

EES 883-4 Applied Life Cycle Assessment Winter 2013

Time: 3 - 5 pm Wednesday
Location: Rich Lab 154
Instructor: Annick Ancil, Ph.D.
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Office hours: At my office before class on Wednesday 2-3 pm or by appointment

Course Description

Life-cycle assessment (LCA) is a well-established methodology used to evaluate the environmental impact of a product throughout all the stages of its life, from cradle-to grave. In addition to the most common process LCA methodology, other methods such as input-output, economic and social LCA will be introduced. This class is a project-based course and the student is expected to have a subject, preferably related to his research before the beginning of the class. At the completion of the course the student should have a thorough understanding of LCA methodology and demonstrated proficiency in its application.

Resources

There is no text for this course. Readings and handouts will be posted periodically on Blackboard.

Assessment Criteria

1. Readings and in-class participation (5) 25 %
 - Perform readings and write short summary/critical review before class
 - In class participation during class discussion
2. Assignments (5) 25 %
3. Project 50 %
 - Develop the framework necessary to conduct a full-scale LCA related to the current area of research
 - Complete the data collection and quantitative analysis for the LCA to be included in a manuscript style paper

Homework will be assigned regularly throughout the semester. For the readings, a critical review will be required and in-class participation will be evaluated. Late homework will receive an automatic 10% deduction for every day overdue.

Policy

- Attendance at regular scheduled class meetings is expected as well as participation in class discussions.
- In the event of an unplanned absence by the professor, class will be cancelled after 15 minutes
- Academic honesty is expected. Any violation of Clemson University policy as described in the Student Handbook will not be tolerated and may result in a failing grade.

Tentative Course Outline (Subject to Change)

Week	Date	Topic
1	Jan 9	No class
2	Jan 16	Introduction to LCA
3	Jan 23	Goal definition and system boundaries
4	Jan 30	Unit processes, elementary and intermediate flows
5	Feb 6	Life cycle inventory (Data collection and data quality)
6	Feb 13	<i>Project proposal presentation</i>
7	Feb 20	Co-products and allocation
8	Feb 27	Introduction to Gabi and other available software
9	Mar 6	Design - Process based LCA
10	Mar 13	Process based LCA application
11	Mar 20	No class
12	Mar 27	Economic input output LCA (EIO/LCA)
13	Apr 03	Social LCA
14	Apr 10	Impact assessment
15	Apr 17	In class discussion - feedback on project
16	Apr 24	In class presentations
17	May 1	Final project due