“...it’s been a fantastic journey for me being part of the minor through my MIT undergraduate career!”

— 2015 Energy Minor Graduate

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web.mit.edu/energystudies
The Energy Studies Minor for undergraduates is an Institute-wide program that complements the deep expertise obtained in any major with a broad understanding of the interlinked realms of science, technology, and social sciences as they relate to energy and associated environmental challenges. The Minor curriculum integrates these three domains in a thoroughly multidisciplinary program.

REQUIREMENTS

Completion of the Energy Studies Minor requires coursework in each of the three Core Curriculum categories listed below plus twenty-four Energy Elective units. Approved subjects in each category are listed inside this brochure and updated at web.mit.edu/energystudies.

CORE CURRICULUM

Energy Science Foundations
fundamental laws and principles that govern energy sources, conversion, and uses

Social Science Foundations of Energy
social scientific perspectives and tools that explain human behavior in the energy context

Energy Technology/Engineering in Context
the application of laws and principles to a specific energy context

ENERGY ELECTIVES

Twenty-four Elective Units

Students who take more than the required subject(s) from any of the Core Curriculum subject lists may count the additional coursework toward the Elective Requirement.

“I loved the energy studies minor. The fact that MIT has a minor entirely dedicated to interdisciplinary study of energy was part of the reason I chose to come to MIT and I was not disappointed.”

— 2014 Energy Minor Graduate
**Energy Science Foundations**

*Choose one of the following options:*

**Option 1 (one subject)**
- 8.21 Physics of Energy

**Option 2 (two subjects)**
select 2A, 2B, 2C, or 2D from the list below:

- **2A** 2.005 or 5.60, and 6.007
- **2B** 2.005 or 5.60, and 12.021 or 12.340
- **2C** 12.021 or 12.340, and 6.007
- **2D** 6.007 or 12.021 or 12.340, and 3.012
- 2.005 Thermal-Fluids Engineering I
- 3.012 Fundamentals of Materials Science and Engineering
- 5.60 Thermodynamics and Kinetics
- 6.007 Electromagnetic Energy: From Motors to Lasers
- 12.021 Earth Science, Energy, and the Environment
- 12.340 Global Warming Science

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**Energy Technology/Engineering in Context**

*Choose one of the following:*

- 2.60J Fundamentals of Advanced Energy Conversion
- 4.42J Fundamentals of Energy in Buildings
- 22.081J Introduction to Sustainable Energy

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**Social Science Foundations of Energy**

*Required subjects:*
- 14.01 Principles of Microeconomics
  or
- 15.016 Economic Analysis for Business Decisions

*Choose one of the following options:*

**Option 1 (one subject)**

**Option 2 (two subjects)**
select one in Group A and one in Group B from the list below:

**GROUP A**
- 14.42 Environmental Policy and Economics
- 14.44J Energy Economics and Policy
- 15.026J Global Climate Change: Economics, Science, and Policy

**GROUP B**
- 1.801J Environmental Law, Policy, and Economics: Pollution Prevention and Control
- 11.162 Politics of Energy and the Environment
- 22.04 Social Problems of Nuclear Energy

*Note:*
Students who take more than the required subject(s) from any of the Core Curriculum subject lists may count the additional coursework toward the Elective Requirement.

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[web.mit.edu/energystudies](http://web.mit.edu/energystudies)
Choose 24 units from the following (all subjects 12 units unless otherwise noted):

1.071J Global Change Science  
2.006 Thermal-Fluids Engineering II  
2.612 Marine Power and Propulsion  
2.627 Fundamentals of Photovoltaics  
2.813 Energy, Materials, and Manufacturing  
3.003 Principles of Engineering Practice (9 units)  
3.004 Principles of Engineering Practice  
4.401 Environmental Technologies in Buildings  
4.472 Design Workshop for a Sustainable Future (9 units)  
6.061 Introduction to Electric Power Systems  
6.131 Power Electronics Laboratory  
6.701 Introduction to Nanoelectronics  
8.044 Statistical Physics I  
10.04J A Philosophical History of Energy  
10.213 Chemical and Biological Engineering Thermodynamics  
10.27 Energy Engineering Projects Laboratory (15 units)  
10.426 Electrochemical Energy Systems  
11.142 Geography of the Global Economy  
11.160J Re-energizing MIT: Innovating Energy Management at the Institute  
11.165 Energy and Infrastructure Technologies  
12.213 Alternate Energy Sources (6 units)  
12.346J Global Environmental Science and Politics  
21H.318 The Energy Crisis: Past and Present  
22.033 Nuclear Systems Design Project  
22.06 Engineering of Nuclear Systems  
EC.711 D-Lab: Energy  
STS.032 Energy, Environment, and Society

Note: Please visit mitei.mit.edu/education/energy-minor for potential elective and core subject substitutions.