

Green Chemistry Grant Recipient Project Summary

Michigan State University
UGS 101 Green Chemistry: A Freshman Seminar

In September 2008, the Department of Environmental Quality awarded Michigan State University a grant for their implementation of a freshman tutorial introducing incoming students to Green Chemistry. The university has offered the course since 2008 and has had at least 20 students in attendance each semester. The course continues to move forward as interest continues to gain demand.

Undergraduate Studies 101: Green Chemistry, a course designed by Michigan State University professor James E. Jackson was designed to expose beginning MSU students to the challenges and potential solutions of “real world” environmental, health, and energy problems. The addition of the new course aims to highlight issues relevant to the State of Michigan, from agriculture, natural resources, and environmental policy to municipal services, health care, transportation, energy, and manufacturing facilities. Emphasis for this course has been placed on the connection between global warming, energy and fuel choices, ozone layer depletion, pollution, food quality, medical care, and how these issues are all related back to the chemical understanding, especially the knowledge of environmental and toxicology aspects.

Designed as a one credit hour freshman introductory seminar, UGS 101 has maintained a casual feel, which makes for a smooth transition for incoming students. Professor Jackson meets with his students for 15 class sessions. The first few class meetings lay out the principles of Green Chemistry and Engineering. The duration of the term is comprised of 8-10 round table sessions with chemical scientists and practitioners from academic, industry, government, and citizen's groups. These round table sessions are set up in efforts to deliver students with a well rounded knowledge of Green Chemistry. Speakers from different industries talk about their business and how the objective of their company relates to Green Chemistry, allowing time for question and answer at the end of each presentation. In addition to class discussion, periodic field trips have been set up to expose students to the “real-world” uses of chemistry.

The long term goal of this program is to expose students to Green Chemistry and Engineering while planting a seed of passion for science and public awareness in the student body. Though the educational focus is to identify practical environmental issues, class meetings of 20-30 students promote “out-of-the-box” brainstorming, dialog, and networking to confront today's challenges.

Michigan's success in adapting to the future depends on innovation. Cultivation of a technically-literate, science-aware citizenry in our own state is essential. With the implementation of UGS 101, Michigan State University is well on their way to developing these young minds.