

**Organizational & Community Assessments:
The Theory & Practice of Greenhouse Gas Inventories**

2 credit – Summer 2018: July 13 – 15

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Seminar II E 2135

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This course will focus on the theory and the methodologies for completing an organizational or community-scale greenhouse gas inventory.

Students will be introduced to:

- A historical perspective of greenhouse gas research
- What is measured, and why
- Inventory methodologies and calculations
- Applied exercises in developing an inventory

Class work will include:

- Small group project work
- Oral reports

Upon successful completion of the class, students will be able to:

- Explicate the theoretical basis of greenhouse gas inventories and the primary methodologies
- Set up equations and define key parameters for emissions calculations
- Calculate an emissions inventory
- Explain GHG emissions and provide meaningful context for planning and/or decision-making processes

Class Structure

Class meets Friday from 5 to 9 pm, Saturday and Sunday from 9 am to 5 pm. Class sessions will include individual and group exercises, lectures, and seminars.

Classroom expectations

Students

- Attend every class; be on time.
- Participate in collaborative class work.
- Comply with The Evergreen State College's [Social Contract](#) and [Student Conduct Code](#).
- Full credit and a positive evaluation depend on timely completion and submission of assignments and regular attendance and participation in class. Partial credit is not an option. Credit denial decisions will be made by the faculty.

- Students are required to use their Evergreen e-mail account for communication about class work and to participate in collaborative on-line work.
- Computer and Internet access will be required to finish all assigned work and will be highly beneficial both during and outside of class.
- Active use of internet-based resources will be encouraged during class. However, if active use of computer or other electronic devices interferes with student engagement during lectures and classroom presentations, we will review individual student learning goals and discuss their best paths to success.
- Students are expected to complete and submit a self-evaluation to faculty by the Monday of evaluation week. Evaluation conferences will be scheduled during the final class. Student evaluations of faculty may be submitted through the online system.
- Any deviation from these expectations should receive *prior* approval from your instructor.

Faculty

- Faculty is expected to be prepared for class, responsive to student questions, and to provide timely feedback on student work synchronous with the progress of the class.
- Presentations, sharable resources, and group work will be posted on a shared-access electronic platform (Canvas) for reference.

Class room interactions

- Make observations (describe what is), not judgments (good or bad valuations).
- Pay attention to context when evaluating class work.
- All information should be verifiable and supported by research.
- Be polite and respectful: classroom feedback is expected to focus on our shared learning experience without judging what has not yet been learned.
- Learning is a process of discovery then integration and synthesis of new information with what we already know. If you find yourself spending substantial time on what you already know, you may be missing out on the discovery process, and subsequently limiting your learning.

Performance expectations

Many class processes are designed to be collaborative. Students are expected to participate and evaluate each other in the context of a shared learning experience. Assignments will include collaborative projects and oral presentations.

Effective oral presentations are far more than simply a verbal recitation of information. Students are encouraged to raise the bar on their individual and group presentations by giving consideration to the structure, format, and style of their presentations, along with the content. Faculty will happily recommend presentation references and guides if asked.

Student learning will be judged based on class participation, quizzes, and oral presentations in terms of the student's demonstrated progress in understanding and application of fundamental concepts. Evaluation criteria include:

- REPEATABLE – can the student repeat concepts and information?
- DISCURSIVE – can the student discuss concepts within context?
- DEMONSTRABLE – is the student able to use concepts in new contexts?
- PROGRESS – has the student demonstrated consistent and substantial progress in the above criteria throughout the quarter?

Content Schedule

Day	Content
Friday; 5 – 9 pm	Introductions, Overview, & Basic concepts
Saturday; 9 am – 5 pm	Calculations and Data Collection
Sunday; 9 am – 5 pm	Applied Exercises

Study resources

(Given the short time-frame of the class, students will not be assigned advance reading. The entire class will work together to review and understand reports and protocols from the organizations listed below.)

- Intergovernmental Panel on Climate Change - <http://www.ipcc.ch/>
- Greenhouse Gas Protocol - <http://www.ghgprotocol.org/>
- The Climate Registry - <https://www.theclimateregistry.org/>
- The EPA AP 42 - <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors#5thed>

Assignments and deliverables

In-class assignments will include individual, short oral presentations.

Students will also work in small groups to develop mini-inventories for discrete emissions sources from basic concepts, following established protocols, compare their calculations against established calculators and discuss their results with the entire class.