

CVEN 689
“SUSTAINABLE SYSTEMS IN CIVIL ENGINEERING”

Guidelines for Term Project

The goal of the class project is for students to demonstrate the possibility for improved engineering practice vis-à-vis current issues utilizing sustainability methods. The project should be quantitative and should address a problem that is current and important. Students are free to choose their own topic, but all topics must be approved by the course instructor. You should work in groups of 2 students. You are particularly encouraged to pursue a project that is complementary to your ongoing research work for your M.E., M.S., and/or Ph.D. projects.

Project deliverables are: (1) a written report fully describing project formulation, methods, calculations, findings, and future extensions, and (2) an oral presentation of the same items as the written report.

Potential project topics could include: a water audit of the TAMU campus, a low impact development (LID) design for construction of a new campus building, a re-evaluation of the design and construction of an existing building or development, among many others.

The project is expected to incorporate principles of sustainable development and sustainability as discussed this term. Moreover, there should be explicit quantification of various principles (e.g., entropy, natural capital, etc.) and comparisons among alternatives. The discussions on metrics will be particularly helpful in that regard.

The written paper has no maximum or minimum length requirement for the paper. It should convey clearly how you approached your chosen problem and the rationale for your eventual decisions to solve the problem. Graphics will be very helpful as well as clearly presented calculations.

The oral presentations should be no longer than 12 minutes. Good visual aids will be expected. Practice your presentation beforehand to ensure timeliness.

Each paper and presentation will be evaluated against the criteria listed below and should be complete with respect to these items.

- Does the project address a problem that is both current and important in the students' field of practice? (10 points)
- Is the relationship of the problem to the idea of sustainability adequately explained? (5 points)
- Does the project approach the solution to the problem using good “pre-sustainability” fundamentals of the students' field of practice? (20 points)

- Does the project methodology successfully incorporate concepts of sustainable development and sustainability along with the fundamentals mentioned above? (30 points)
- Does the project demonstrate the improvement of professional practice by including sustainable development principles? (15 points)
- Is the paper clearly written and understandable with appropriate citations and bibliography? (5 points)
- Is the paper appropriately formatted and without distracting spelling and grammatical errors? (5 points)
- Is the oral presentation clear and understandable with good visual aids and within the time limit? (10 points)