

CIVIL AND ENVIRONMENTAL ENGINEERING

Course 1

Department Contact

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Description

Civil and environmental engineers strive to solve complex, global challenges, and improve the world in which we live. Their intellectual focus is on the human-built environment and the complex infrastructure systems that it entails, as well as the man-made effect on the natural world. Civil and environmental engineers work to develop and apply pioneering approaches that range from basic scientific principles to complex engineering design, with a focus on translating these fundamental advances into real-world impact. They focus on five strategic areas: ecological systems, resources, structure and design, urban systems, and global systems. Civil and environmental engineers design the structures we live and work in, protect our natural resources, the roads we drive on, develop new materials, and work to combat climate change.

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1-ENG	General Engineering	Undergraduates: 37
	<i>Includes tracks in Environment, Mechanics and Materials, and Systems Engineering</i>	
1-12	Climate System Science Engineering	

Introductory Classes

- 1.008 **Engineering Solutions to Societal Challenges**
This 3-unit Discovery Subject is a hands-on look at the diverse work done in Course 1. This seminar-style subject fosters discussions with leaders in infrastructure and environment on topics such as: smart infrastructure, cyber-physical systems, water, energy, and food security, sustainable materials, disaster response and community resilience.
- 1.009 **Climate Change**
This 3-unit Discovery Subject provides an introduction to global climate change processes, drivers, and impacts. Students in this subject are exposed to the exciting research on climate changes that is taking place in Course 1.

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1.097 **mini-UROP**

The mini-UROP is a 6-unit subject over IAP in which first-year students are paired with a CEE graduate student or postdoc mentor for an inside look at the exciting research taking place in the department. This is a great opportunity to learn more about CEE!

1.057 **Heritage Science and Technology**

Accompany Professor Admir Masic for a three-week fieldwork experience in Italy over the summer. Students then analyze the data that they gathered on the trip through the fall subject, 1.057, where students will formulate projects based on their areas of interest.

Course 1-Friendly UROP Areas

- Parsons Laboratory for Environmental Science and Engineering
- Pierce Laboratory for Infrastructure Science and Engineering

Get Involved with Course 1

- The Civil and Environmental Engineering Students Association
- MIT Energy Club
- MIT Water Club
- MIT Wind Club

Skills

- Familiarity with engineering fundamentals
- Design innovative and sustainable structure
- Design and optimize urban systems
- Collect and analyze complex data

Possible Future Jobs

- **Sustainability officer:** Oversees and implements environmental, social, and economic initiatives within an organization to promote sustainable practices and reduce environmental impact.
- **Energy engineer:** Designs and evaluates projects and programs to reduce energy costs or improve energy efficiency during the design, building, or remodeling stages of construction.
- **Environmental engineer:** Use engineering and ecological principles to protect and enhance the natural environment and its resources.

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- **Structural engineer:** Analyzes and designs structures such as stadiums, arenas, office buildings, and bridges to ensure they safely and satisfactorily perform their purpose.

Career Industry Examples

Data analytics

Renewable energy and utilities

Computer software

Government/Policy

Consulting

Transportation

Structural design

Climate risk analyst

Sample Employers

Arup

Google

Facebook

Volpe

Coinbase

Kimley-Horn

ARPA-E

AECOM

CDM Smith

Tesla

Boeing

Thornton Tomasetti