

## **Industrial Ecology (ISE 576)**

### **FALL 2007 TECHNICAL ELECTIVE**

**(31576D on campus, 31776D DEN, Mondays 6:30-9:10, no prerequisite)**

*Future demand for fuels and energy must be met taking into account increasingly severe environmental constraints, including global climate change and effects on ecosystems locally and across the globe. Nearly every day the business pages of the newspapers report on new initiatives within major companies on these sustainability issues. Increase your employment potential by adding knowledge and skills in this area.*



- ✓ What technological, social and economic systems are embedded in choices about energy generation and use and how are different paths of technological developments shaped by policy?
- ✓ What powerful tools can be used to analyze and compare the environmental impacts of different mixes of energy and fuel technologies? How can information about these impacts and risks be used in decision-making?

**Short Description:** Approaches and tools to evaluate the environmental impacts of products, processes, and systems in their entire life-cycle, including: material flow analysis, design for environment (DfE), input-output analysis, life-cycle assessment, industrial symbiosis and sustainable consumption.

**Learning Method:** Student teams will be given an energy system generation, distribution and use on a life-cycle basis. Each team will likely select a mix of energy technologies from current to emerging, and from centralized to distributed systems. The teams will be challenged to analyze these complex systems in order to describe their aggregate impacts on the environment.

**Contact:** Dr. M. Rahimi at (213)740-4016; [mrahimi@usc.edu](mailto:mrahimi@usc.edu). Accepted for all graduate and undergraduate majors and also needed as a required course in a new certificate in *Energy, Technology and Society*.