Energy Science, Technology and Policy (NRG)

Minor in Energy Science, Technology and Policy

Department of Materials Science and Chemical Engineering, College of Engineering and Applied Sciences

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Energy Science, Technology and Policy (NRG)
The Minor in Energy Science, Technology and Policy provides students with coursework intended to enhance their understanding of basic scientific concepts related to energy production, distribution and use, introduce them to basic engineering concepts in sustainable energy and a systems-based approach to energy technology, and enhance understanding of how to analyze energy policy decisions (including the impact of technical, economic and regulatory factors). Courses introduce students to emergent energy technologies (including the smart grid and future infrastructure systems), probabilistic risk assessment, and the dynamics of various energy markets, including understanding changing energy needs on a local to global scale. The Minor requires use of electronic portfolio to demonstrate attainment of learning objectives through course-based activities.

Admission to the minor: requires a minimum grade point average of 3.0 in the three introductory courses. Courses must be planned with in consultation with the Minor program advisor or director. Any course substitution must be approved in advance by the director of the Minor.

Requirements for the minor in Energy Science, Technology and Policy (NRG)

1. Introductory courses (required)

- CME 201 Sustainable Energy
- GEO 105 Energy Resources for the 21st Century
- ESG 201 Learning from Engineering Disaster

2. Technical electives (choose 3):

Science/Technology focused:

- ESE 350 Electrical Power Systems
- ESE 319 Electromagnetics and Transmission Line Theory
- ESE 352 Electromechanical Energy Converters
- EEO 323 Electromagnetics (non-SBU students only)
- EEO 470 Renewable Distributed Generation and Storage (non-SBU students only)
- EEO 482 Power Systems Engineering I (non-SBU students only)
- EEO 425 Electric Machinery and Energy Conversion (non-SBU students only)
- MEC 301 Thermodynamics
- MEC 305 Heat and Mass Transfer
- ESG 302 Thermodynamics of Materials (Note: cannot take both ESG 302 and MEC 301 for minor requirements)

Policy focused:

- ESM 486 Innovation and Entrepreneurship in Engineering
- EDP 301 The Built Environment I
- EHI 343 Sustainable Natural Resources
- MAR 336 Marine Pollution

3. ESM 488 Cooperative Industrial Practice (required)

Note: ESM 488 internship must be energy-related; also may substitute independent research course (499) if appropriate (and if approved by director of the minor).

ACC Faculty

Faculty information for this program can be found at http://www.stonybrook.edu/commcms/business/people/ft.html
No courses are associated with this academic program.