

Engineering is a profoundly creative activity. From new cancer treatments to protecting the environment, engineers bring ideas to life. Dayton Engineers.



If you want to make a difference in the world, be an engineer. If you want to make a positive difference, become a University of Dayton engineer. UD engineers not only gain the technical skills to solve some of society's biggest problems, they understand how their skills can be used to help people and our planet.

We call it engineering that matters. At UD, we strive to develop engineers who are socially and globally aware, understand business and entrepreneurship, are prepared to take on leadership roles and are conscious of the consequences of their work—to society, the environment and the profession.

We believe it matters that cars get better gas mileage and pollute less. It matters that the medicines you take are both effective and safe. It matters that people in developing countries have access to clean water and resources such as solar power.

For more than 100 years we have been providing a great technical education here at the University of Dayton. However, what really sets UD's School of Engineering apart is our focus on educating the whole person in the Catholic Marianist tradition that values collaboration, community-engaged learning and adaption to change. We offer a comprehensive course of study that includes the humanities and social sciences, in addition to engineering.

Minors, Concentrations and Graduate Work

At the University of Dayton our philosophy is to provide a broad undergraduate education in one field of study with the opportunity to explore areas of specialized interest through minors, program concentrations and certificate programs. Minors such as bioengineering, human movement in biomechanics, quality assurance, energy systems, environmental, aerospace and integrated arts and technology are popular choices. Students can even minor in subjects outside of engineering, such as entrepreneurship, to further connect with their passions and interests. Within a program of study, such as mechanical engineering, students can take a concentration of classes in an area of interest such as aerospace engineering or robotics. Certificates, like the Institute of Applied Creativity for Transformation (IACT) certificate in applied creativity, allow engineering students to gain valuable workplace skills.

At the master's level, students then specialize in a particular field of interest. The School of Engineering offers 14 masters' level programs, five bachelor's plus master's programs and five PhD programs in aerospace, electrical, electro-optics, materials and mechanical engineering. The UD bachelor's plus master's program includes scholarships and special pricing, making a master's degree achievable with just two extra semesters of study for students choosing a non-thesis option.

To learn more about all majors and minors, visit go.udayton.edu/ENGRmajorsandminors.

Undergraduate Engineering Minors

Aerospace Engineering (AAE)

Automotive Systems (AST)

Bioengineering (BIE)

Chemical Processing (CHP)

Composite Materials Engineering (CMA)

Computer Systems (COS)

Electronic and Computer Engineering Technology (ECT)

Energy Production Engineering (EPE)

Engineering Management (ENM)

Engineering Mechanics (EME)

Engineering Technology (EGT)

Environmental Engineering (EVE)

Global Manufacturing Systems Engineering Technology (GMT)

Human Movements Biomechanics (HMB)

Industrial Automation and Applied Robotic Systems (ARS)

Industrial Engineering Technology (IET)

Integrated Arts and Technology (IAT)

Materials Engineering (MAT)

Mechanical Engineering Technology (MCT)

Operations Engineering (OPE)

Polymer Materials (PME)

Quality Assurance (QUA)

Robotic Systems (RBS)

Signals and Systems (SAS)

Structures (STR)

Sustainable Manufacturing (SMF)

Transportation Engineering (TRE)

Water Resources Engineering (WRE)

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University of Dayton
School of
Engineering

ENGINEERING THAT MATTERS

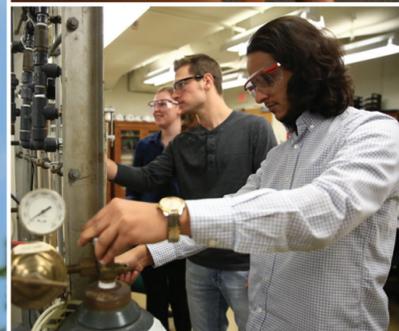
Ignite. Innovate. Transform.



Undergraduate Majors

The School of Engineering offers nine undergraduate majors in engineering and engineering technology. If you are unsure of what you want to do in engineering, our **Discover Engineering** and **Discover Engineering Technology** programs allow you to take foundational courses for a year while exploring engineering options.

While all engineering degrees are rigorous in that they require a solid knowledge of math and science principles, engineering is about translating that knowledge in practical ways to creatively solve problems and address the biggest challenges of our society. Engineers design products and systems that ensure our health, happiness and safety. While no one knows what the future will bring, its a sure bet engineers will play a major role in shaping that future.



Engineering Majors

Chemical Engineering

Chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, food processing, specialty chemicals, microelectronics, electronic and advanced materials, polymers, business services, biotechnology, and environmental health and safety industries, among others. Using their technical knowledge, particularly of chemistry, chemical engineers do everything from addressing environmental pollution to designing clothing fibers to ensuring drugs are produced safely and efficiently.

Civil Engineering

Civil engineers design, build, supervise, operate, and maintain construction projects and systems in the public and private sector, including roads, buildings, airports, tunnels, dams, bridges, and systems for water supply and sewage treatment. From designing safe crosswalks to bringing electricity to our homes to supervising construction of some of the world's great buildings, civil engineers have a lasting impact.

Computer Engineering

Computer engineers integrate knowledge of both hardware and software to design embedded systems. They might work on a flexible manufacturing system or a "smart" device or instrument. The rapid advances in computing systems are largely a result of the research, development, and design efforts of these engineers. Computer engineers may perform a wide variety of tasks involving hardware, software, peripherals, and hardware-software integration.

Electrical Engineering

Electrical engineers are the professionals that deal with the study and application of electrical/electronics and telecommunication systems. They work on the development of new and advanced products used in almost all industrial sectors. Electrical engineers may perform a wide variety of tasks involving design, prototyping, and research and development in consumer electronics, telecommunication, robotics and control, embedded systems, and biomedical systems.

Mechanical Engineering

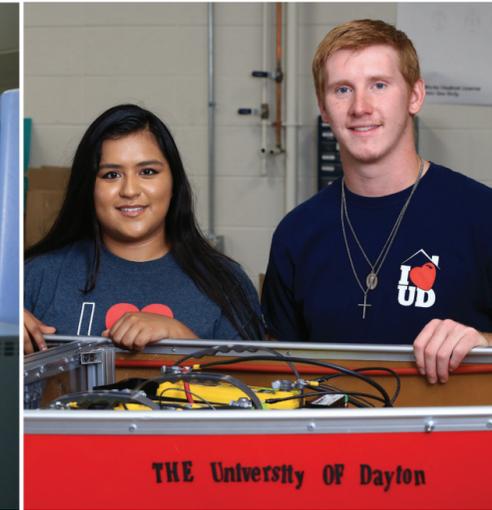
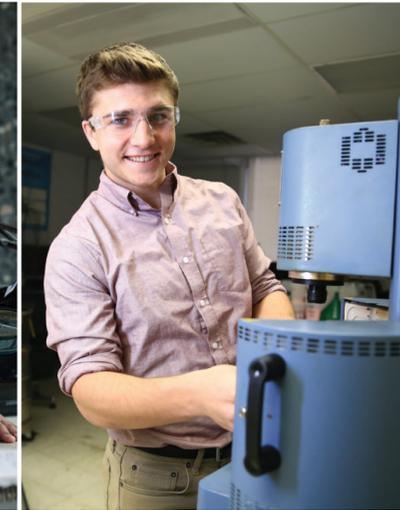
Mechanical engineering is a broad engineering discipline that involves designing things that move to help solve technical problems. Mechanical engineers work in a wide variety of fields, from energy and aeronautics to biomechanical/healthcare and automobile production. They create machines, products and new technologies that make our world better, safer and healthier.

Discover Engineering and Discover Engineering Technology

Unsure of your path in engineering? You are in good company. About 20 percent of our first year students choose Discover Engineering or Discover Engineering Technology to learn more about career paths, curriculum, majors, minors, and ways to gain practical experience. With the help of a semester-long seminar, and the assistance of your Student Success advisor, you'll discover the area of engineering that's right for you while staying on track academically to move forward. At UD, we are here to help you make the right choice for you, without quotas or post-admission barriers to declaring a major.

The programs in engineering are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Engineering Technology Majors



In general, engineering technology programs prepare graduates for employment in more applied engineering careers than engineering programs. Students are educated to design and build prototypes and develop or scale up a product or process. Graduates are involved in the design, setup, performance evaluation, service, sales, and management of products, equipment and manufacturing systems.

Electronic and Computer Engineering Technology

The Electronic and Computer Engineering Technology Program (ECT) prepares students for careers in the electronics and computer fields. The ECT curriculum, while including a strong emphasis on computers, centers on applied engineering topics in circuit analysis, analog and digital electronic design, digital communications, digital circuits, microprocessors, software, and data acquisition and instrumentation.

Industrial Engineering Technology

Industrial Engineering Technology prepares students for management and technical staff positions in manufacturing and service organizations such as healthcare, banking, transportation, food service, and government. Graduates may be involved in the economic selection and location of equipment, the planning of work methods and expected output, quality assurance, facilities layout, and scheduling and controlling the flow of materials. The curriculum emphasizes courses in work measurement, planning and control of lean processes, lean six sigma, human factors, safety, facilities layout design and simulation, economic and financial analysis, statistical process control, management of projects and global technical organizations, cost estimating and cost control, and mathematical decision-making.

Mechanical Engineering Technology

Mechanical Engineering Technology emphasizes the practical application of the principles of the mechanical field. Career opportunities are in mechanical design, computer-aided design, product evaluation and development, manufacturing engineering, computer-aided manufacturing, plant engineering, technical sales, technical service, fluid power, automation, and supervision. A significant portion of the graduates are in technical management. The curriculum includes a core of technical sciences; applied courses in design, thermodynamics, fluid mechanics, and manufacturing; extensive laboratory experiences; and mathematics from college algebra through probability, statistics, calculus, and differential equations.

The programs in engineering technology are accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.