

ENERGY TRANSITION STRATEGIES GRADUATE CREDIT CERTIFICATE PROGRAM

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

This Graduate Certificate in Energy Transition Strategies is an advanced online program designed for those students seeking to play a pivotal role in the global shift towards sustainable energy solutions. This certificate equips students with the knowledge and skills to critically articulate the technical fundamentals underlying renewable energy systems and their significance within both local and global contexts of energy transitions. Central to the program is the development of competencies in performing thorough sustainability assessments of energy projects. Through the application of lifecycle, lifecycle cost, and systems analysis, students will gain the ability to evaluate the holistic sustainability of energy initiatives, considering economic, environmental, and social dimensions. This critical evaluation skill ensures that graduates can contribute to the development of energy projects that are not only technically feasible but also sustainable in the long term. The curriculum is also designed to foster students' understanding of the complex interconnections within the energy-water-food nexus as well as the intricate relationships between energy, climate, environment, and natural resources. This comprehensive approach enables students to grasp the environmental implications of energy choices and to advocate for and develop energy solutions that are in tandem with global climate objectives. Overall, the Graduate Certificate in Energy Transition Strategies prepares students to become forward-thinking leaders in the energy sector, capable of contributing to the advancement of sustainable energy solutions that respect the delicate balance of our planet's ecosystems and promote a sustainable future for all.

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/](https://gradschool.psu.edu/graduate-education-policies/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		
EGEE 401	Energy in a Changing World	3
EME 504	Foundations in Sustainability Systems	3
EME 802	Renewable and Sustainable Energy Systems	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 articulate technical fundamentals and determine the role of renewable energy systems in the context of local and global energy transition.
2. Students will be able to perform sustainability assessment of energy projects at the holistic level using lifecycle, lifecycle cost, and systems analysis.
3. Students will be able to explain and quantify the impacts of new energy solutions in the context of the energy-water-food nexus.
4. Students will develop a scientific understanding of energy relationships with global climate, environment, and natural resources.

Contact

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