

PENN STATE | ONLINE

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PennState
World Campus

Engineering Master's
Degrees for Professionals

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Penn State has long been known for its high quality engineering programs. They consistently rank as some of the very best in the country. That distinction carries over to our online engineering degree programs, which have also earned national recognition.

By earning your engineering degree online through Penn State World Campus, you can expect to receive the same course work and quality instruction as in the resident programs. And you gain the flexibility of studying anytime, anywhere while you continue to meet your personal and professional commitments. You can even apply what you re learning to your current job.

As the global marketplace becomes more competitive, the need for highly educated engineers will grow as well. With Penn State s online engineering programs, you can be confident that the skills you gain will help you excel in the field and become a leader, not just in your organization but in your profession.

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Online Engineering Programs

► Master of Engineering in Systems Engineering

Preparing engineers to develop the next generation of engineering products, systems, and services for industry and government is one goal of the systems engineering program. The online courses for this degree emphasize the identification, modeling, simulation, analysis, and management of complex systems and processes.

► Master of Software Engineering

This software engineering program helps prepare professionals to develop software products and services for industries and governments. From design to development,

software engineers use their abilities with applications and systems software to create the elements that make engineered systems work.

► Master of Engineering Management

Many engineers, over time, may find they have become locked in technical roles with little or no ability to influence the direction or management of their companies. This degree can provide you with the knowledge and skills to span both operations and technology, giving you a competitive advantage not often found in industry.

Curriculum

Our interactive, collaborative online programs comprise far more than a textbook on a screen. You'll interact with fellow students and faculty through what we call a cohort approach, where you progress through the program with the same students. This creates an atmosphere for a richer student experience, building a dynamic professional network of colleagues.

Master of Engineering in Systems Engineering

The 36-credit Master of Engineering in Systems Engineering focuses on current topics related to all fields of engineering. You'll complete 12 courses in continuous, seven-week terms over two years.

Year 1 – Semester 1	Semester 2	Semester 3
SYSEN 510: Engineering Analysis I (3 credits)	SYSEN 505: Technical Project Management (3 credits)	SYSEN 522: Systems Verification Validation and Testing (3 credits)
SYSEN 550: Creativity and Problem Solving I (3 credits)	SYSEN 531: Probability Models and Simulation (3 credits)	SYSEN 533: Deterministic Models and Simulation (3 credits)
Year 2 – Semester 1	Semester 2	Semester 3
SYSEN 530: Systems Optimization (3 credits)	SYSEN 520: Systems Engineering (3 credits)	SWENG 587: Software Systems Architecture (3 credits)
SYSEN 536: Decision and Risk Analysis in Engineering (3 credits)	SWENG 586: Requirements Engineering (3 credits)	SYSEN 594: Master's Paper Research (3 credits)

NOTE: Course offerings may differ from what is outlined above, depending on what time of year you begin your degree program.

Master of Software Engineering

The Master of Software Engineering is a 36-credit degree program completed in continuous, seven-week terms over two years.

Year 1 – Semester 1	Semester 2	Semester 3
SWENG 586: Requirements Engineering (3 credits)	SWENG 585: Pattern Oriented Design (3 credits)	SWENG 587: Software Systems Architecture (3 credits)
SWENG 537: Software System Design (3 credits)	IN SC 521: Database Design Concepts (3 credits)	SWENG 568: Enterprise Integration (3 credits)
Year 2 – Semester 1	Semester 2	Semester 3
SWENG 826: Applied Human-Computer Interaction (3 credits)	IN SC 561: Web Security and Privacy (3 credits)	SWENG 505: Software Project Management (3 credits)
SWENG 861: Software Construction (3 credits)	SWENG 581: Software Testing (3 credits)	SWENG 500: Software Engineering Studio (3 credits)

NOTE: Course offerings may differ from what is outlined above, depending on what time of year you begin your degree program.

Master of Engineering Management

The 33-credit Master of Engineering Management degree program consists of 11 courses taken over six continuous semesters, in seven-week terms over two years.

Year 1 – Semester 1	Semester 2	Semester 3
ENGMT 501: Engineering Management Science (3 credits)	MNGMT 511: Organizational Behavior (3 credits)	ENGMT 510: Economics and Financial Studies for Engineers (3 credits)
S T S 589: Ethics and Values in Science and Technology (3 credits)	MNGMT 514: Organizational Innovation and New Venture Development (3 credits)	ENGMT 511: Engineering for Energy and the Environment (3 credits)
Year 2 – Semester 1	Semester 2	Semester 3
SYSEN 550: Creativity and Problem Solving I (3 credits)	SYSEN 536: Decision and Risk Analysis in Engineering (3 credits)	ENGMT 539: Engineering Management Strategy (3 credits)
SYSEN 552: Creativity and Problem Solving II (3 credits)	SYSEN 505: Technical Project Management (3 credits)	

NOTE: Course offerings may differ from what is outlined above, depending on what time of year you begin your degree program.

View courses and more:

worldcampus.psu.edu/onlineeng

Career Opportunities for Graduates

Where can your graduate engineering degree take you?

Virtually everything we do today involves engineering. As society becomes more complex, engineering will remain at the forefront of innovation and business. And a competitive global marketplace means more opportunities for properly trained engineering graduates with master's degrees.

The engineering programs at Penn State are designed to help you solve complex, real-world problems. You can be confident that the academic rigor of our courses can help prepare you for careers in engineering. Employers have long recognized and valued the quality of our programs, earning us a reputation for excellence.

Your Penn State master's degree in software engineering, systems engineering, or engineering management may qualify you for positions in a variety of fields, including:

- aerospace/defense
- telecommunications
- pharmaceuticals
- consumer products
- biomedical
- intelligence
- government
- finance
- insurance
- health care
- manufacturing

Enroll in one of Penn State's online engineering programs today, and take your career to the next level without ever having to set foot on campus.

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My experience as a Penn State World Campus student was incredible. For several years I had been searching for a graduate program that would provide me with the skills I needed to become an effective engineering manager. I was also searching for a program that would be convenient and accommodating to my schedule as an engineer with a full time job. I did not find a program that suited me until I discovered the Penn State World Campus Master of Engineering Management program.

*Marjorie Chiles
Master of Engineering Management*



Why Penn State?

Proven Leadership in Quality Online Delivery

Penn State is a leader in higher education and carries out its mission of teaching, research, and service with pride and focus on the future. Since our founding in 1855, Penn State has established itself as one of the most trusted and respected universities in the nation. Through education, research, and outreach, Penn State continues to respond to the changing economic and social needs of the Commonwealth, the nation, and the world. Our faculty and course designers develop our degrees and certificates specifically for the online adult learner, and you can expect high-quality courses that fit into your busy schedule, providing immediate value to your career.

► Excellence, Reputation, Scholarship

Penn State is regionally accredited by the Middle States Commission on Higher Education, with an outstanding reputation in research and teaching. The credits, transcripts, and diploma you earn with Penn State's online programs will be identical to those received from any Penn State campus.

► Library Services

Like any other Penn State student, you will have access to one of the leading university research libraries in North America—the Penn State University Libraries system—which holds more than 750 online research databases, 110,000 scholarly journals, and 44,000 electronic books.

► Military-Friendly University

Penn State has the experience you need to help you meet your goals during and after your military service to your country. Through our commitment to increasing access to education for military personnel, veterans, and military family members, we have aligned our online programs, student support services, policies, and procedures to address your unique needs.

"It's important to keep learning. I wanted a quality education that would make a difference in my career. And Penn State really sets itself apart in that regard."

—Neil Barnas
Master of Engineering in
Systems Engineering



Begin Your Application Today

Admissions decisions for the online engineering programs are based on a review of your complete application portfolio and the quality of your credentials, relative to those of other applicants.

To apply to one of these programs, you must include the following in your application portfolio:

- application form (completed and submitted online)
- TOEFL or IELTS scores, if applicable
- statement of intent
- résumé
- references
- two official transcripts from each undergraduate and graduate institution attended

Official GRE test scores will be considered if submitted, but are not required.



For the most up-to-date information about the programs, their requirements, and application procedures, please visit:

worldcampus.psu.edu/onlineeng

Did You Know?

- Penn State credits and degrees earned online are identical to those earned on campus.
- Penn State has enrolled students from all 50 states and 7 continents.
- Penn State awards one of the highest numbers of bachelor's degrees in engineering in the United States.
- Penn State's resident-instruction faculty who teach online are specifically trained to teach students in the online environment.

For More Information

Contact Us

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worldcampus.psu.edu

800-252-3592 (toll free within the United States)

814-865-5403 (local and international)

814-865-3290 Fax

Admissions Counseling Hours

8:00 a.m.–8:00 p.m. ET Monday–Thursday

8:00 a.m.–5:00 p.m. ET Friday

Closed Saturday and Sunday

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