The energy science and technology major is designed to provide an introductory-level education of multi-disciplinary engineering skills through the broad requirement of physics, math, engineering and chemistry courses. In addition to these core math and science competencies, the first two years of the program introduce the students to a variety of energy-related industries.

With this foundation, students begin specialization through the choice of approved upper-level electives. Students can focus on aspects of energy efficiency in buildings and industry, alternative and renewable energy production, and petroleum technology. With a broad foundation in math and science and experience with modern technologies, students will be highly marketable across the spectrum of energy-related industries. Finally, students will demonstrate the practical experience gained through the curriculum by completing a capstone research project.

**Required Skills:**
- Mathematics & Science
- Problem Solving
- Research
- Communication (Written & Oral)
- Organization
- Time Management
- Leadership

**Possible Employers:**
- Corporations and Private Industry
- Design Firm
- Energy Start-Ups
- Government Agencies
- Research Laboratories
- Colleges or Universities

**PROFESSIONAL ORGANIZATIONS**
- Clean and Safe Energy Coalition  http://casenergy.org/
- Clean Energy America  http://www.cleanenergy4america.org/
- U.S. Department of Energy  http://energy.gov/
- Heartland Institute  http://heartland.org/

**FIND OUT MORE ABOUT CAREERS IN ENERGY SCIENCE & TECHNOLOGY AT:**
- Pacific Northwest Center of Excellence for Clean Energy  http://www.centralia.edu/coe/careers.html
- Career Services  http://www.upb.pitt.edu/career/
## GENERAL EDUCATION REQUIREMENTS

### COMPETENCIES

*Minimum grade of C- required in all competencies*

- FS 0102 Freshman Seminar (if transferring in fewer than 18 credits)
- ENG 0101 English Composition I
- ENG 0102 English Composition II

### Writing

- ENG 0101 English Composition I
- ENG 0102 English Composition II

### Mathematics

- *MATH 0098 College Algebra II or Higher (see Major)*

### THE HUMAN EXPERIENCE

- Students are required to complete two courses designated as “Global”

### ARTS & LETTERS

*ONE course MUST be literature; ONE course MUST be a creative, fine or performing Arts course*

- Literature
- Arts
- Literature, Arts, Language

### BEHAVIORAL, ECONOMIC, & POLITICAL SCIENCES

*Two different categories must be represented*

- (See Major)
- (See Major)
- (See Major)

### HISTORY, CULTURES, & PHILOSOPHICAL INQUIRY

*ONE course MUST be History, and ONE course must be Cultures or Philosophical Inquiry*

- HIST
- (See Major)

### PHYSICAL, LIFE, & COMPUTATIONAL SCIENCES

*ONE course must be a Physical Science, ONE must be a Life Science and ONE must include a lab*

- Physical Science (See Major)
- Life Science (See Major)
- Lab (See Major)

### PHYSICAL EDUCATION

- PEDC

*MATH 0098 does not meet the mathematics competency at the Pittsburgh campus*

## REQUIRED MAJOR COURSES (59 Credit Hours)

- CHE 0036/ ENGR 0051 Thermodynamics
- CHEM 0101 General Chemistry I
- CHEM 0102 General Chemistry II
- ECE 0031 Linear Circuits I
- ECON 0102 Introduction to Microeconomics
- ECON 1307 Economics of Energy and the Environment
- ENGR 0011 Introduction to Engineering Analysis
- ENGR 0135 Statics and Mechanics of Materials
- ES 0112 Introduction to Energy Science and Tech
- EST 1301 Sensors and Automation
- EST 1451 Capstone: Energy Technology
- GEOL 0101 Physical Geology
- MATH 0140 Calculus I
- MATH 0150 Calculus II
- PET 0105 Introduction to GIS Technology
- PHYS 0201 Foundations of Physics I
- PHYS 0202 Foundations of Physics II

### CHOOSE 2 OF THE FOLLOWING (6 Credit Hours)

- ENVSTD 0102 Introduction to Environmental Studies
- PS 0102 American Political Process
- PS 0209 Environmental Politics

### CHOOSE 1 OF THE FOLLOWING (3 Credit Hours)

- PHIL 1445 Environmental Ethics
- PS 1319 Political Parties and Interest Groups

## MAJOR ELECTIVES (12 CREDIT HOURS)

Students are encouraged to begin specialization in a selected area of Energy. Accordingly the degree requires at least 12 credits of approved electives, including 6 upper level credits, in a selected area of concentration, which includes, but is not limited to, petroleum technology, chemistry, biology, and environmental science

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According to your Degree Progress Report in **MY.PITT.EDU** upon successful completion of the current term:

You will have EARNED _________ credit hours

You NEED _________ for 120 credit hours required for graduation.

You will have earned _________ credit hours of Upper Level course work.

You NEED ______ for the 30 credit hours required for graduation.

NOTE: This guide is unofficial. Completing the requirements on this sheet does NOT guarantee degree completion. Official degree completion information can be found in **MY.PITT.EDU**. Contact your Faculty Advisor and/or the Registrar’s Office with questions or concerns.