DETAILED COURSE DESCRIPTION

COURSE:

1. ENS 422 Energy Markets and Regulation
2. Course Format: Lecture and discussion
3. 3 Credit Hours - Fall.
4. Pre- or co-requisites: ENS 325 (or equivalent)

SCOPE:

1. Level of Instruction:
   ENS 422 is a required course for seniors in the Environmental Science Renewable Energy option as well as the Renewable Energy minor.

2. Content:
   Major concepts or methodologies:

   The goal of the course is to provide students with the theoretical and practical knowledge necessary to understand energy markets and their regulation.

   1. Principles of microeconomics and welfare economics applied to energy markets.
   3. Methods and techniques of benefit/cost analysis applied to consumer, business and societal decision making.
   4. Methods of public and special interest intervention in the regulatory process.
   5. Principles of market efficiency, and methods used to mitigate markets imperfections.

3. Relation to Curriculum:

   ENS 422 is a core course as part of the Environmental Science option in Renewable Energy and the minor in Renewable Energy. The course builds on the student’s basic energy knowledge obtained in ENS 325 Energy Systems.

OBJECTIVES:

After completing this course the student should be able to:

- Discuss the development of regulation and competitive markets in electricity and natural gas.

- Analyze the issues facing companies and regulators in the restructured electric and gas industries.
- Analyze the benefits and costs of sustainable technologies (energy efficiency technologies and renewable energy) from a societal and consumer perspective.

- Discuss economic issues, such as efficiency and transfer payments, as they apply to energy markets.

**INSTRUCTIONAL FORMAT AND MATERIALS:**

*Format:* Three hours of whole group or small group discussion and work per week in the Fall semester.

*Materials:* Required materials would include textbooks and/or reader.

**INSTITUTIONAL RESOURCES REQUIRED:**

**Anticipated Enrollment: 15-20** per semester

Technology and classroom resources: Classroom with tables and moveable chairs for group work as well as a computer with projector

Computing resources: Access to on-line services and to all course management software programs

Library resources: Sufficient resources necessary for study such as journals are currently available (e.g. The Electricity Journal; Energy and Environmental Management; Energy Conservation News; Energy Economics; Energy, Economics and Climate Change; Energy Prices and Taxes; and Resource and Energy Economics).

Transportation requirements: None

Forest Properties or Field Practicum Facilities required: None

**CATALOG DESCRIPTION:**

ENS 422 Energy Markets and Regulation [3.00 credit hours]

Three hours of lecture/discussion concerning markets and regulation of energy. Topics include: the economics of energy markets, industry restructuring, and the development of markets for energy efficiency and renewable power. The role and impacts of energy regulation on markets will also be examined. Fall.

☒ Credits will not be granted for ENS 422 and ENS 622 (both undergraduate and graduate versions of the same course).

☒ Prerequisites: ENS 325 Energy Systems
Instructor: M. Kelleher

Course format: Three hours of lecture per week

3 hour(s) classroom instruction per week [lecture, seminar, quiz, discussion or recitation]

0 hour(s) group instruction per week [laboratory, field trip, workshop, group studio]

0 hour(s) supervised individual activity per week [independent study, individual studio, tutorial]

0 hour(s) work experience per week [student teaching, practicum, or internship]

COURSE HISTORY:

This is a new course being offered as part of the minor in Renewable Energy and the Option in Renewable Energy in Environmental Science. Approved by faculty action 4/14/08. Revised 1/4/12, course prefix changed administratively.