

ENERGY MANAGEMENT (ENRG)

ENRG 302. Ethical Issues in the Energy Industry

Credits: 3

Since its inception, the energy industry has faced ethical challenges. From the Edison-Westinghouse feuds to the events leading up to PUHCA in 1935, and from Enron to the failed deregulation attempts in California. Numerous instances of ethical dilemmas and governmental response to these issues will be addressed. This class will look at these issues, what safeguards have been put in place to prevent recurrence, and conclude with several case studies to challenge the students.

ENRG 310. Energy Production and the Environment

Credits: 3

Typically Offered: FALLSPR

This course is an introduction to environmental issues in the energy industry, with special emphasis on electricity generation. The course provides a comprehensive coverage of the main requirements of federal laws and regulations pertaining to hazardous waste, pollution prevention, and occupational health and safety, such as Clean Air Act (CAA), Clean Water Act (CWA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund), Emergency Planning and Community Right to Know Act (EPCRA), Endangered Species Act (ESA), etc. In addition, we examine the impact of environmental laws on the energy industry the relationship between government administration of laws and on the ground environmental compliance. We also explore the differences between laws, policies and regulations. We discuss multiple enforcement tools used by Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA), including compliance and prohibition orders, and violation reporting. Although the focus of the class will be on environmental policies in the power industry, many of these concepts and requirements apply equally to other types of energy production and natural resource extraction activities in the United States and around the world.

ENRG 315. Energy Management Communications

Credits: 3

Prerequisites: ENGL 110, ENGL 125 and BADM 202.

Typically Offered: FALLSPR

With the evolution of the smart grid and other advanced technologies across the energy industry, more information is readily available on a system wide basis for employees, supervisors and managers. In today's energy field, effective communication goes beyond written and verbal by encompassing the understanding of the specific energy industry nomenclature used in a very technical and hazardous industry. Effectively communicating and precisely managing this information is essential for the energy industry in order to compete in an every changing global environment. Development, dissemination and compliance of written communication plans are essential in everyday business, interpersonal communications, in crises and in dealing with conflicts in the workplace. Organizational communications, climate, culture and our ethical obligation to society will be discussed in steady state, crisis and hazardous situations.

ENRG 320. Fundamentals of Workforce Safety

Credits: 3

Typically Offered: FALLSPR

This course presents a managers role in contributing to workforce safety. Students will study safety regulations, safe work practices and required OSHA paperwork. Written safety programs, training, workers compensation, the value of safety, and techniques for building a positive safety culture are also studied in this course.

ENRG 330. Public Policy and Sustainability

Credits: 3

Students learn about public policy in the United States by studying the following topics: the types of public policy, the policymakers, agenda-setting, policy formation, budgeting, policy adoption, and policy evaluation. Topics such as why sustainability matters; the different functions of the private, public and non-profit sectors; ecological economics; the interplay of cost-benefit analysis, environmental impact statements, and multicriteria appraisal; the interdependency of Earths systems; how to recognize sustainable economic growth; and technologies for sustainability will also be addressed.

ENRG 404. New and Emerging Energy Technologies

Credits: 3

Students in this course explore the latest in energy technologies and how they are designed to increase efficiencies, protect the environment and streamline processes. Students discover how some of the new technologies have been around for quite some time and the reasons they are capturing new attention.

ENRG 412. Energy Economics and Finance

Credits: 3

Prerequisites: ACCT 200, ECON 201, and ECON 202.

Corequisite: ACCT 201.

This course serves as an introduction to corporate financial management in the energy industry. It covers both upstream and downstream of the fossil fuel industry, power generation, and the renewables sector, with an emphasis on the financing issues that energy facility managers handle. The primary objective of the course is to provide the concepts, framework, and tools needed to analyze financial decisions based on fundamental principles of economic and financial theories. Topics covered include corporate structures, risk management practices, introduction to capital budgeting techniques under uncertainty, asset valuation, the operation and efficiency of capital markets, the optimal capital structure and dividend policy of the firm and options.

ENRG 420. Energy Markets and Structures

Credits: 3

Prerequisites: ACCT 200, ECON 201 and ECON 202.

Corequisite: ACCT 201.

This course provides a comprehensive overview of energy markets, pricing, structures, and economics specifically relating to the energy industry. Students will study the structure of various energy markets and learn to quantify the influence of market structure on energy prices. The course will cover new and emerging markets and teach how modern energy markets are being transformed from regulated monopolies into market-driven suppliers of competitively priced energy and related services.

ENRG 430. Project Management in the Energy Industry

Credits: 3

Prerequisites: MATH 210 and ACCT 200.

Typically Offered: FALLSPR

This course introduces students to project management in the energy field and is designed for those who aspire to be energy industry managers and supervisors. It provides a comprehensive overview of project management theory, terms and concepts. Students will discover the project life cycle and learn how to build a successful project from pre-implementation to completion. The course emphasizes real world applications, including the five stages of a project (initiation, planning, execution, monitoring/control and closure); work breakdown structures and how they pertain to project management; project estimation (budget vs. forecasts vs. actuals) and cost controls; the triangle of project control (scope, duration, costs); and different types of project risks and methods of mitigation.

ENRG 435. Managing Energy Facilities

Credits: 3

Typically Offered: FALLSPR

This course provides a comprehensive overview of facilities management specifically related to the energy industry. Major areas covered during the class are safety, ethics, environmental concerns, human resources, budgeting, project management, and managements relationships with Unions, contractors and vendors. Students will be required to research current events and issues in each of these subjects and submit a written synopsis of their research on a weekly basis in addition to role play assignments where students are given real management situations to resolve. This class is considered the capstone course for the BAS program and the students are required to be in their last semester of the program to enroll in this course.