CE 4515/5515 Sustainable Design and Construction
Spring 2014

Course Syllabus
University of Minnesota - Duluth
Swenson College of Science and Engineering
Civil Engineering Department

Instructor Information
Instructor: Dr. Mary Christiansen
Office Location: 109 SCiv
Mailbox: 221 SCiv
Telephone: 218.726.7810
E-mail: muchrist@d.umn.edu
Office Hours: Monday and Wednesday 9:00 – 10:00 am and Tuesday 2:00 – 4:00 pm or by appointment, preferably not during the hour before class

Course Identification
Course Number: CE 4515/5515
Course Name: Sustainable Design and Construction
Lecture Location: 231 SCiv
Lecture Times: Monday, Wednesday, Friday: 8:00 – 8:50 am
Prerequisites: CE 2017, Math 3280 (concurrent), BSCE candidate or equivalent

Course Description
Introduction to sustainable design and construction including LEED, materials construction/transportation/production, life-cycle service, rating systems, codes, regulations, economical issues and social issues.

Course Resources
Provided Course Texts
The Sustainable Concrete Guide: Strategies and Examples by A. Schokker
The Sustainable Concrete Guide: Applications by A. Schokker

Course Website
Moodle - https://moodle2.umn.edu/
Course Guidelines

Class Participation
It is important for you to attend class in order to fully understand the material. You are responsible for all material covered in class whether you attend or not, so please get the notes from another student in the class if you must be absent. PowerPoint lectures will be posted to Moodle prior to each class and it is suggested you print them or bring an electronic copy to class. If you choose to use an electronic device, wandering on the Internet will not be tolerated and you will be asked to shut down your device.

Assignments
The course will include assignments to be completed outside of class. The due dates will be given when the assignments are assigned. Late assignments will receive a 25% penalty for each day late and make your professor very grumpy.

All assignments must be neat and orderly and presented in a professional manner; points will be deducted for work that is illegible, unclear or incomplete.

Calculation-based assignments must be typed or submitted on engineering paper with a maximum of one problem per page and a straight edge used for diagrams. Each problem should be presented such that it is not necessary to refer to the book or assignment to understand the problem (i.e. state all givens and goals for each problem). All work must be shown for full credit and answers should be boxed and clearly labeled.

Written assignments should be typed and printed out; electronic submissions will not be accepted unless stated otherwise for a specific assignment. Grading will be based on the effort and thought put into the content and commentary, the professionalism of the prose as well as grammar and formatting. This is an upper level course and students will be expected to submit clear, concisely written documents free of grammatical errors and spelling mistakes. Plagiarism will not be tolerated; don’t even think about it. Professionalism is also expected during group work and class presentations.

Exams
Exam 1: Friday, March 7
Exam 2: Friday, May 2

Final Project
There will be a final project and presentation in lieu of a final exam. The details of this project will be presented by Week 4. You will be responsible for deliverables on this project and it will involve both individual work and teamwork. All project submittals and final reports must be submitted on time to receive credit; no credit is given for late submittals or projects.

Students enrolled in CE 5515 will be assigned several slightly altered assignments and a more complex final project to account for the graduate credit earned.
Course Performance Criteria

At the end of the course, students should be able to:

- Provide a definition of sustainability based on three key aspects of economy, society, and the environment
- Understand the LEED rating system and have the basis for taking the LEED Green Associate exam
- Understand their role in sustainability from various perspectives (engineer, community member, etc.)
- Understand various tradeoffs to maximize sustainable potential in a building, system or situation

Grading Scheme

Grading Breakdown – The final grade will be determined based on the following breakdown:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>25%</td>
</tr>
<tr>
<td>Final Project</td>
<td>25%</td>
</tr>
</tbody>
</table>

Grades will be posted throughout the semester on Moodle. Please check your scores as they are posted and email Dr. Christiansen if you think any grades are in error.

Grading System – A standard grading scale will be used to determine your final grade:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>94-100</td>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>A-</td>
<td>90-93</td>
<td>C</td>
<td>70-76</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
<td>F</td>
<td>&lt; 60</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Course Policies

Students with Disabilities:
It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements – such as time limited exams, inaccessible web content, or the use of non-captioned videos – please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Please call 218-726-6130 or visit the DR website at [http://www.d.umn.edu/access](http://www.d.umn.edu/access) for more information.
University Policies

This course will follow UMD policies:

- **Student Conduct Code**: Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Student are expected adhere to Board of Regents Policy: Student Conduct Code:
  [http://www1.umn.edu/regents/policiesacademic/Student_Conduct_Cod.pdf](http://www1.umn.edu/regents/policiesacademic/Student_Conduct_Cod.pdf)

- **Teaching & Learning: Instructor and Student Responsibilities**: UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. To reference the full policy please see: [http://www.d.umn.edu/vcaa/TeachingLearning.html](http://www.d.umn.edu/vcaa/TeachingLearning.html)

- **Academic Integrity**: Academic dishonesty tarnishes UMD’s reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. UMD’s Student Academic Integrity Policy can be found at: [http://www.d.umn.edu/conductacademic.html](http://www.d.umn.edu/conductacademic.html)

- **Final Exams**: All 1xxx-5xxx courses offered for undergraduate credit should include a final graded component or end of term evaluation that assesses the level of student achievement of one or more course objectives. All final graded components are to be administered or due at the time and place according to the final exam schedule and not during the last week of class. To reference the full policy please see: [http://www.d.umn.edu/vcaa/FinalExams.html](http://www.d.umn.edu/vcaa/FinalExams.html)

- **Excused Absences**: Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. These are subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For complete information, please see: [http://www.d.umn.edu/vcaa/ExcusedAbsence.html](http://www.d.umn.edu/vcaa/ExcusedAbsence.html)

- **Appropriate Student Use of Class Notes and Course Materials**: Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. For additional information, please see: [http://www.d.umn.edu/vcaa/ClassNotesAppropriateUseof.html](http://www.d.umn.edu/vcaa/ClassNotesAppropriateUseof.html)