SYLLABUS: ENR 3900
SUSTAINABILITY METRICS
SPRING 2018

Course overview

Instructor
Instructor: Dr. Elizabeth Myers Toman
Email address: toman.11@osu.edu
Phone number: 614-688-1057
Office: 414E Kottman Hall
Office hours: By appointment

Course description
This is a completely online course that will utilize multiple platforms supported by The Ohio State University. Course content, including lecture presentations and videos, will be delivered using Carmen, OSU’s learning management system. Carmen (https://carmen.osu.edu/) will also be used to complete quizzes, participation activities and other assignments. Other resources, such as the University Libraries, may also be used. All assignments and quizzes must be completed by the due date shown in Carmen.

This class will address the use of data and indicators to measure sustainability and track progress. Students will use software tools to quantify sustainability measures.

Computer assignments will require the use of Microsoft Excel and Eco-LCA. Microsoft Excel 2016 is preferred and is available for student download at no cost as part of Microsoft Office 365 ProPlus through Microsoft’s Student Advantage program. Other versions of Microsoft Excel are acceptable but please note that the laboratory instructions were written for Microsoft Excel 2016 and some functions may vary with other versions. Eco-LCA is a web-based program that is available online at no-cost.

Prerequisites
ENR 2000, AEDE 2005 or other GE Data Analysis course. This class is designed for sophomore level undergraduate students in the EEDS program. As such, a basic knowledge of the human dimensions of sustainability is required. The course is available to all students who wish to gain further understanding of the methods and tools used to measure sustainability.
Course learning outcomes

By the end of this course, students should successfully be able to:

- Recognize the environmental and social impacts of a product or service over its life cycle
- Identify and evaluate risks associated with an action or operation
- Identify appropriate indicators to measure the sustainability of public and private organizations
- Locate secondary data sources and analyze data using spreadsheet functions

Course materials

Required

Life Cycle Assessment: Quantitative Approaches for Decisions that Matter. Matthews, Hendrickson, Matthews. 2017. (This is an electronic textbook, available at no-cost. Instructions on where to download will be provided on Carmen.)

Additional readings are provided on Carmen, see detail in the schedule below.

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- Self-Service and Chat support: http://ocio.osu.edu/selfservice
- Phone: 614-688-HELP (4357)
- Email: 8help@osu.edu
- TDD: 614-688-8743

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen

Necessary equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection

Necessary software

- Microsoft Excel 2016 (This is the preferred version, other versions of Microsoft Excel are acceptable with the note that laboratory instructions were written for version 2016). A free version of this software is available: https://ocio.osu.edu/blog/community/2015/08/18/free-microsoft-office-for-ohio-state-students
Grading and faculty response

Assessment
Your learning will be assessed with quizzes, weekly computer assignments, participation in weekly activities (this includes posting and responding to discussion boards), a mid-term project, and a final project and presentation.

Each week you will take an online quiz to assess your knowledge of the content of the required readings, lecture material, and activities. These are open-note, book, and computer, but NOT open friend or classmate. Each quiz will be made available on Carmen at the beginning of the week it is assigned and will close the following Sunday night at 11:59 pm. Once you begin a quiz, you will have 60 minutes to complete it. You may take each quiz twice within the week period and your highest score will be recorded. The lowest quiz score will be dropped for the final grade calculation. Correct answers for each quiz will be released when the quiz closes.

Computer homework will be assigned at the beginning of each week and will be due one week after assignment.

Weekly lectures will include group and individual activities that may require a discussion post and responding to other class members’ posts. While these activities will not be graded, participation is required for the class participation points.

The mid-term project will incorporate lecture and computer assignment materials and will take the form of a 4-to 6-page report. This will be evaluated on professional appearance as well as content.

You will synthesize your knowledge of the course with a final project relating to the sustainability of The Ohio State University. You will submit a project paper (8 pages max). In addition, on the final week of class you will post a video of yourself presenting one visual graphic that succinctly describes your project. You will also respond to your group members’ presentations.

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<thead>
<tr>
<th>Assessments, See course schedule on Carmen, for due dates</th>
<th>Percent of Final Grade</th>
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<tbody>
<tr>
<td>Quizzes (12, drop lowest)</td>
<td>33</td>
</tr>
<tr>
<td>Computer Assignments (8)</td>
<td>32</td>
</tr>
<tr>
<td>Participation in Weekly Activities</td>
<td>20</td>
</tr>
<tr>
<td>Mid-term Project</td>
<td>7</td>
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</table>
Late assignments
The penalty for late assignments (computer assignments and participation activities) is 10% of the assignment total per day (each 24-hour period). Quizzes must be completed within the open period; they cannot be taken late.

Grading scale
93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E

Faculty feedback and response time
I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call 614-688-HELP at any time if you have a technical problem.)

Grading and feedback
For weekly assignments, you can generally expect feedback in 7 days.

E-mail
I will reply to e-mails within 24 hours on school days.
Attendance, participation, and discussions

Student participation requirements
Because this is a distance-education course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Logging in: AT LEAST ONCE PER WEEK**
  Be sure you are logging in to the course in Carmen each week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me as soon as possible.

- **Participating in discussion forums: APPROXIMATELY 2 TIMES PER WEEK**
  As participation, each week you can expect to post once or twice AND respond to your group members’ posts for each lecture as part of our substantive class discussion on the week's topics.

Discussion and communication guidelines
The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics.

- **Tone and civility**: Let’s maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn’t always come across online.

- **Backing up your work**: Consider composing your academic posts in a word processor (like Microsoft Word), where you can save your work, and then copying into the Carmen discussion.
Other course policies

Academic integrity policy

Policies for this online course

- **Quizzes:** You must complete the quizzes yourself, without any external help or communication from classmates or other individuals. These are open note and book, but not open neighbor.

- **Written assignments:** Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow APA style to cite the ideas and words of your research sources.

- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

- **Collaboration and informal peer-review:** The course includes opportunities for collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz is not permitted. If you're unsure about a particular situation, please feel free to ask ahead of time.

Ohio State’s academic integrity policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University’s Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University’s Code of Student Conduct and this syllabus may constitute “Academic Misconduct.”

The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University’s Code of Student Conduct is never considered an “excuse” for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University’s Code of Student Conduct (i.e.,
committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages (COAM Home)
- Ten Suggestions for Preserving Academic Integrity (Ten Suggestions)
- Eight Cardinal Rules of Academic Integrity (www.northwestern.edu/uacc/8cards.htm)

**Accessibility accommodations for students with disabilities**

**Requesting accommodations**

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, contact your instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, please contact the Student Life Disability Services at 614-292-3307 or ods@osu.edu to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University.

Go to [http://ods.osu.edu](http://ods.osu.edu) for more information.

**Accessibility of course technology**

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with me.

- Carmen (Canvas) accessibility: [https://community.canvaslms.com/docs/DOC-2061](https://community.canvaslms.com/docs/DOC-2061)
- Streaming audio and video
## Course schedule (tentative)

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Assignments</th>
<th>Readings</th>
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<tbody>
<tr>
<td>1</td>
<td>1/8 – 1/12</td>
<td>Measuring Sustainability</td>
<td>Practice Quiz</td>
<td>Nat. Research Council, 2011 “Sustainability and the US EPA,” Chapter 2</td>
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**Assignments:**
- **Practice Quiz:**
- **QUIZ 1:**
- **QUIZ 2:**
- **QUIZ 3:**
- **QUIZ 4:**

**Readings:**
- Nat. Research Council, 2011 “Sustainability and the US EPA,”
- Excel functions and formulas.
- Excel pivot tables.

**Lab:**
- Introduction to computing with Microsoft Excel.
- Using Excel as a database.
- Problem solving in Excel.
- Reporting and Problem Solving in Excel.
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<tr>
<td>Lab:</td>
<td>Eco-LCA Software</td>
<td>Computer Assignment 5. Drinking cup analysis.</td>
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<td><strong>Module 2: Risk Assessment</strong></td>
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<td>NO LAB – Continue working on your mid-term project.</td>
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<tr>
<td>3/12 – 3/16</td>
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<td></td>
<td>NO LECTURE, QUIZ &amp; LAB – SPRING BREAK</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Quiz/Assignment</td>
<td>Reference</td>
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Lab: Risk Analysis in Excel | QUIZ 9  
Computer Assignment 8.  
| 4/2-4/6   | Developing indicators.  
Sustainability in Communities.  
Bellagio principles.  
Case study: Seattle  
Lab: Introduction to final project | QUIZ 10  
| 4/9-4/13  | Measuring the sustainability of universities and nations  
Lab: Independent work on final project. | QUIZ 11  
Yanarella et al., 2009. “Green vs. Sustainability, From Semantics to Enlightenment” Sustainability.  
Moldan et al. 2004 “Composite Indicators of Environmental Sustainability”  
| 4/16-4/20 | Case Study: Waste = Food  
Natural Hazards: a special type of Risk Analysis  
Lab: Independent | QUIZ 12  
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<tr>
<td>work on final project.</td>
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<tr>
<td>15</td>
<td>4/23</td>
<td>Final Presentations</td>
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