



# Master of Science in Mechanical Engineering



**PennState**  
World Campus

**A world of possibilities.  
Online.**

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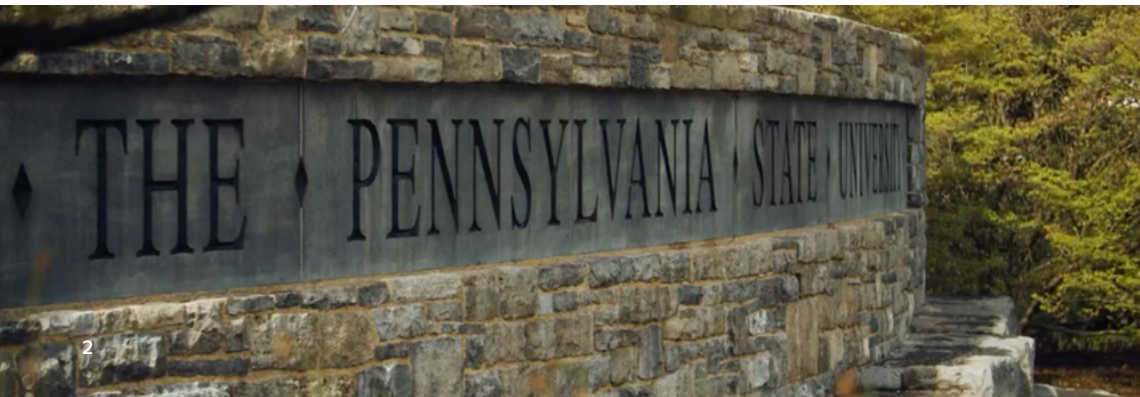
# Engineering at Penn State — a Tradition of Excellence

Penn State has deep roots in engineering education, having begun our mechanical engineering program with a bachelor's degree in 1886–87. The master's degree began to take shape in the 1930s and has evolved into a program now considered to be one of the best in the country.

Penn State's College of Engineering, in partnership with Penn State World Campus, is proud to bring the University's esteemed mechanical engineering graduate program to the online environment. Our goals have always been to deliver exceptional academic programs for our students — and for our graduates to succeed in the workforce, demonstrating that they are Penn State world-class engineers with practical experience.

Continuing your education in today's world of rapidly changing technology is more important than ever. In this program, you will be learning from faculty who are researching new technologies and who can help you achieve more success.

As you look to advance your career and take on new challenges, consider Penn State's Master of Science in Mechanical Engineering.



# Why Mechanical Engineering?

One of the largest disciplines in engineering, mechanical engineering is also one of the most versatile fields because of its breadth of application across numerous industries. Mechanical engineers often design, develop, and test new products. They may work on biomedical devices, propulsion and efficient combustion, manufacturing methods, and ways to meet future transportation needs. They are also on the cutting edge

of battery and energy storage technology and other innovations.

Penn State has some of the top mechanical engineering faculty in the country — and in the world — providing our graduate students with the resources to be an integral part of groundbreaking, future-changing research. By choosing the Master of Science in Mechanical Engineering (MSME), you are choosing to be at the forefront of technology in a constantly evolving field.

## Career Opportunities

As you gain new skills and confidence through your experiences in the program, you can begin to constructively influence your current work environment or pursue new career opportunities. While you interact with experienced faculty and peers from various organizations, you can develop your abilities and apply the knowledge and experience to a variety of career opportunities in fields such as:

- › aerospace and defense
- › automotive
- › biomedical design
- › consulting
- › dynamics and control
- › energy and power
- › manufacturing
- › refrigeration
- › robotics
- › transportation
- › warehousing and distribution
- › utilities



# Curriculum

Many of our students are working professionals who balance a host of other commitments. That's why we offer the MSME program entirely online through Penn State World Campus — to give you flexibility to study when it suits you without interrupting your career. And since mechanical engineers often work in highly technical fields, we have created an online course of study that is also technically strong.

The 32-credit program provides you with the opportunity to gain advanced knowledge of research, analysis, and design in mechanical engineering. You are required to successfully

complete 10 courses or a minimum of 30 course credits, along with two 1-credit courses of ME 590 Colloquium, a group of seminars consisting of lectures by faculty, students, or outside speakers.

The MSME has limited formal course requirements; you and your adviser can tailor the program specifically to suit your professional and educational goals. Other courses, including special interest courses, are offered based on demand and professor availability. Please visit the website for the most up-to-date offerings.

## Topics for Mechanical Engineering Include:

### **Thermal Sciences**

- › heat transfer
- › combustion
- › fluid mechanics
- › electrochemical engines

### **Mechanical Sciences**

- › systems and controls
- › dynamics, vibrations, and noise control
- › solid mechanics and mechanical design
- › additive manufacturing

## Independent Research Project

As part of the MSME requirements, you will conduct independent research under the mentorship of one of our faculty members. This research can support the faculty adviser's ongoing research or can be aligned with your

employer's goals. Before graduating, you will be required to write a paper suitable for publication in a professional journal or presentation at a national or international conference.

[worldcampus.psu.edu/mecheng](http://worldcampus.psu.edu/mecheng)

# The Penn State Difference

## Faculty Expertise

All of the courses in the online program are designed and taught by Penn State professors. The program's faculty are known for their exceptional credentials, research, and industry experience, which help them understand your academic needs and career interests.

## Learner and Technical Support

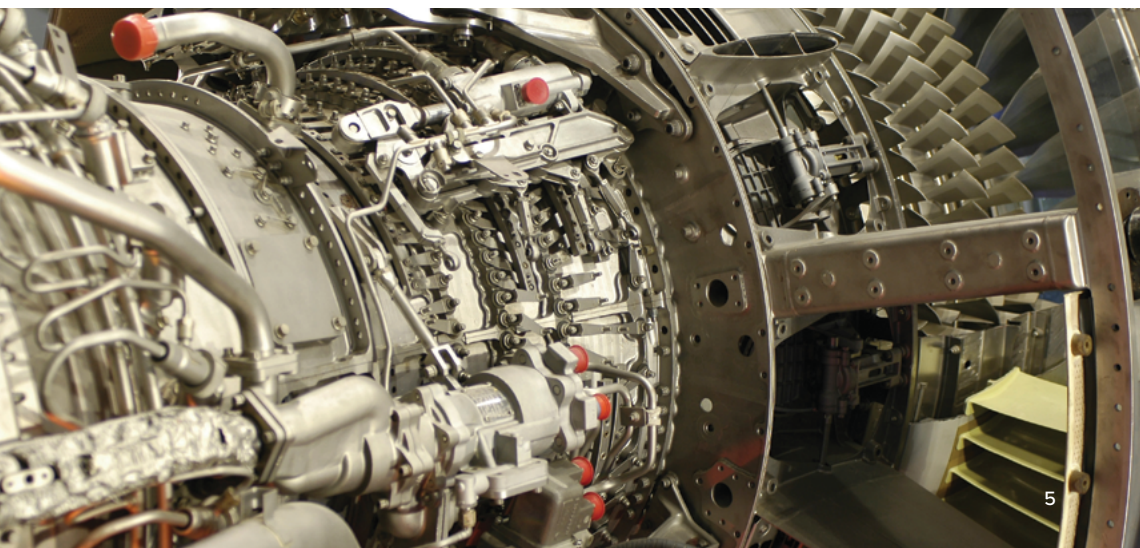
You will interact frequently with faculty and other students. Without having to set foot on campus, you will have access to many of the same support services that resident students enjoy, including advising, course scheduling assistance, library resources and databases, and technical support.

## Library Services

As a Penn State World Campus student, you will have access to one of the largest research library collections in North America — the Penn State University Libraries system, which holds more than 800 online research databases, 110,000 scholarly journals, and 1 million electronic books. You can search the online catalog and review databases as if you were sitting at a terminal in any Penn State Library.

## Networking Opportunities

Interact with dedicated, goal-oriented peers from around the world, creating a network of great ideas. As you communicate regularly with classmates and faculty members, you'll gain insights that you can apply to your job immediately.



# Frequently Asked Questions

## Is This the Real Penn State?

Absolutely. Penn State values online education as highly as it does resident instruction. No distinction will be made on your official Penn State transcript or degree that your courses were completed at a distance. The credits you receive are exactly the same as those awarded to on-campus students.

## Why is Penn State the Best Choice for Me?

### **Flexibility and convenience**

Penn State knows that adults need flexible and convenient learning options to continue meeting their professional and personal commitments. As job responsibilities grow increasingly complex and family schedules become more hectic, online education enables you to study at times and locations that are convenient for you.

### **Reputation**

Penn State is universally regarded as one of the finest educational institutions in the United States. Putting a Penn State degree or certificate on your résumé is a great way to prove to current and potential employers that you are a well-educated professional and broaden your career options.

### **Accreditation**

Penn State is accredited by the Middle States Commission on Higher Education and has an outstanding reputation as a research and teaching university. Our courses are also accepted by most other colleges and universities in fulfillment of their requirements.



# Begin Your Application Today

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

Your master's degree application portfolio must include:

- › online application form and fee
- › copy of official transcripts from each undergraduate and graduate institution attended
- › TOEFL or IELTS score, if applicable
- › three references
- › résumé
- › one- to two-page statement of purpose

To apply or for more information about these application materials and deadlines, visit:

**[worldcampus.psu.edu/mecheng](http://worldcampus.psu.edu/mecheng)**



## Did You Know?

- › Penn State credits and degrees earned online are identical to those earned on campus.
- › Penn State World Campus has enrolled students from all 50 states and all 7 continents.
- › Our online courses involve frequent interactions among students and faculty.



# Contact Us

## Admissions Questions

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worldcampus.psu.edu/admissions



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