

REQUIREMENTS

4 core classes and 2 electives

CORE CURRICULUM

Students choose one class from a pre-approved list in each of the following four areas:

Economics

How economic principles underlie every aspect of energy

Energy Science Foundations

Fundamental laws and principles that govern energy sources, conversion, and uses

Social Science Foundations of Energy

Social scientific perspectives that help explain human behavior in an 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 take 24 energy elective units (generally two classes) that allow them to focus on their individual areas of interest.

ENERGY COMMONS

Students who declare a minor in energy studies gain access to the centrally located Energy Commons (10-063). In this community space reserved exclusively for undergrads, students can meet with friends and collaborators, plan and enjoy special events, or relax over free coffee. For more information, contact the MITEI Education Office in E19-307 or at askmitei-ed@mit.edu.

“ Going into college, I was really interested in the energy field in general, especially in renewables, and I wanted to get some perspective on oil and gas as well. The breadth of the Energy Studies Minor really helped solidify that interest, and it’s still directing me to new places where I can continue to focus on energy.”



Jacqueline Han
SB '14 Political Science

ENERGY STUDIES MINOR at MIT

2017-2018

Contact:
Rachel Shulman, Academic Coordinator
MITEI Education Office, Building E19-370D
617-324-7236, askmitei-ed@mit.edu

energy.mit.edu/minor



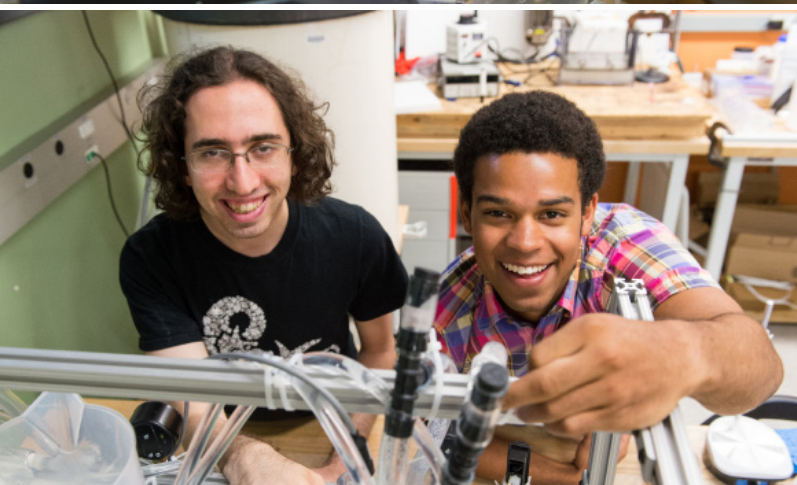
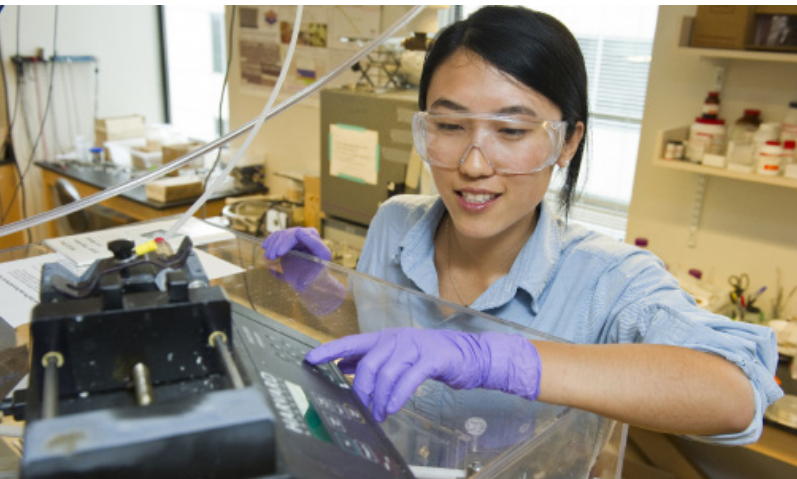
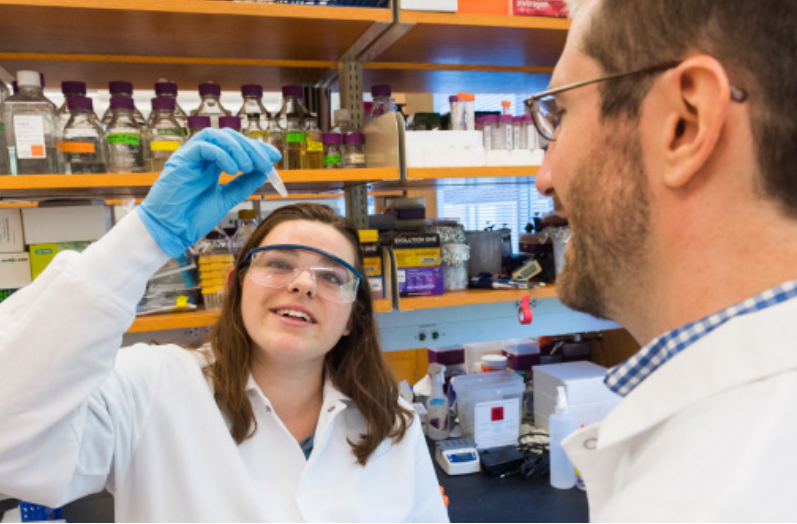
“ The energy minor really gives students the tools to use their technical background to address climate issues. The curriculum does an amazing job of bridging the gap between academia and what’s going on in the world.”



Christian Welch
SB '13 Mechanical and Ocean Engineering;
Energy Studies Minor
SM '15 Mechanical Engineering

printed on recycled paper
revised July 2017
photos | Justin Knight





CORE CURRICULUM

ENERGY ELECTIVES

Choose one from each of the four categories:

Energy Science Foundations

Fall

12.021 Earth Science, Energy, and the Environment

Spring

8.21 Physics of Energy, REST

Economics

Fall

14.01 Principles of Microeconomics, HASS-S

15.0111 Economic Analysis for Business Decisions (9 units)

Spring

14.01 Principles of Microeconomics, HASS-S

Social Science Foundations of Energy

Spring

14.44J/15.037J Energy Economics & Policy, HASS-S

11.142 Geography of the Global Economy, HASS-S

15.2191J/17.399J Global Energy: Politics, Markets, and Policy¹

Energy Technology/Engineering in Context

Fall

22.081J/2.650J/10.291J Introduction to Sustainable Energy

4.42J/1.044J/2.66J Fundamentals of Energy in Buildings,² REST

11.165 Urban Energy Systems and Policy, HASS-S

Spring

2.60J/10.390J Fundamentals of Advanced Energy Conversion

This curriculum is currently under review by the Committee on Curricula for application to the class of 2022 and later. Students graduating before 2022 can choose to use the current structure of the Energy Studies Minor, as outlined in the Bulletin, or choose to use the structure outlined above by submitting a petition to the Energy Minor Oversight Committee. For the most up-to-date information on the Energy Studies Minor, please visit energy.mit.edu/minor and contact the MITEI Academic Coordinator at askmitei-ed@mit.edu.

Choose 24 units from the following:

1.018AJ/7.30AJ/12.031AJ Fundamentals of Ecology I (6 units, first half of term)

1.020 Principles of Energy and Water Sustainability

1.071J/12.300J Global Change Science³

1.079 Rock-on-a-Chip: Microfluidic Technology for Visualization of Flow in Porous Media

1.801J/11.021J/17.393J/IDS.060 Environmental Law, Policy and Economics: Pollution and Prevention Control, HASS-S

2.005 Thermal-Fluids Engineering I

2.006 Thermal-Fluids Engineering II

2.570 Nano-to-Macro Transport Processes⁴

2.603 Fundamentals of Smart and Resilient Grids²

2.612 Marine Power and Propulsion

2.627 Fundamentals of Photovoltaics²

2.813 Energy, Materials, and Manufacturing

3.003 Principles of Engineering Practice (9 units)

3.004 Principles of Engineering Practice (12 units)

3.012 Fundamentals of Materials Science and Engineering (15 units), REST

3.022 Microstructural Evolution in Materials

3.18 Materials Science and Engineering of Clean Energy

3.154J/22.054J Materials Performance in Extreme Environments³

4.401 Environmental Technologies in Buildings

5.60 Thermodynamics and Kinetics, REST

6.007 Electromagnetic Energy: From Motors to Solar Cells, REST

6.061 Introduction to Electric Power Systems²

6.131 Power Electronics Laboratory

6.152J/3.155J Micro/Nano Processing Technology

10.04 A Philosophical History of Energy

10.05 Foundational Analyses of Problems in Energy and the Environment

10.213 Chemical and Biological Engineering Thermodynamics

10.27 Energy Engineering Projects Laboratory (15 units)

10.28 Chemical-Biological Engineering Laboratory (15 units)

10.302 Transport Processes

10.426 Electrochemical Energy Systems

11.162 Politics of Energy and the Environment, HASS-S³

12.340 Global Warming Science⁴

12.346J/IDS.062J Global Environmental Negotiations (6 units)²

14.42 Environmental Policy and Economics, HASS-S²

15.026J/12.348J Global Climate Change: Economics, Science, and Policy (9 units)

16.001 Unified Engineering: Materials Structures, REST

16.002 Unified Engineering: Signals and Systems

16.003 Unified Engineering: Fluid Dynamics

16.004 Unified Engineering: Thermodynamics

17.051 Ethics of Energy Policy, HASS-S⁴

22.033 Nuclear Systems Design Project (15 units)

22.06 Engineering of Nuclear Systems

EC.711J/2.651J D-Lab: Energy

STS.032 Energy, Environment, and Society, HASS-H, CI-H²

STS.084J/22.04J Social Problems of Nuclear Energy, HASS-S

IAP/Summer offerings:

12.213 Alternate Energy Sources (IAP)⁴

UROP (for pay in summer/for credit either term)⁵

¹ Offered in the spring during AY 17-18. Offered in the fall during AY 18-19.

² Not offered AY 17-18.

³ Not offered AY 18-19.

⁴ Not offered regularly.

⁵ Energy UROP students who work during the summer for pay can continue their research in the fall/spring for credit. This credit can count as an elective for the minor.

HASS-S: Humanities, Arts, and Social Sciences - Social Sciences

REST: Restricted Electives in Science and Technology

CI-H: Communications Intensive in HASS