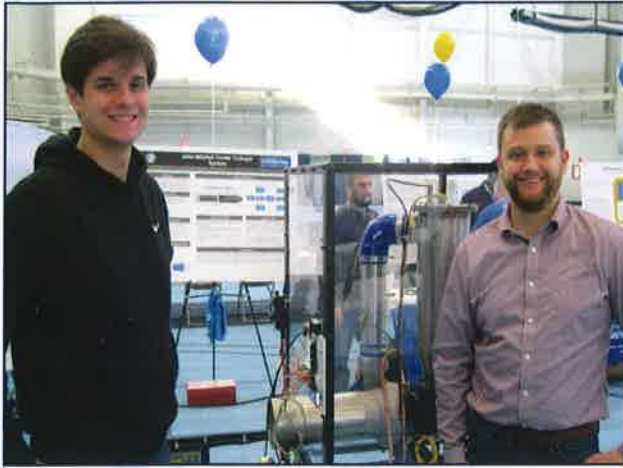


## Mechanical Engineering



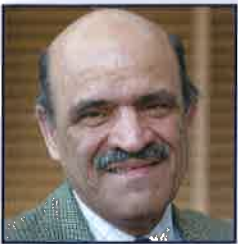
*Ryker Turcotte (left) and Dave Stevens proudly present their capstone project.*

The University of Southern Maine's (USM) Bachelor of Science in Mechanical Engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET (Accreditation Board for Engineering and Technology). It has strong connections with the local industry, which provides substantial internship and employment opportunities for its students and graduates. Together with mechanical engineering courses, students take several electrical engineering courses that provide them with the skills they need in interdisciplinary projects. Our graduates are prepared to excel as engineers in technologically intensive environments, succeed in post-baccalaureate and graduate studies, transfer their acquired skills to a variety of contexts and endeavors, and contribute to society as broadly educated, articulate, and ethical professionals and citizens. The program has small classes taught by experienced and dedicated faculty, and its curriculum features extensive laboratory, computer simulation, and manufacturing experiences.

### PROGRAM HIGHLIGHTS

- **INTERNSHIPS** - Our location in southern Maine provides excellent opportunities for internships at local engineering firms, such as Pratt & Whitney, Texas Instruments, Bath Iron Works, IDEXX Laboratories, Lanco Assembly Systems, and Portsmouth Naval Shipyard. Many students start their professional life by working as interns in these companies and are hired as full-time engineers after graduation.
- **INDUSTRY CONNECTIONS** - The Mechanical Engineering program has developed strong ties with local companies and benefits from a fully engaged Engineering Advisory Board. The engineer-in-residence program, in which an engineer from a local engineering firm spends one afternoon per week in the department engaged in various activities, provides an excellent resource to students and supports informal career advising.
- **HANDS-ON LEARNING** - The program encourages hands-on exploration of the learning environment and incorporates this exploration in most of its courses. The percentage of courses that require an open-ended design component is greater than that of many similar programs.
- **STUDENTS** - The department hosts several student-run extracurricular groups, such as the Engineering Student Committee (ESC), which includes IEEE, ASME student chapters, and Women in STEM. USM's Engineers Without Borders (EWB) student chapter recently installed five solar water heaters for an orphanage in Guatemala.

### FEATURED FACULTY



**Mehrdaad Ghorashi, PE, Ph.D.**  
Associate Professor  
Carleton University, Ph.D.  
Sharif University of Technology, B.Sc., M.Sc., Ph.D.  
Institute for Research in Planning and  
Development, M.Sc.

*Dr. Ghorashi is a Professional Engineer (P.E.) and a member of the American Society of Mechanical Engineers (ASME). He is also a certified Program Evaluator (PEV) for the Accreditation Board of Engineering and Technology (ABET) on behalf of the ASME. He is the author of the book Statics and Rotational Dynamics of Composite Beams, published by Springer International Publishing AG, Switzerland in 2016.*

### FEATURED ALUMNI



**Corey L. Letourneau, '16**  
Manufacturing Engineer, Pratt & Whitney

*"It took me until my mid 20's to figure out that I wanted to be an engineer. I'm happy to say that since I made that decision, I haven't had one moment of doubt that I chose the right path, at the right school. USM, unlike other schools, is quite adept at dealing with non-traditional students, which makes us feel more welcome than at schools that are predominately traditional. None of the other schools I was considering spent the time to explain their program, or address all the unique needs that come from someone trying to balance life while getting an education, quite the same way that USM Engineering did."*

## **SCHOLARSHIPS**

At USM, we provide scholarship aid to support our students, including first-year applicants, transfer students, continuing undergraduates, graduate students, and returning adults.

For information about scholarships offered at the University of Southern Maine, please visit [usm.maine.edu/scholarships](http://usm.maine.edu/scholarships)

## **FINANCIAL AID**

Financial Aid is an essential element for keeping costs low while pursuing your college degree. Financial Aid is composed of a number of different programs designed to help you manage your costs and often reduce the price of your degree program. Please contact our knowledgeable Student Financial Services staff to help build a plan that works best for you and your family.

Email: [usm.finaid@maine.edu](mailto:usm.finaid@maine.edu) Phone: 207-780-5250

## **RESEARCH**

Students at USM have multiple opportunities to work closely with faculty and other students to go beyond the classroom to real-world learning experiences. Our experienced research faculty and staff take pride in our collaborative partnering with organizations and communities throughout the nation.

Learn more: [usm.maine.edu/research](http://usm.maine.edu/research)

## **CAREER & EMPLOYMENT HUB**

The Career & Employment Hub at USM gives students the opportunity to gain experience in the field, explore career directions, develop global citizenship skills, and give back to the community with a focus on career education and professional development for students and alumni.

Develop the skills, knowledge, and experiences needed to begin a successful career. Whether you need help with resume writing, interviewing skills, finding a job, networking, or have any other questions that you would like to discuss with a USM Career Advisor, please visit [usm.maine.edu/careers](http://usm.maine.edu/careers) or send an email to [usmcareers@maine.edu](mailto:usmcareers@maine.edu).

## **CONTACT INFORMATION**

For application assistance:

**Office of Admissions**  
(207) 780-5670  
[admitusm@maine.edu](mailto:admitusm@maine.edu)  
[usm.maine.edu/admit](http://usm.maine.edu/admit)

For more information about the Mechanical Engineering program contact:

(207) 780-5287  
[usmengineering@maine.edu](mailto:usmengineering@maine.edu)  
[usm.maine.edu/engineering](http://usm.maine.edu/engineering)

The University of Southern Maine is an equal opportunity/affirmative action institution.

## **SAMPLE COURSE OFFERINGS**

These courses may be subject to change. For an up-to-date listing of core courses and additional courses, visit [usm.maine.edu/catalogs](http://usm.maine.edu/catalogs).

### **MEE 150 Applied Mechanics – Statics**

Equilibrium of particles, moment of a force, couple, equilibrium of rigid bodies, centroid and center of mass, analyzing trusses, frames and machines, shear force and bending moment in beams, dry friction, wedges, area moment of inertia, parallel axis theorem, mass moment of inertia, Mohr's circle for moments of inertia, method of virtual work.

### **MEE 230 Thermodynamics I: Laws and Properties**

Basic concepts and definitions; thermodynamic properties of gases, vapors, and gas-vapor mixtures; energy and energy transformations; the first and second laws of thermodynamics; first and second law applied to systems and control volumes; thermodynamic properties of systems.

### **MEE 372 Computer-aided Design of Machine Elements**

Elements of mechanical engineering design, introduction to computer aided drafting, stress analysis, deflection and stiffness analysis, Castigliano's theorem, Euler buckling, static failure criteria, fatigue failure criteria, design of shafts and bearings, limits and fits, critical speed of shafts, detachable and permanent joints and springs. Design is performed by available formulas and standards as well as computer-aided design by simulation software. Includes a student design project.

## **ACCELERATED GRADUATE PATHWAY**

### **Master's in Statistics (MS)**

### **Master's in Business Administration (MBA)**

For highly motivated undergraduate students who are already looking ahead to graduate school, USM offers a number of Accelerated Graduate Pathways that allow you to begin graduate study while completing your bachelor's degree, saving you time and money—which means you'll be ready for a career that much sooner, with your bachelor's and graduate degrees in hand.

## **CONCENTRATIONS, MINORS & CERTIFICATES**

Minor in Mechanical Engineering

**Apply Now**  
[usm.maine.edu/apply](http://usm.maine.edu/apply)

The University of Southern Maine is a member of The Common Application. Apply at [commonapp.org](http://commonapp.org)