

Sustainability Courses 2023-2024

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 marked with a “*” appear on the Social Sciences and Humanities and Engineering Topics Electives lists for Environmental Engineering. These courses may be taken as either “SSH” or “ETE” or “Sustainability” classes, but they may NOT be counted as all three, “Sustainability”, “SSH” and “ETE”.

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 484 ENV S 484	Sustainable Communities (3 cr) <i>Prereq: Junior classification</i>	S only
CRP 455/555	Smart and Sustainable Cities (3 cr)	S only
ABE 325 TSM 325	Biorenewable Systems (3 cr) <i>Prereq: Chem 163 or higher; Math 140 or higher</i>	F only
ABE 388* CE 388* EE 388*	Sustainable Engineering and International Development (3 cr) <i>Prereq: Junior classification in engineering</i>	F only
AGRON 404 ENSCI 404 ENV S 404 MTEOR 404	Global Change (3 cr) <i>Prereq: Four courses in physical or biological sciences or engineering; junior standing</i>	S only
AGRON 446	International Issues & Challenges in Sustainable Develop. (3 cr) <i>Prereq: 3-credit biology course, sophomore or higher classification, permission of instructor</i>	F, S

ECON 380 ENV S 380	Energy, Environmental and Resources Economics (3 cr) <i>Prereq: Econ 101</i>	Offered irregularly
ENV S 324 GEOL 324 MTEOR 324	Energy and the Environment (3 cr) <i>Prereq: Chem 163 or Chem 177, Math 140</i>	S only
GLOBE 402	Responses to Global Resources System Challenges (3 cr)	S only
ME 479	Sustainability Science for Engineering Design (3 cr) <i>Prereq: Any engineering design course</i>	Alt S, offered irregularly
ME 484 WLC 484	Technology, Globalization and Culture (3 cr) <i>Prereq: junior or senior classification</i>	F only
SOC 348	Global Poverty, Resources and Sustainable Development (3 cr) <i>Prereq: Soc 134</i>	Offered irregularly
SUS E 501	Sustainable Design in Communities (5 cr) <i>Prereq: Graduate or senior status with instructor approval</i>	Offered irregularly

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