

ENGINEERING

Graduate Program Head	Sven Bilén
Program Code	ENGR
Campus(es)	World Campus
Degrees Conferred	Doctor of Engineering (D.Eng.)
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=ENGR)

The Doctor of Engineering degree program in Engineering is a fully online program designed to meet the needs of working professionals who are interested in continuing their graduate studies with an applied research focus, enabling them to tackle research areas that are relevant to their industry's needs. The core D.Eng. objectives include enhancing technical engineering knowledge; developing research skills and applying research methods to an identified need within industry; and developing professional leadership competencies. To support these objectives, professional core coursework will include leadership theory and practice, product innovation and innovation management, project management, and engineering across cultures and nations. Students will select 15 technical elective credits in subject areas that support their research interests and in consultation with their advisor and committee. These technical electives will increase the student's engineering expertise and will form the foundation for their research pursuits. The program culminates with a praxis research project focused on applied research executed in an industry environment. Students will identify an industry problem and use applied research methods to develop a proposed solution and evaluation of the solution in meeting industry needs.

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/>).

To maintain a high-quality program, it is important that our students are also of a caliber to succeed. As such, the admission requirements for the students enrolling in the online program a similar to those of our resident Ph.D. students. Online students will only be accepted into the program with approval from the D.Eng. Admissions Committee. Within SEDI, the Admissions Committee (made up of COE Graduate Faculty) will provide recommendations to the Director of Graduate Studies on accepting students to the D.Eng. ENGR degree program. Admission decisions will also be based upon relevant work experience and recommendation letters. The following are additional specific requirements:

- It is expected that students have a Master of Science or Master of Engineering degree in a suitable engineering (or related technical) field from a U.S. regionally accredited institution or from an officially recognized degree-granting international institution.
- Grade-point average (4.0 scale) in master's program: Cumulative graduate GPA ≥ 3.0
- Three letters of reference (The letters should be solicited from professional colleagues and faculty who can attest to the applicant's ability). At least one reference should be from your employer indicating they support the praxis topic and specifying what resources you will have access to in support of the topic, e.g.,

allocated time, lab support, data. This reference letter would ideally come from the immediate or area supervisor of the applicant.

- A statement of purpose/goal statement that includes an overview of an identified problem to be examined as part of the required praxis research.
- A published or unpublished scientific paper, praxis, or other scholarly writing sample.
- A curriculum vitae or résumé.
- An interview (either in person or via internet-based video conferencing).

The language of instruction at Penn State is English. English proficiency test scores (TOEFL/IELTS) may be required for international applicants. 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.

Degree Requirements

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>).

A minimum of 45 credits at the 400, 500, or 800 level is required, with a minimum of 24 at the 500 or 800 level.

The D.Eng. program emphasizes scholarly applied research and helps students prepare for research and related careers in industry, government, and academe. Students must pass written and/or oral qualifying examinations. The D.Eng. program is quite flexible, with 15 prescribed course credits (9 credits from ENGR 501, ENGR 804, ENGR 405, and ENGR 802; 3 credits from ENGR 820; 3 credits from STAT 500, STAT 501, STAT 505, or STAT 510, or approved numerical methods/analysis course) and 15 technical elective course credits allowing the student to customize their program of study to meet their research interests. Students must also complete 15 research praxis credits (ENGR 810). The D.Eng. is awarded upon completion of a program of advanced study that includes the passing of comprehensive and final oral examinations as determined by the student's praxis committee, and a satisfactory praxis. A D.Eng. student must have 30 credits above a master's degree (i.e., 15 prescribed course credits and 15 technical elective course credits) before taking the comprehensive examination.

The D.Eng. program has a residency requirement that can be met by attending a 5 days on-campus residency or attending multiple shorter on-campus residencies that combined add to a minimum of 5 days. The D.Eng. program is a highly individualized program that takes into account the flexibility needs of its primarily non-traditional students and the unique relationship that student will have with their praxis advisor and committee. Hence, the residency requirement can be met in a number of methods, as long as the cumulative time on campus is at least 5 days. Tracking of residency days will be handled by the Graduate Program Support Assistant (GPSA) for the D.Eng. Program and communicated to the student. The D.Eng. Program will hold, on an annual basis (immediately prior to Fall semester), a 2-day D.Eng. orientation at University Park that will be offered to all students, but not required. It is expected that the remainder of the residency days will be obtained via other methods, e.g., visits to campus for research meetings with praxis faculty, students, and researchers; attendance in lab group meetings on campus; visits to attend on-campus workshops; and organized D.Eng. program-specific professional development activities that will be offered at least once per semester for those in the program and to the broader

community. Working with the GPSA, it is the student's responsibility to ensure progress toward completed residency days. This requirement must be satisfied prior to the semester in which the final oral examination is administered. The GPSA will also track successful accomplishment of other program milestones in order to certify completion of all D.Eng. degree requirements.

Minor

A graduate minor is available in any approved graduate major or dual-title program. The default requirements for a graduate minor are stated in Graduate Council policies listed under GCAC-600 Research Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>) and GCAC-700 Professional Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>), depending on the type of degree the student is pursuing:

- GCAC-611 Minor - Research Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-611-minor-research-doctorate/>)
- GCAC-641 Minor - Research Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-641-minor-research-masters/>)
- GCAC-709 Minor - Professional Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-709-professional-doctoral-minor/>)
- GCAC-741 Minor - Professional Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-741-masters-minor-professional/>)

Student Aid

World Campus students in graduate degree programs may be eligible for financial aid. Refer to the Tuition and Financial Aid section (<https://www.worldcampus.psu.edu/tuition-and-financial-aid/>) of the World Campus website for more information.

As a professional online degree program, tailored to the working professional, traditional graduate research or teaching assistantships are not available. It is expected that students in this program will be supported by their employer or self-paid. However, graduate students may be supported by a variety of government and industry fellowships, traineeships, and other research assistantships.

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.

Contact

Campus	World Campus
Graduate Program Head	Sven G Bilen
Director of Graduate Studies (DGS) or Professor-in-Charge (PIC)	Joanna F. DeFranco
Program Contact	Mariah L Germello 307 Engineering Design and Innovation Building University Park PA 16802 mld5449@psu.edu (814) 865-2771
Program Website	View (https://worldcampus.psu.edu/DEng/)