

Sustainable Design course offered in Spring 2009

EDSGN 497A, Sustainable Design, will be offered in Spring 2009, MWF 11:10 a.m. – 12:05 p.m.

This course has been run as an experimental offering for three previous semesters and should receive permanent status this year. The course is for all Penn State students with some basic science background.

Sustainable design is an interdisciplinary field wherein various disciplines work together to design new products, processes and systems to meet the challenges of creating a sustainable society. The goal is to design technologies that are good for the environment, economical, and beneficial to society.

This course begins with a background on sustainability and review of the various perspectives, leading to a set of common principles founded on ecological concepts. Next society scale sustainability metrics are investigated, including the master equation ($I=PAT$) and ecological footprint, along with their projections into the future. This analysis helps to show the state of the world as well as the potential for technology to alleviate human environmental impact. Solar energy potential is investigated and students are introduced to some currently viable technologies along with future trends. Following this unit, the characteristics of green buildings and the LEED rating system are studied. This leads into the most commonly used sustainability metric for products of life-cycle assessment (LCA) and related ISO standards. The course culminates in applying this new and prior knowledge to hands-on projects.

Emphasis is on student-centered learning via team-based analysis, research, experimentation, and presentation. Various techniques are used to communicate the lessons including videos, textbooks, articles, interactive slides, guest speakers, field trips, experiments, case studies, and discussion. Assessment of student performance is based on several short quizzes, the major project, team presentations, and individual homework assignments.

The course is intended for upper division students as an opportunity to integrate and apply their previous coursework in interdisciplinary teams.

For more information, contact **Andy Lau**, 863-9075, asl1@psu.edu.

University Bulletin Description:

http://bulletins.psu.edu/bulletins/bluebook/university_course_descriptions.cfm?letter=E&courseon_g=EDSGN%7c497a%7c200809SP.