The Energy Studies Minor has provided me with a really comprehensive and well-rounded curriculum through which I can explore the field of energy. Above all, it has introduced me to people—peers, professors, and professionals—who also share my passion for energy and has opened a lot of doors to different career paths and academic interests that I would not otherwise have encountered or explored.

Allison Shepard
Chemical Engineering SB ’19
### CORE CURRICULUM

#### Choose one from each of the four categories:

**Economics**
- Fall: 14.01 Principles of Microeconomics, HASS-S
- Spring: 14.01 Principles of Microeconomics, HASS-S

**Energy Science Foundations**
- Fall: 12.021 Earth Science, Energy, and the Environment
- Spring: 8.21 Physics of Energy, REST

**Energy Technology/Engineering in Context**
- Fall: 11.165 Urban Energy Systems and Policy, HASS-S
- Spring: 2.60J/10.390J Fundamentals of Advanced Energy Conversion
- 22.081J/2.650J/10.291J Introduction to Sustainable Energy
- EC.712 Applications of Energy in Global Development

**Social Science Foundations of Energy**
- Fall: 15.020/14.43 Economics of Energy, Innovation, and Sustainability, HASS-S
- Spring: 11.142 Geography of the Global Economy, HASS-S

### ENERGY ELECTIVES

Choose 24 units from the following:

- 1.018J/7.30J/12.033J Fundamentals of Ecology, REST
- 1.020 Engineering Sustainability: Analysis and Design
- 1.079 Rock-on-a-Chip: Microfluidic Technology for Visualization of Flow in Porous Media
- 1.80J/11.021J/17.393J/IDS.060J 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 Processes
- 2.603 Fundamentals of Smart and Resilient Grids
- 2.612 Marine Power and Propulsion
- 2.627 Fundamentals of Photovoltaics
- 2.813 Energy, Materials, and Manufacturing
- 3.003 Principles of Engineering Practice
- 3.004 Principles of Engineering Practice
- 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 Environments
- 4.401 Environmental Technologies in Buildings
- 4.432 Modeling Urban Energy Flows for Sustainable Cities and Neighborhoods
- 5.352 Synthesis of Coordination Components and Kinetics (6 units, partial term)
- 5.372 Chemistry of Renewable Energy (6 units, partial term)
- 5.60 Thermodynamics and Kinetics, REST
- 6.061 Introduction to Electric Power Systems
- 6.131 Power Electronics Laboratory
- 6.152/3.355J Micro/Nano Processing Technology
- 6.701 Introduction to Nanoelectronics
- 6.508 Principles of Modeling, Simulations, and Control for Electric Energy Systems

- 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-S
- 12.346J/IDS.062J Global Environmental Negotiations (6 units)
- 14.42 Environmental Policy and Economics, HASS-S
- 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
- 16.044 Unified Engineering: Thermodynamics
- 17.051 Ethics of Energy Policy, HASS-S
- 22.033 Nuclear Systems Design Project (15 units)
- 22.04J/STS.084J Social Problems of Nuclear Energy, HASS-S
- 22.06 Engineering of Nuclear Systems
- 2TS.032 Energy, Environment, and Society, HASS-H
- Energy UROP (units vary)

IAP offering:
- 12.213 Alternate Energy Sources

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3. Not offered regularly.
4. This class is a “special” subject and might not be offered again in the future.

HASS-H: Humanities, Arts, and Social Sciences - Humanities
HASS-S: Humanities, Arts, and Social Sciences - Social Sciences
REST: Restricted Electives in Science and Technology

[energy.mit.edu/minor](energy.mit.edu/minor)