



University of New Haven

BACHELOR OF SCIENCE

MECHANICAL ENGINEERING



The Accreditation That Adds Value to Your Degree

Our B.S. in Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

ABET accreditation is the trusted standard for employers around the world. With a degree from an ABET-accredited program, you and potential employers can be confident that your educational foundation is solid and that you can be a leader in innovation, emerging technologies, and in anticipating the welfare and safety needs of the public.

Sample Courses

- Product Design Lab
- Project Management and Engineering Economics
- Integrated Design and Manufacturing
- Robotics
- Instrumentation Laboratory
- Nondestructive Evaluation
- Computer-Aided Engineering
- Applied Thermodynamics
- Thermofluids Laboratory
- Solar Energy
- Energy Efficiency in Buildings
- Mechanics of Materials
- Turbomachinery

Program Description

As the world confronts life's grand challenges, such as the need for alternative energy sources, or as we prepare for next frontiers in space, it is mechanical engineers who will be on the front lines in solving important problems. To that end, our B.S. in Mechanical Engineering program offers three-pronged education – theoretical, computational, and experimental foundation in science and engineering – and encompasses fields such as product design, dynamics, thermodynamics, incompressible fluids, and heat transfer while incorporating hands-on lab experiences and a capstone senior design course.



You will start by building a multidisciplinary foundation. In your first two years, you will take courses with students from different engineering disciplines so that you can see how mechanical, chemical, civil, and electrical engineering have concepts in common with each other, as you also explore what's unique to each discipline. At the same time, you will start to focus your studies with courses that are specific to mechanical engineering. Want to sharpen your focus even further? You can add one of four distinct focus areas: Mechatronics, Renewable Energy, Biomedical Engineering, or Systems Engineering.

As the curriculum unfolds, you will spend more and more time with hands-on projects in our five instructional laboratories: the Instrumentation Laboratory, the Structures and Mechanics Laboratory, the Thermo/Fluids Laboratory, the Makerspace, and Machine Shop.

An internship is a critical component of the program as well. In fact, it's a requirement. One impossible-to-ignore reason? Engineering employers show a consistent preference for hiring graduates who have had work experience before graduating.

Active, Hands-On Learning

Because experience-based learning is a hallmark of the University of New Haven, the opportunities for students to discover an interest in a field and gain experience in it are endless here. Engineering students at the University are especially fortunate to have many opportunities that sow the seeds for successful careers. These are some of the best:

Faculty-Mentored Research

Undergraduate students in many engineering colleges have to wait until graduate school for the golden opportunity to collaborate with an instructor on research. Our undergraduate students routinely work with instructors on projects, both during the semester and through our Summer Undergraduate Research Fellowship (SURF) program. Students have worked on research projects funded by the U.S. Department of Energy, Department of Defense, EnergizeCT, and United Illuminating. Students often make professional-grade presentations on their work at conferences throughout the country.

3 Day Startups

These intensive weekends start on Friday and end on Sunday night. Teams of students brainstorm ideas for a product to market, research its potential, put together a presentation, and then pitch their idea to a panel of angel investors, who may offer financial backing. After blunt feedback from the panel, students regroup, work out any kinks in the concept, and make their final presentation Sunday night. The experience can be life-changing. Students go into it excited but a bit nervous about what to expect and come out of it with a new level of maturity and professional polish.

Study Abroad

Traditionally, engineering students have not been able to study abroad because of their demanding curriculum, which doesn't easily lend itself to interruption. We believe, however, that engineering students should have the opportunity to study in a foreign country, which is especially important in a global market. So, we found a way: first year, when all engineering students take the same basic courses. Our students spend a glorious semester at our Prato, Italy, campus, situated in the birthplace of the Italian Renaissance, where engineers were the first artists. (Think the Duomo in Florence, a feat only an engineer could achieve.)

Senior Design Expo

This is an opportunity for students to showcase the results from their senior design course. Students work in teams to create a specific design solution for a customer, in collaboration with the industry partners that sponsor the projects. Project ideas are frequently suggested by the companies, which pose problems that are of relevance to them and are in need of a solution. Sponsoring companies have included: Sikorsky Aircraft, VITEC Videocom, Timex Corporation, Whelen Engineering, RBC Bearing Company, Hamilton Sundstrand, Covidien, Henkel, and Otis, among many others.

Faculty Spotlight

MARIA-ISABEL CARNASCIALI

Associate Professor

Ph.D. in Mechanical Engineering,
Georgia Tech

B.S. in Mechanical Engineering/
Physics, MIT



"I chose to work at the University of New Haven because it afforded me the possibility of teaching small classes, where I could get to know my students. I also liked that I could teach student-centered, active learning classes, involve students in my research, and coordinate opportunities, such as field trips and on-campus events, that help them get the most out of their time here. As an advisor, I serve as a resource to students and help guide them through their time at the University. Students often don't realize that we are there to help with more than just which classes to sign up for the following semester. I enjoy having conversations with my advisees about what they want to do with their degrees. Is grad school something they should consider? Does their résumé represent their best? And — this is one of the most difficult conversations — is engineering really for them?"

RAVI GORTHALA

Associate Professor

Ph.D. in Engineering Science
(Mechanical Engineering),
University of Mississippi

M.S. in Engineering Science
(Mechanical Engineering), University of Mississippi

B.E. in Mechanical Engineering, University of Madras, India



"My philosophy stems from an age-old Chinese aphorism: 'We hear, and we forget; we see, and we remember; we do, and we understand.' I am a true believer in hands-on, design/build, and project-based teaching in the context of theory, so I bring real-world technologies and applications to the classroom. The hands-on experience our students get here sets this university apart. Engineering students at the undergraduate level don't get this degree of hands-on experience at very many places. Ours are actually building next-generation technology. They not only do the conceptualizing and designing but also the machining, welding — basically everything that goes into making a product. There is also a strong emphasis here on instilling an entrepreneurial mindset in our engineering students. An engineer with such a mindset can be incredibly valuable to any type of organization. I'm proud of the fact that one of my teams has formed a start-up company to commercialize the solar-energy technology we developed."

Alumni Spotlight



ETHAN MAKUCK

B.S. in Mechanical Engineering '16

Manufacturing Engineer,
Gear Department
Sikorsky Aircraft Corporation

"The University of New Haven taught me to work with nearly any type of person and skill level on many projects related to my field. The environment at the University exposes students to a wide variety of people, but after a while it becomes close enough for relationships and teams to build — similar to that of a professional work environment.

"In particular, I think the team that was generated for my senior design project was really valuable because we spent many hours together working on a challenging and memorable industry-based project. Close relationships are also built between students and faculty, which helps create a top-notch educational experience. Because of the school's size, the faculty and staff are sized accordingly, allowing students to really get to know them. This allows for opportunities and close understandings between students and the faculty and staff, which is a unique benefit of the University."



CAROLINA RAMIREZ-BLIER

B.S. Mechanical Engineering '09

Program Manager,
Blades Engineering Department
Sikorsky Aircraft Corporation

"The University of New Haven not only has the core technical classes — taught by the most talented professors I ever had the pleasure of knowing — but as part of the engineering applied science curriculum, I was exposed to project management, teamwork, and presentation and communication techniques that, to this day, I use on a daily basis. When you graduate from college, you are competing with many people who are all equally prepared to solve the same problems. As a University of New Haven graduate, I was fortunate to be able to continue to work at Sikorsky while attending school. My senior project was also sponsored by Sikorsky, and being exposed to hands-on, real work experience and seeing the direct application of what I was learning in class was priceless. This alone made me stand out among my peers."

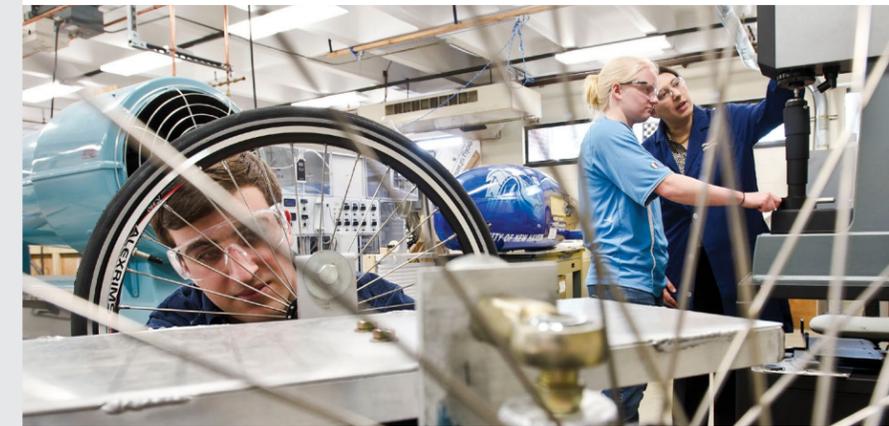
Internships

Students can obtain a wealth of knowledge from books, lectures, and guest speakers; however, a more complete knowledge can be acquired by having students enter the workforce and assume responsibilities.

The University of New Haven considers internships to be a critical component of the educational process. We strive to match your internship to the most appropriate work environment. We understand that all three parties in the internship relationship — the University of New Haven, the student, and the internship location — need to devote significant time to make it work. This balancing act, when achieved, results in a quality internship that can lead to developing a strong future employee.

These are just some of the high-profile locations at which University of New Haven mechanical engineering students have interned:

- Sikorsky Aircraft
Stratford, Conn.
- NASA
Greenbelt, Md.
- General Dynamics
Electric Boat
Groton, Conn.
- Proton OnSite
Wallingford, Conn.
- Stanley Engineering
Danbury, Conn.
- Colt Manufacturing
West Hartford, Conn.
- The Lee Company
Westbrook, Conn.
- Pratt & Whitney
East Hartford, Conn.
- GE Aviation
Manchester, Conn.
- Waterbury Generation
Waterbury, Conn.
- The Siemon Company
Watertown, Conn.
- IDEX Corporation
Bristol, Conn.
- IBM Corporation
New York
- Schindler Elevator
New Jersey
- Medtronic
North Haven, Conn.



Did You Know?

76% of employers indicate their primary purpose for sponsoring interns is to recruit entry-level talent.

83% of employers report higher retention rates for new hires with internship experience versus those with no experience.



6 Reasons to Choose the University of New Haven for Mechanical Engineering

- 1** To be competitive in an ever-changing world, engineers need a solid technical foundation layered with professional skills, communication skills, and an entrepreneurial mind-set to help them get ahead and succeed. Our students get such training to be successful engineers. They will see, embedded in their classes and extracurricular opportunities, emphasis on developing and practicing their curiosity, ability to make connections, and the essence of creating value.
- 2** You will have the opportunity to engage in undergraduate research – and collaborate with faculty on projects. In addition, you can compete in national competitions such as Race to Zero, Wind Collegiate Competition, and Super Mileage Car, as well as participate in the International Service Learning project.
- 3** Our mechanical engineering majors can specialize in mechatronics, renewable energy, biomedical engineering, or systems engineering and study a range of topics that include fluids, energy, design, heat transfer, numerical analysis and computers, aerospace sciences, and control systems.
- 4** Our multidisciplinary, industry-sponsored senior design projects will help you gain real-world experience, acquire connections, and build a strong portfolio – all before you graduate.
- 5** Our students find high-paying full-time employment in areas such as aerospace, automotive, manufacturing, biomedical, material science, energy systems, and more.
- 6** You can be part of our Engineering Enhanced Learning Community in your first year. You will live with other engineering students, take similar courses, meet with faculty mentors throughout the year, and participate in special group activities.

About Us

The University of New Haven, founded on the Yale campus in 1920, is a private, coeducational university situated on the coast of southern New England. It's a diverse and vibrant community of more than 7,000 students with campuses across the country and around the world.

Within our colleges and schools, students immerse themselves in a transformative, career-focused education across the liberal arts and sciences, fine arts, business, healthcare and health sciences, engineering, public safety, and public service. More than 100 academic programs are offered, all grounded in a long-standing commitment to collaborative, interdisciplinary, project-based learning.

At the University of New Haven, the experience of learning is both personal and pragmatic, guided by a distinguished faculty who care deeply about individual student success. As leaders in their fields, faculty provide the inspiration and recognition needed for students to fulfill their potential and succeed at whatever they choose to do.



Your Success Starts Here

**For more information,
or to arrange a visit, contact**

Office of Undergraduate Admissions

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👉 newhaven.edu