The Energy Institute is a cross-campus, interdisciplinary collaboration administered by the Office of the Vice President for Research that spans all eight colleges and extends off campus to a global network of public and private partners. It serves as a convening and collaboration hub where faculty and students from a wide range of disciplines work together to solve problems, create new knowledge, and support the development of a sustainable energy future.

The School of Global Environmental Sustainability was established in 2008 under the direction of Professor Diana Wall. The School is now poised to take off, and to become a successful model for the modern, interdisciplinary 21st century university. The School is an "umbrella" institution that focuses the education and research capabilities of eight colleges within CSU ranging from the Warner College of Natural Resources to the College of Business. This wide range of expertise allows the School to address a comprehensive set of sustainable development issues such as food security, poverty, inequality, water management, industrial ecology, sustainable engineering and urbanization.

Contact Information

Go to the Energy Institute’s website: http://www.energy.colostate.edu/p/for-csu-students or contact our student advisor, who can help you with questions and enrollment in the minor:

Dr. John J. Sheehan
Email: energy_advising@colostate.edu
Phone: (970) 491-6832

The Energy Institute and the School of Global Environmental Sustainability are proud to offer this new Minor in Sustainable Energy for students who recognize the need to break down the traditional barriers that separate the science and engineering of energy from the social, economic and political dimensions of energy. The Minor in Sustainable Energy offers undergraduate students, regardless of their major, an opportunity to gain a deeper knowledge of the many dimensions of sustainable energy.

The Fundamental Concepts of Energy

Citizens in all walks of life make choices about energy that have profound implications for society and for the planet. And yet, the basic concepts and vocabulary of energy remain out of reach for most citizens. Students in this new minor will gain a common language of energy basics that will enable the kind of interdisciplinary teamwork and problem solving that are needed in the transition to a sustainable energy future.

Energy Resources—What are our Options?

Fossil energy has allowed our technological society to innovate and grow at a spectacular pace. But, what is the future of fossil energy as a resource? How do we understand the limits, benefits and trade-offs of fossil versus other forms of energy such as nuclear, wind, solar and biomass? How do we assess these questions while avoiding the polarizing hyperbole that often surrounds them? These are questions that students in this new minor will be able to tackle.

Rethinking Energy—What it Means to be Sustainable

The transition to sustainable energy involves much more than shifting from fossil to renewable resources. Sustainability requires understanding energy as a human-directed system—from extraction and production to consumption—that operates within the constraints of human society and Earth’s ecosystems. In the capstone course for the minor, students will develop skills and use tools for systems thinking such as life cycle assessment, techno-economic analysis and system dynamics modeling as part of their own efforts to analyze options for sustainable energy.
Course Code  Course Name    Offered   Credits Prerequisites
AREC202 or ECON 202 Principles of Microeconomics (AUCC 3C) F,S,SS   3  MATH 117, 118, 141, 155 or 160

AREC/ECON 240 Issues in Environ. Economics (AUCC 3C) F,S,SS   3

II. ENROLLMENT RECOMMENDATIONS
- Students are encouraged to complete the following courses earlier in their academic career:
  - ECON 100
  - ECON 101

III. REQUIRED COURSES
- 9 CREDITS REQUIRED

GES 101  Foundations of Env. Sustainability  F,S,O   3
GES 141  Introduction to Sustainable Energy   3
GES 441  Analysis of Sustainable Energy Solutions   3  GES 141

GROUP A. SOCIETY AND ECONOMIC ASPECTS (CHOOSE 2)
- 6 CREDITS MINIMUM, 3-6 CREDITS MUST BE UPPER DIVISION

Course Code  Course Name    Offered   Credits Prerequisites
AREC/ECON 202 Principles of Microeconomics (AUCC 3C) F,S,SS   3  MATH 117, 118, 141, 155 or 160
AREC/ECON 240 Issues in Environ. Economics (AUCC 3C) F,S,SS   3
AREC/ECON 344 Economics of Energy Resources S,(O)   3  AREC/ECON 202
ESS 542  Greenhouse Gas Policies S   2  ESS 542
NR 320  Natural Resources History and Policy   3
POLS 101  American Gov’t and Politics (AUCC 3C) F,S,SS   3
POLS 364  U.S. Energy Policy Analysis   3  POLS 101

GROUP B. SCIENTIFIC AND TECHNOLOGICAL ASPECTS
- 6 CREDITS MINIMUM, 3-6 CREDITS MUST BE UPPER DIVISION

May select from one of the following:

ATS 150   Science of Global Climate Change   3
ATS 350   Introduction to Weather and Climate   2
ATS 351   Introduction to Weather and Climate Lab   1
ATS 555   Air Pollution S,(O)   3  CHEM 113 & (MATH 261 OR 340) & (PH 122 OR 142)

May select from one of the following:

CHEM 111  General Chemistry I (AUCC 3A)   3  MATH 125 or 155 or 157 or 160 (may be taken concurrently)
CHEM 117  General Chemistry I for Chemistry Majors F   3  MATH 118, 141, 155, 160, 161, 229 or 261

CON 476  Sustainable Practices-Design & Const. F   3

ECE 303  Energy Systems Design & Const. F   3  CBE 201 & MATH 261

ENGR 501  Foundations of Systems Engineering F   3  CBE 210 & MATH 261

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