

Energy and Sustainability, Certificate

SUESUCERT

If you want to create a sustainable energy future, this certificate program is for you. It draws from and complements a variety of majors, and it can also be pursued as a stand-alone certificate.

Description

The transdisciplinary certificate program in energy and sustainability examines current energy systems and explores what will be required to transition to a sustainable energy future.

In a world increasingly focused on climate change, renewable resources and sustainable practices, this certificate equips students to tackle pressing environmental challenges. They gain expertise in areas such as solar and wind energy, urban sustainability and resource management. With the ability to analyze complex energy systems and policies, certificate holders become invaluable assets in driving sustainability initiatives forward. This combination of skills and knowledge makes graduates of the energy and sustainability program indispensable in shaping a greener and more sustainable future.

Students begin with an overview of how energy affects people's lives, the basic science and methods of energy production, and a full overview of energy policy options. Students may tailor the certificate around their specific interests in energy with a variety of electives representing a broad array of academic disciplines. The breadth of their energy knowledge is enriched by taking courses outside their primary area of study.

This program helps students enhance their understanding of the technology and infrastructure for generating, distributing and using energy; the associated sustainability issues; and the social and policy dimensions of energy systems.

At a glance

- **College/School:** [College of Global Futures](#)
- **Location:** [Downtown Phoenix](#), [Polytechnic](#), [Tempe](#)

Program requirements

[2024 - 2025 Certificate Map](#)

[Certificate Map \(Archives\)](#)

The certificate in energy and sustainability consists of 15 credit hours, at least 12 of which must be upper division.

Students must earn a grade of "C" or better in all courses. A minimum GPA of 2.50 is required for all courses completed in the certificate.

Required Core Courses -- 9 credit hours

[SOS 171 / GCU 171: The Thread of Energy \(G\)](#) (3)

[SOS 314: Basic Energy Science](#) or [SOS 324: Sustainable Energy Technology and Systems](#) (3)

[SOS 315: Energy Policy](#) (3)

Energy Elective Courses -- 6 credit hours

[BME 494: Bioenergy and Microbial Biotechnology](#) (3)

[CEE 361: Introduction to Environmental Engineering](#) (4)

[CHE 469: Air Quality Engineering](#) (3)

[CHE 473: Fuel Cells and Biofuel Cells](#) (3)

[CHE 478: Biomass Energy Conversion Technology](#) (3)

[CHM 494: Solar Energy Conversion](#) (3)

[CON 448: Sustainable Construction](#) (3)

[EEE 465: Photovoltaic Energy Conversion](#) (3)

[EEE 471: Power System Analysis](#) (3)

[EEE 498: Lithium-Ion Battery Technlgy Automtve Electrifactn](#) (3)

[EGR 476: Microgrid Design and Operation](#) (3)

[EVE 354: Materials in the Environment](#) (4)

[GCU 364: Energy in the Global Arena](#) (3)

[GCU 442: Geographical Analysis of Transportation \(SB\)](#) (3)

[GLG 304: Minerals, Energy, and Society](#) (3)

[JUS 332: Politics of Energy Policy and Justice](#) (3)

[JUS 444: Environment and Justice \(L & C\)](#) (3)

[MAE 494: Energy Efficiency](#) (3)

[PHY 498: The Science of Sustainable Energy](#) (3)

[PUP 430: Transportation Planning and the Environment](#) (3)

[SOS 323: Sustainable Urban Dynamics](#) (3)

[SOS 373: Minerals, Energy, and Society](#) (3)

[STS 317: Science, Technology, and Global Engagement \(SB & G\)](#) (3)

[STS 332: Global Issues in Science and Technology \(SB\)](#) (3)

394, 494 and 498 courses must be taken with the specific course title/topic indicated above.

Energy elective courses are not limited to courses from this list only. Other courses on energy may be offered (special topics, etc.). Students may request to have those approved as an elective for this certificate by submitting a College of Global Futures undergraduate standards petition: https://students.asu.edu/College_Standards_Petitions. Completed petitions may be submitted directly to cgfadvicing@asu.edu.

Some energy elective courses are more technical in nature, which may require additional math and science knowledge or prerequisites.

Prerequisite courses may be needed in order to complete the requirements of this certificate.

Enrollment requirements

Advising is not required, but students are encouraged to speak with an advisor by scheduling an appointment through the [College of Global Futures advising website](#).

A student pursuing an undergraduate certificate must be enrolled as a degree-seeking student at ASU. Undergraduate certificates are not awarded prior to the award of an undergraduate degree. A student already holding an undergraduate degree may pursue an undergraduate certificate as a nondegree-seeking graduate student.

Global opportunities

Global experience

With more than 300 [Global Education program opportunities](#) available, energy and sustainability students are able to tailor their experience to their specific interests and skill sets. Whether in a foreign country, in the U.S., or online, students build communication skills, learn to adapt and persevere, and are exposed to research and internships across the world, increasing their professional network.

Students also may participate in a School of Sustainability study abroad program. More information is available on the [College of Global Futures study abroad website](#).

Career opportunities

An understanding of energy is increasingly important for jobs related to climate change, environmental quality, urban sustainability and sustainable development. A certificate in energy and sustainability serves as a strategic career enhancement to any major degree program. This certificate provides a distinct advantage, positioning students competitively for an array of energy-related job opportunities across

sectors. Government agencies, utilities, non-profit organizations and private businesses all require professionals with the specialized knowledge and transdisciplinary skills acquired through this program.

Contact information

[Schedule an advisor appointment](#)

[School of Sustainability](#) | WCPH 4th floor

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