

CAUSE 2003 – A Collaborative Learning Experience

Energy and Society: From Industrial Revolution to Industrial Ecology



Students will consider the formative roles that science; technology; geology and landscape; economics, social thought, religion and public policy; art and architecture; and literature, have played in charting the progress from the 18th century rural economy, to the post-industrial economy of the 21st century. Case studies will be in Pennsylvania and the UK. We will follow the significant role that fossil, nuclear, and now renewable forms of energy have played in this transformation. Findings will be compiled as an illustrated virtual travel guide and authoritative compendium, to be used on-line by future Penn State students.

When:

Spring 2003 (3 credits) and Fall 2003 (3 credits) with grades awarded following the completion of a course report, due in December 2003, documenting material gathered during the field-trip. Only a limited number of students may register for the Spring semester alone. Students will register for EM SC 470W.

Why:

“Progress” to an industrial economy has relied heavily on the availability of energy to spur the development of industry. Students will examine the controls on this metamorphosis from an agrarian to an industrialized economy, from the special vantage obtained by traveling through the cradle of the industrial revolution, and witnessing the current transformation to the information economy. Local, or global economic welfare and quality of life depend on energy choices: *fossil fuels, nuclear fission and alternative energy resources*. We will examine the past as the key to constraining well-informed energy choices for the future.

Where:

Principally at University Park, but including a 14 day research expedition in the UK and Iceland. This expedition is planned for the two-weeks following finals week, in May, 2003. Details of a prior expedition, to the desert and inter-mountain southwest and the western U.S., are documented at: www.geoee.psu.edu/courses/cause.html

Ground transportation and basic accommodation in Europe will be covered. Each student will be responsible for his/her return travel to London (~\$400), a contributed laboratory fee of \$300, and personal meals. Schreyer Scholars may be reimbursed for these expenses.

Who:

The course is open to all Juniors and Seniors who will be enrolled through December 2003, including those in the social sciences, in the natural sciences, in engineering and in communications

Students may use this course to fulfill the general education writing intensive requirement (W requirement). Depending on the student's project, it may also be appropriate for use as design credits for engineering majors.

Instructors: Derek Elsworth, Semih Eser and Jonathan Mathews
Department of Energy and Geo-Environmental Engineering

How:

This course will use occasional guest lectures, instructor-guided discussions, student presentations, and research to address the important contemporary issues of energy supply and use, and the environmental consequences of energy choices.

Students must apply to join the course. There are no formal prerequisites. Applications are available at: www.geoee.psu.edu/courses/cause.html

Applications are accepted, and periodically reviewed until the date of the course. The course will be closed when full. Invitations to join the course are made on a first-come, first-served basis.

