

Program in Sustainable Engineering (PISE)

Official Rules and Course Lists: Revised 10-30-2019



PROGRAM IN SUSTAINABLE ENGINEERING
PEOPLE, PROSPERITY, PLANET

The Program in Sustainable Engineering is a specialized study program that allows undergraduate engineering students to take 9 credit hours of courses focused on sustainability to earn the following notation on their transcript: "Program in Sustainable Engineering". In-person advising available in 2166 G.G. Brown Building (Ariane Smith, CEE).

The 9-credit PISE program requires the 3-credit course Sustainable Engineering Principles (CEE 265). The Course ME 489 Sustainable Engineering and Design is equivalent to CEE 265 and can be used as the 3-credit foundation course. CEE 265 and ME 499 cannot both count toward the program and should not both be taken by a single student.

The remaining 6-credits are taken from a list of engineering courses (3 credits) and a list of non-engineering courses (3 credits). The program can be completed without exceeding the 128 credits required for a BS/BSE and provides students the opportunity to organize their elective courses around this theme. The PISE designation is earned after taking:

3-credit foundation course Sustainable Engineering Principles (CEE 265) or Sustainable Engineering and Design (ME 489).

3-credits of coursework from a selection of courses identified within the College of Engineering that feature significant content in sustainable engineering. (List A)

3-credits of coursework from a selection of courses identified outside the College of Engineering that feature significant content in sustainability, specifically considering non-engineering issues at the intersection of technology and society. The course list can be found below.

List A: Engineering/Technical Courses (3 credits required)

ARCH 357 (3)	Architecture, Sustainability and the City
AOSS 480 (3)	Climate Change: An Interdisciplinary Approach to Problem Solving
CEE 307 (3)	Sustainable Cities
CEE 501 (3)	Wind Development Engineering (Section 7)
CEE 501 (3)	Greenhouse Gas Control (Section 014)
CEE 501 (2)	Decentralized Water Supply, Hygiene, and Sanitation (Course does not count!)
CEE 586 (3)	Industrial Ecology
CEE 588 (3)	Environmental Finance
CEE/ChE 686 (3)	Case Studies in Environmental Sustainability
CEE 563 (3)	Air Quality Engineering
CEE 565 (3)	Seminars on energy science, technology & Policy
CEE 567 (3)	Energy Infrastructure Systems
CEE 574 (ARCH 595)	Materials Selection for Sustainable Design
CEE 624 (3)	Restoration Fundamentals and Practice in Ecological Systems
ChemE 497 (3)	Special Topics: Fossil and Renewable Fuels
EECS 498-04	Grid Integration of Alternative Energies
ENG 521 (3)	Clean Tech Entrepreneurship
ME 433 (3)	Advanced Energy Solutions
ME 589 (3)	Sustainable Design of Technology Systems
MSE 489 (3)	Specific Capstone: Materials Processing Design (Designing Sustainable Products and Processes)
NRE 501.036 (3)	Environmental Input-Output Analysis

List B: Non-Engineering Courses (3 credits required)

AMCULT 496 (3)	American Values and Sustainability
ANTHROCUL 408/DAAS 409 (3)	Material/Child Health, the Environment, and Pollution in Africa
ARCH 357 (3)	Architecture, Sustainability and the City
ARCH 423 (3)	Introduction to Urban and Environmental Planning
CEE 588 (3)	Environmental Finance
CMPLXSYS 391 (4)	Introduction to Modeling Political Processes
EAS 574/PUBPOL 519	Sustainable Energy Systems
ECON 370 (3)	Environmental and Resource Economics
ECON 437 (3)	Energy Economics
EHS 500 (3)	Principles of Environmental Health Sciences
ENG 320 (3)	Writing in a Time of Extinction (Literature and the Environment)
ENVIRON 110 (3)	The Science of Sustainability
ENVIRON 111 (3)	Introduction to Global Change: Human Impacts
ENVIRON 139-001 (3)	Footprints Across Time
ENVIRON 201 (3)	Ecological Issues
ENVIRON 207(3)	Sustainability and Society
ENVIRON 208 (3)	Business and the Natural Environment
ENVIRON 211 (3)	Social Sciences and Environmental Problems
ENVIRON 222 (3)	Intro to Environmental Justice
ENVIRON 230 (3)	Natural and Environmental Hazards
ENVIRON 232 (3)	The Inexhaustible Seas? Marine Resources and Environmental Issues
ENVIRON 244 (3)	Introduction to Environmental Humanities
ENVIRON 250 (3)	Social Systems, Energy, and Public Policy
ENVIRON 256 (3)	Culture, Adaptation, and Environment
ENVIRON 270 (4)	Our Common Future
ENVIRON 284 (3)	Intro to Environmental Geology
ENVIRON 301 (3)	Nature, Culture, and Landscape
ENVIRON 302 (3)	Leadership and Environmental Stewardship in Organizations
ENVIRON 302 (3)	Energy Politics (also PolSci 336); Environmental Social Science
ENVIRON 304 (3)	Topics in Culture and Environment
ENVIRON 305 (3)	Environment à la mode
ENVIRON 306 (3)	Global Water
ENVIRON 308 (3)	Sustainability and Health
ENVIRON 312 (3)	Environmental Politics and Policy
ENVIRON 317 (3)	Conservation Biology
ENVIRON 321 (3)	Climate Change and Adaptation: Adaptive Development in a Changing World
ENVIRON 324 (3)	Sec 001 – Intro to Water Law and Policy
ENVIRON 344 (3)	Sustainability & Fossil Energy
ENVIRON 345 (3)	Environmental Public Opinion Analysis
ENVIRON 360 (3)	Behavior & Environment
ENVIRON 361 (3)	The Psychology of Environmental Stewardship
ENVIRON 365 (3)	International Environmental Policy
ENVIRON 367 (3)	Global Enterprise & Sustainable Development
ENVIRON 370 (3)	Introduction to Urban and Environmental Planning
ENVIRON 376 (3)	Environmental Ethics
ENVIRON 377 (3)	Literature and Oil or The Environmental Imagination
ENVIRON 377 (3)	Southern Natures: The Making and Unmaking of Environments and Races
ENVIRON 380 (3)	Mineral Resources, Economics, and the Environment
ENVIRON 390 (3)	Environmental Activism: Citizenship in a Republic
ENVIRON 391 (3)	Sustainability and the Campus
ENVIRON 407 (3)	Sustainable Cities
ENVIRON 412 (3)	Environmental Values in Public Policy

ENVIRON 462 (3)	Topics in Environmental Social Science
ENVIRON 475 (3)	Environmental Law and Policy (NRE 475)
GERMAN 326 (3)	<i>Section 002 only</i> – Germany and the Environment
HISTORY 392 (3)	Global Course Connection – Environmentalism in Japan
NRE/AOSS 480 (3)	Climate Change: The Move to Action
NRE 501.036 (3)	Consumption, Trade, and Environmental Input Output Analysis
NRE 501.041 (3)	Climate Policy
NRE 550 (3)	Systems Thinking for Sustainable Development
NRE 574 (3)	Sustainable Energy Systems
PH 210 (3)	Energy for our Future
PH 410 (3)	Sustainability and Environmental Health
PSYCH 385 (3)	The Psychology of Environmental Stewardship
PUBPOL 481 (3)	Science, Technology, and Public Policy
RCIDIV 302 (3)	Advanced Issues in Science, Technology, Medicine, and Society: Environmental Literature / Social Justice
SOC 415 (3)	Culture and Consumption
STRATEGY 411 (3)	The Corporation in Society
URP 427 (3)	Foundations of Sustainable Food Systems
URP 403 (3)	Sustainable Neighborhoods

- Any letter graded umich class can be petitioned for addition to List A or List B.
- CEE 265 or ME 499-089 is required by PISE and cannot be substituted.
- To petition a course to count on List A or List B:
Send the course syllabus by email to: sustainable.engineering@umich.edu
Be sure to include which list you would like the course counted as (list A or list B).