

Sustainability Courses 2024-2025

Updated 6/3/24

Sustainability is a crucial aspect of Environmental Engineering, especially for the 21st century and beyond. This requirement for a sustainability course fulfills the need for Environmental Engineering students to understand the concepts of sustainability and gain the ability to use sustainability tools and indicators.

Topics appropriate include some or all of the following:

- Impact of human activity on food, energy, environment, etc. (Age of anthropocene)
- Define and discuss: sustainability, sustainable development, sustainable engineering and recent history on sustainability actions such as Earth Summit, Rio Declaration, Brundtland Report, Kyoto Protocol, etc.
- Define and discuss: appropriate technology and global engineering principles
- Use of various sustainability tools - Life cycle analysis (LCA), techno-economic analysis (TEA)
- Use of various sustainability indicators such as Human Development Index, greenhouse gas emissions
- Implementation of sustainability principles in engineering design, triple bottom line
- Sustainability issues pertaining to one or more systems – energy (renewable), sustainable agriculture, water and waste, sustainable infrastructure (LEED, etc.)

Courses that appear on multiple lists may **NOT** be double counted.

The student is responsible for checking and abiding by the ISU catalog relative to official course details, prerequisites, and narratives.

| Course Number | Title | Offering |
|---|---|-------------|
| CRP 4840/5840 ENVS 4840 | Sustainable Communities (3 cr) <i>Prereq: Junior classification</i> | S |
| CRP 4550/5550 | Smart and Sustainable Cities (3 cr) | Irregularly |
| ABE 3250 TSM 3250 | Biorenewable Systems (3 cr) <i>Prereq: CHEM 1630 or higher; MATH 1400 or higher</i> | F |
| ABE 3880 CE 3880 EE 3880 | Sustainable Engineering and International Development (3 cr) <i>Prereq: Junior classification in engineering</i> | F |
| AGRON 4040/5040 ENSCI 4040/5040 ENVS 4040 MTEOR 4040 /5040 | Global Change (3 cr) | F, S |
| ECON 3800 ENVS 3800 | Energy, Environmental and Resources Economics (3 cr) <i>Prereq: ECON 1010</i> | Irregularly |
| ENVS 3240 ENSCI 3240 GEOL 3240 MTEOR 3240 | Energy and the Environment (3 cr) <i>Prereq: CHEM 1630 or CHEM 1670 or CHEM 1770</i> | S |
| GLOBE 402 | Responses to Global Resources System Challenges (3 cr) | S |
| ME 4840/5840 WLC 4840/5840 MKT 4840/5840 | Technology, Globalization and Culture (3 cr) <i>Prereq: Junior or senior classification</i> | F |
| SOC 3480 | Global Poverty, Resources and Sustainable Development (3 cr) | Irregularly |
| SUSE 5010 | Sustainable Design in Communities (5 cr) | Irregularly |