned text(s) or assignments; previous remarks of other students; and insights about assigned materials | Comments sometimes irrelevant, betray lack of preparation, or indicate lack of attention to previous remarks of other students | Comments reflect little understanding of either the assignment or previous remarks in seminar |
| **Impact on Class** | Comments frequently help move class conversation forward | Comments sometimes advance the conversation, but sometimes do little to move it forward | Comments do not advance the conversation or are actively harmful to it |
| **Frequency of Participation** | Actively participates at appropriate times | Sometimes participates but at other times is “tuned out” | Seldom participates and is generally not engaged |

Class participation deserving of an A grade will be strong in most categories; participation that is strong in some categories but needs development in others will receive a B; a grade of C reflects a need for development in most categories; D work is typically unsatisfactory in several categories; and F work is unsatisfactory in nearly all categories.