

SUSTAINABLE ENERGY DEVELOPMENT GRADUATE CREDIT CERTIFICATE PROGRAM

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|-------------------------|----------------|
| Person-in-Charge | Erich Schienke |
| Program Code | SED |
| Campus(es) | World Campus |

The Graduate Certificate in Sustainable Energy Development is tailored for professionals seeking to influence the future of energy through sustainable practices. Students will learn to conduct nuanced ethical analyses to weigh the pros and cons of various energy development pathways. Sustainability assessment forms a core part of the curriculum, enabling students to critically compare different energy resources. Students will develop a clear understanding of the sustainability profiles of various energy types, considering their environmental impacts, efficiency, and long-term viability. By gaining a comprehension of the ecosystem of energy development, students will also learn to identify and describe all relevant stakeholders in energy projects. This includes recognizing the roles, interests, and potential impacts on communities, governments, investors, and the environment. By completing the Graduate Certificate in Sustainable Energy Development, students will emerge as well-informed professionals capable of leading the transition towards more sustainable energy systems, grounded in ethical principles, sustainability, and stakeholder engagement.

Courses taken in the certificate program may be applied toward the Master of Professional Studies in Renewable Energy and Sustainability Systems (RESS) if the student has earned a B- or better in each course, subject to restrictions outlined in GCAC-309 Transfer Credit (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/transfer-credit/>). Certificate students who wish to have certificate courses applied towards the M.P.S. in RESS must apply and be admitted to that degree program. Admission to the RESS graduate degree program is a separate step and is not guaranteed.

Effective Semester: Spring 2025
Expiration Semester: Spring 2030

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<https://gradschool.psu.edu/graduate-admissions/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<https://gradschool.psu.edu/graduate-education-policies/>). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-305-admission-requirements-international-students/>) for more information.

Completed undergraduate degree from an accredited university/college. There is no formal process of review for applications.

Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/>).

Certificate students earn the certificate and 9 graduate credits by successfully completing each of the three required 3-credit, instructor-led online courses with a grade of B- or better. Students may petition the RESS program office if they wish to substitute one of the required course with another equally appropriate course.

| Code | Title | Credits |
|-------------------------|---|----------|
| Required Courses | | |
| BIOET 533 | Ethical Dimensions of Renewable Energy and Sustainability Systems | 3 |
| EME 444 | Global Energy Enterprise | 3 |
| EME 801 | Energy Markets, Policy, and Regulation | 3 |
| Total Credits | | 9 |

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Learning Outcomes

1. Students will be able to identify and explain fundamental market and non-market forces driving contemporary energy development.
2. Students will be able to conduct ethical analyses comparing different energy development pathways.
3. Students will be able to compare and explain the sustainability of different energy resources.
4. Students will be able to identify and describe all relevant stakeholders in energy development enterprises.