

Why major in Mechanical Engineering?

- >> Global awareness
- >> Creative solutions
- >> Connect science to reality
- >> Shape the future
- >> Sustainable energy
- >> Improve human health
- >> National security

Mechanical engineering is one of the oldest engineering programs at the University of Delaware. Tracing its roots back to 1891, with the first degrees awarded in 1895, the Mechanical Engineering Program is accredited by the Engineering Accreditation Commission of ABET (www.abet.org). Courses are taught by faculty committed to academic excellence that leads students toward rewarding careers in today's global arena.

Endless career opportunities

BIOMEDICAL ENGINEERING: Be a leader in solving biomedical problems. The human body is a mechanical system that contains fluid flow, structural mechanics and evolving components—all central concepts in mechanical engineering.

CLEAN ENERGY: Develop new, clean and sustainable energy sources through novel energy conversion techniques, alternative energy storage methods and fuel-efficient vehicles, among other traditional methods of energy conversion.

CLEAN ENVIRONMENT: Reduce pollution through understanding transport and transformation of pollutants using mechanical engineering fundamentals such as fluid mechanics.

DESIGN: Link fundamental science to engineering solutions by identifying human needs and leveraging science to create new products that can shape a better world.

MATERIALS: Understand how materials respond, then use this information to optimally design everything from airplanes to artificial joint replacements using composite and advanced materials, nanotechnology and creative ingenuity.

ROBOTICS AND CONTROL: Construct sophisticated robotic devices that, via advanced control systems, help humans in a multitude of situations, such as manufacturing plants, rescue squads, military operations and rehabilitation devices.

*Discover what makes
UD mechanical engineering
so unique.*



Why UD Mechanical Engineering?



Senior Design

One of the hallmarks of our program is **Senior Design**—the culminating course for graduating mechanical engineering majors. This capstone course allows students to explore and solve real-world engineering challenges for business, industry and government sponsors.

Kyle Randall calls senior design “a gratifying experience”—one that enabled his team to transform an idea into an actual working prototype.

“For the first time, my contributions and ideas are real and may have an effect on the real world,” reflects Randall.

Randall’s team designed an easy-to-use syringe adaptor for a local pharmaceutical company. The novel design eliminates errors and damage caused during use by ensuring the appropriate angle and depth of the needle during intradermal injections.

With a degree in mechanical engineering, you will find work in many industries such as aerospace, automotive, biomedical engineering, consulting, manufacturing, petroleum engineering, structural engineering, and thermal and mechanical design. Or, maybe open your own business! Because mechanical engineers have such broad exposure to fundamental engineering science and design, they are also frequently drawn into business, finance or law.

What can I expect?

The Bachelor of Mechanical Engineering degree offers students a varied curriculum that includes minors, concentrations and technical electives to meet their individual needs and interests.

Undergraduate research is a key component of our challenging program that prepares you to pursue advanced degrees. Students are valued members of the faculty-led research team, often working as research assistants for pay or independent study credit.

Areas of departmental research include:

- Biomedical engineering
- Clean energy and environment
- Composites and advanced materials
- Fluid mechanics
- Nanomaterials and nanotechnology
- Robotics and controls
- Solid mechanics

Should I consider a minor?

A minor is a small set of courses in a subspecialty that differs from your major. Minors normally require completion of five to seven courses in the subject area. Students may double-count courses for credit against both majors and minors. If electives are chosen carefully, minors can easily be integrated into the program requirements. Nearly half of all engineering students have at least one minor, many have two or three.

Our most popular minors are:

- Biomedical engineering
- Chemistry
- Economics
- Environmental engineering
- Materials science
- Mathematics
- Nanoscale materials
- Physics
- Sustainable energy technology

What happens after graduation?

Studying engineering equips students with valuable analytical, problem-solving and quantitative skills that can be applied in many different careers. Bachelor of Mechanical Engineering graduates often:

70–80%

Choose employment in private industry, government laboratories and agencies and non-profit research centers

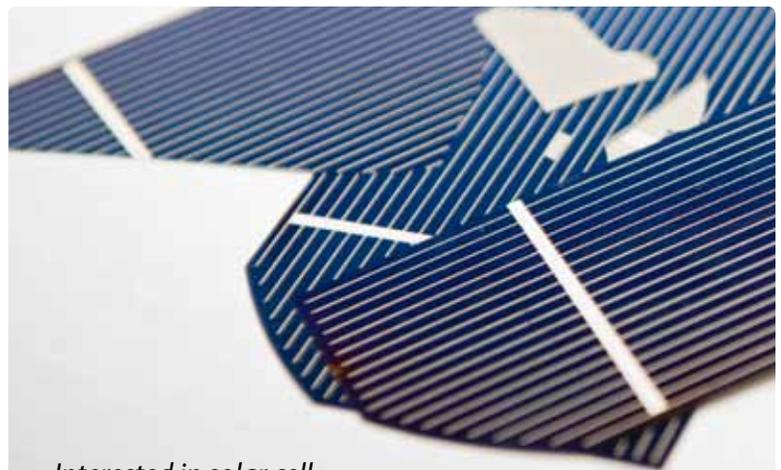
15–25%

Continue education toward a master's or Ph.D. degree*

5–10%

Attend medical, law, architecture or business school

** Students who earn Ph.D. degrees in engineering usually pursue careers in advanced research or as faculty members in colleges of engineering.*



Interested in solar cell research? UD's got it.

To learn more, visit www.me.udel.edu/Research/Undergrad/undergrad.html

What are breadth requirements?

The College of Engineering encourages students to be well-rounded; therefore your degree includes self-selected humanities and social science courses. The required 21 credits of breadth coursework includes:

- 18 credits of humanities and social sciences
- 3 credits of chemistry, math or physics

Please note:

- 3 of the above credits must also satisfy the Multicultural Requirement (*University requirement*)
- 6 credits must be above the introductory level (*College requirement*)
- Already completed Advanced Placement (AP) credit may apply toward these requirements

What about advanced degrees?

Well-qualified mechanical engineering majors can earn a Bachelor of Mechanical Engineering (BME) and a Master of Mechanical Engineering (MEM) degree within five years through the department's 4+1 BME/MEM program. This program is limited to UD undergraduates pursuing the BME degree, with a minimum GPA of 3.3 (on a 4.0 scale) at the time of application.

For more information visit www.me.udel.edu/Academics/degrees_offered.html or call 302-831-2421.

Mechanical Engineering Curriculum

Fall			Spring		
First Year			First Year		
COURSE #	COURSE DESCRIPTION	CREDITS	COURSE #	COURSE DESCRIPTION	CREDITS
EGGG 101	Introduction to Engineering (FYE)	2	MEEG 112	Statics	3
CHEM 103	General Chemistry I	4	PHYS 207	Fundamentals of Physics I	4
MATH 241	Analytic Geometry & Calculus A	4	MATH 242	Analytic Geometry & Calculus B	4
CISC 106	General Computer Science for Engineers	3		Breadth Requirement Elective 1*	3
ENGL 110	Critical Reading and Writing	3			14
		16			
Second Year			Second Year		
COURSE #	COURSE DESCRIPTION	CREDITS	COURSE #	COURSE DESCRIPTION	CREDITS
MEEG 211	Dynamics	3	MEEG 202	Computer-Aided Engineering Design	3
MEEG 215	Mechanics of Solids	4	MSEG 302	Materials Science for Engineers	3
MATH 243	Analytic Geometry & Calculus C	4	MATH 352	Engineering Mathematics II	3
MATH 351	Engineering Mathematics I	3	MATH 353	Engineering Mathematics III	3
	Breadth Requirement Elective 2	3	PHYS 245	Introduction to Electricity and Electronics	4
		17			16
Third Year			Third Year		
COURSE #	COURSE DESCRIPTION	CREDITS	COURSE #	COURSE DESCRIPTION	CREDITS
MEEG 301	Machine Design-Kinematics and Kinetics	3	MEEG 304	Machine Design-Elements	3
MEEG 311	Vibration and Control	4	MEEG 332	Fluid Mechanics II	3
MEEG 321	Materials Engineering	3	MEEG 342	Heat Transfer	3
MEEG 331	Fluid Mechanics I	4	MEEG 346	Thermal Lab	1
MEEG 341	Thermodynamics	3		Basic Science Elective	3
		17		Breadth Requirement Elective 3	3
					16
Fourth Year			Fourth Year		
COURSE #	COURSE DESCRIPTION	CREDITS	COURSE #	COURSE DESCRIPTION	CREDITS
MEEG 401	Senior Design (DLE)	6		Technical Elective 3	3
	Technical Elective I	3		Technical Elective 4	3
	Technical Elective 2	3		Breadth Requirement Elective 5	3
	Breadth Requirement Elective 4	3		Breadth Requirement Elective 6	3
		15			12
TOTAL CREDIT HOURS: 123					