



College of Engineering & Mines

Online Engineering Degrees



ONLINE Bachelor of Science in Chemical | Civil | Electrical | Mechanical | Petroleum ENGINEERING

FAST FACTS

- Available on a part-time basis
- Online courses: watch recorded lectures from anywhere, at any time
- Brief, on-campus labs held during the summer in Grand Forks, ND (maximum of 14 days)
- Deadlines for lessons and exams
- ABET accredited: Chemical, Civil, Electrical, and Mechanical Engineering (pending for new Petroleum Engineering degree)

WHY BECOME AN ENGINEER?

If you are creative, inquisitive, analytical, and detail oriented, a career in engineering may be the perfect fit for you. As an engineer, you will apply the principles of science and math to develop economical and sustainable solutions to technical problems. Your work will be the critical link between scientific discoveries and the commercial applications that meet the needs of today's society.

For the majority of the entry-level engineering jobs, you will need to obtain your bachelor's degree. With your bachelor's degree in engineering, you may earn some of the highest average starting salaries among those holding bachelor's degrees (U.S. Bureau of Labor Statistics). In addition, overall job opportunities for engineers are expected to be good.

Most engineers specialize in a particular field, such as Mechanical or Civil Engineering. However, engineers trained in one branch may work in related branches. This flexibility allows you to shift to fields with better employment prospects and career opportunities.

ABOUT UND'S DISTANCE PROGRAM

With UND's distance engineering degree program you can earn your Bachelor of Science degree while you continue to live and work in your local community.

At UND you will receive a well-rounded education that emphasizes creativity, critical thinking, leadership, technical competence, and communication skills. You will learn from highly qualified faculty with doctoral degrees and extensive experience in teaching distance engineering courses.

Upon graduation you will be prepared for the responsible practice of professional engineering and possess the necessary knowledge, values, and skills to advance your engineering career.

ABET ACCREDITATION

UND's Chemical, Civil, Electrical, and Mechanical Engineering programs are accredited through the Accreditation Board for Engineering and Technology (ABET)—the highest standard in engineering education.

ABET Accreditation is Pending for Petroleum Engineering

Because the Petroleum Engineering major is new as of Fall 2010, UND has begun, but not yet completed, the ABET accreditation process. The Petroleum Engineering program is designed for accreditation by ABET, which has a 6-year accreditation cycle that requires UND to: 1) graduate a student with a degree in Petroleum Engineering, 2) submit a self-study report, and 3) undergo a campus visit by a program evaluator.

Similar to all of UND's engineering degrees, it is anticipated that the Petroleum Engineering program will be accredited by ABET during the next cycle. If ABET accreditation is obtained, it is retroactive for all graduates of UND's program.

BS in CHEMICAL Engineering

"I really enjoyed the whole experience. The professors were great and the support was phenomenal. The ability to do this degree as a distance version really made it possible for me to pursue this."

— Kevin Houser, Ethicon Endo-Surgery, Cincinnati, OH

As a chemical engineer you will apply the principles of chemistry, physics, mathematics, and mechanical and electrical engineering to solve problems involving the production or use of chemicals and biochemicals.

With your bachelor's degree in Chemical Engineering, you will:

- understand the role of chemical engineers in addressing societal issues.
- be qualified to practice the profession of chemical engineering in a broad spectrum of industries.
- gain the knowledge and skills required to analyze and solve problems related to chemical engineering.
- be able to communicate the results of your work in verbal and written form to diverse audiences.
- possess a thorough grounding in general education and engineering fundamentals so you can pursue advanced degrees in chemical engineering or other professional interests such as medicine, business, or law.

Chemical engineers typically work in research, teaching, development, manufacturing, technical support, marketing, sales, project engineering, or enter into engineering management.

BS in PETROLEUM Engineering

"The key thing that UND wants to do is educate the next generation of petroleum engineers — the energy experts."

— Steve Benson, PhD, Program Director,
UND Department of Petroleum Engineering

As a petroleum engineer you will:

- search for resources that contain oil and gas.
- work with geologists to understand the oil and gas formation.
- determine the best drilling methods.
- perform computer simulations.
- design equipment and processes to monitor and optimize production and recovery.
- ensure all operations are safe, smooth, and environmentally healthy.

With your bachelor's degree in Petroleum Engineering, you will:

- contribute to the professional service and research for safe, reliable, and affordable energy production and environmental protection.
- understand the scale and integration of systems, including: science and technology, economics and business, policy and regulation, and society and behavior.
- possess the necessary skills to efficiently recover natural gas and petroleum from new and existing resources with minimal environmental impact.
- gain a strong background in ethics, safety, economics, information technology, leadership, management, and communication.
- develop critical thinking and problem solving skills to deal with technical and environmental issues in the petroleum engineering industry.

Petroleum engineering is a rapidly growing field. Due to increased demand and a retiring workforce, petroleum engineering graduates have a greater than 90% job placement rate with an average starting salary of more than \$83,000.

BS in CIVIL Engineering

"The distance degree program was difficult to say the least, but more rewarding than I could have ever imagined . . . The support I had at home and the civil engineering faculty at UND are what made it all possible. The degree that I earned from UND will undoubtedly open doors for me in the future that would have otherwise remained unobtainable."

— Jed Nordin, Hubbard County Highway Department
BS in Civil Engineering

As a civil engineer you will design and supervise the construction of public and industry infrastructure, including roads, buildings, airports, tunnels, dams, harbors, bridges, landfills, flood control systems, and water supply and sewage systems.

With your bachelor's degree in Civil Engineering, you will:

- have the knowledge and skills required to analyze and solve problems related to the field of civil engineering.
- be able to design and conduct experiments, as well as analyze and interpret engineering data.
- receive the broad education necessary to understand the impact of engineering solutions in a global, societal, and economic context.
- be qualified to practice civil engineering in a wide range of professional settings.

Typically, civil engineers work in consulting firms, industries, or governmental agencies in a variety of areas, including:

- engineering design and development
- construction
- environmental regulation
- research
- technical sales

UND's civil engineering program emphasizes the areas of environmental engineering, geotechnical engineering, structural engineering, and water resources engineering.



BS in ELECTRICAL Engineering

"The distance engineering degree program staff at UND was very accommodating to the distance learner. The quality of the courses and the convenience of distance education in general, allowed me to essentially keep the lifestyle that I had grown accustomed to...while opening new opportunities for me professionally and scholastically."

— Jason Chabot, ST-NXP Wireless, BS in Electrical Engineering

As an electrical engineer you will use science, technology, and problem-solving skills to design, construct, and maintain products, services, and information systems. You may specialize in electronics, electrical engineering, or computer engineering.

With your bachelor's degree in Electrical Engineering, you will:

- be prepared to practice in corporate and government entry-level jobs or to pursue further education at the graduate level.
- possess a breadth of knowledge in electrical engineering covering the fundamentals of DC and AC electricity and electric power circuits, analog and digital electronics, electromagnetic fields and applications, and signals and systems.
- know how to conduct experimental work needed to substantiate theoretical developments.
- understand and formulate solutions of open-ended engineering design problems.
- use computers for solving problems including computations, data acquisition, controls, programming, design, information retrieval, and graphics.
- be able to work and communicate effectively with your peers and the general public.

Electrical engineers typically work in a broad range of industries including; telecommunications, energy and electric power, computers, or semiconductors.

BS in MECHANICAL Engineering

"The program was great. It is the only accredited undergraduate program available online for mechanical engineers. A lot of time and effort was spent by UND staff to make online education as seamless as possible. I have received three promotions in the past three years. Two are attributed to having my degree."

— Sylvan Amos, Whirlpool Corporation, BS in Mechanical Engineering

Mechanical engineering is one of the broadest engineering disciplines. As a mechanical engineer you may research, design, develop, manufacture, or test tools, engines, machines, and other mechanical devices.

With your bachelor's degree in Mechanical Engineering, you will:

- possess the technical, leadership, and communication skills for entry-level positions in mechanical engineering.
- gain a broad understanding of thermal sciences, mechanical design, and manufacturing processes.
- develop critical thinking and problem solving skills using the principles of science and mathematics.
- experience a design project that blends scientific knowledge and engineering analysis with social and humanitarian issues. Past projects include: solar cars, wind tunnels, space hardware design, nanotechnology, pressure vessel research, coal combustion, agricultural innovations and precision machining.

Mechanical engineers typically work in a variety of industries including: power generation, aeronautical, automotive, health, food or chemical processing, defense technology, and research.

HOW DISTANCE ENGINEERING DEGREES WORK

Online Courses

- Access online courses from **anywhere, at any time.**
- Follow curriculum that mirrors UND's on-campus programs; **your transcript and diploma will look the same** as for a student who has graduated from UND by taking traditional, on-campus courses.
- **Set your own schedule** by watching recorded lectures, accessing course materials, and submitting assignments in a virtual classroom.
- Complete supervised (proctored) exams within the specified timeframe at a **location near you.**
- **Receive waivers** for select introductory courses based on your previous work experience and knowledge of the engineering field.

On-Campus Labs

For courses requiring lab work, you will be required to complete condensed, on-campus labs during the summer in Grand Forks, North Dakota.

- 1 credit lab = up to 5 days on campus
- 2 or 3 credit lab = up to 14 days on campus

You will be assisted with making lodging arrangements in UND dorms.

"Coming [to UND] and actually meeting the faculty and putting a face to them and shaking hands...is going to help a lot because now you have more of a rapport with the instructor. I think it's worthwhile for anyone to do this, I really do." — Andrew Pillar, Boeing

Online Engineering Degrees

DEGREE REQUIREMENTS

Of the credits required for graduation with your Bachelor of Science degree, you must meet the following requirements:

- 39 credits that meet UND's Essential Studies (General Education) requirements.
- 60 credits from a 4-year, regionally accredited college or university.
- 36 credits at an upper division level (300 or above).
- last 30 credits earned from UND. You will be required to take specific courses in your major from UND.

All engineering students must complete foundation courses in Chemistry, English, Math, and Physics with a grade of C or better prior to enrollment in upper division (300 or above) engineering courses at UND.

Your advisor will assist you with a specific plan of study that meets UND's degree requirements for each major. For more details on the distance engineering curriculum for each major, please visit our website.

WHO SHOULD APPLY?

Regardless of where you live or your current profession, you may earn your engineering degree from the University of North Dakota. The part-time, online program is designed for working adults who are unable to attend traditional, on-campus classes.

New Freshmen

If you have **fewer than 24** completed, transferable college-level credits, you must:

- complete the UND undergraduate application.
- submit your non-refundable application fee, high school transcripts, any college/university transcripts, and official ACT or SAT test scores to UND. If you are 25 years of age or older, you do **not** need to meet the ACT/SAT requirement.

Transfer Students

If you have **24 or more** completed, transferable college-level credits, you must:

- complete the UND undergraduate application.
- submit your non-refundable application fee, all college/university transcripts, and high school transcripts. If you have **60 or more** completed, transferable, college-level credits, you do **not** need to submit your high school transcripts.

For complete details on the admissions process, please refer to our website.


Get Started Today!

UND UNIVERSITY OF
NORTH DAKOTA

ONLINE & DISTANCE EDUCATION

engineeringonline.UND.edu/facts

1.800.CALL.UND | 701.777.3000

Chat online with us to get immediate answers to your questions!  Live Chat

ADVISING INFORMATION

After you are officially admitted to UND with a declared major of Engineering, you must complete Steps 1-3 **before** an advisor will be assigned to you to assist with course selection:

Step 1: The UND Registrar's Office will evaluate your college transcripts (as applicable) to determine which courses will transfer to UND.

Step 2: The relevant engineering department will determine if the transferred credits will apply to your specific degree program. Some credits that are accepted by UND may **not** satisfy the requirements for your major.

Step 3: To determine placement in UND math courses, you may: 1) use your ACT or SAT score, 2) complete the COMPASS Math Placement Exam, or 3) work with the UND Mathematics Department to get previous math courses evaluated for transfer course equivalency.

Step 4: You will receive a degree requirement status sheet and meet with an advisor to select courses.

Step 5: Prior to taking upper division (300 level or above) engineering courses, you must be admitted to the professional engineering degree program at UND. Your advisor will assist you with this separate application process.

TUITION & FINANCIAL AID

Tuition for the distance engineering program is based on your residency status. Additional course and program fees will apply. For current tuition information, please visit our website.

Active Duty Military, Veterans & Spouses

The **in-state, resident tuition rate** is available to all active duty military, veterans, and spouses regardless of residency status. Dependents of active duty military also qualify for the in-state tuition rate.

Financial Aid & Tuition Assistance

As a degree-seeking student taking semester-based online courses, you may qualify for financial aid. The Free Application for Federal Student Aid (FAFSA) is the only application UND requires to determine your eligibility for financial aid.

UND also accepts employer, military, and veteran tuition assistance.

ADMISSION DEADLINES

You can begin earning your bachelor's degree online every fall, spring, and summer semester. Apply early. To begin the program, you must be **admitted** to UND by the following dates:

Summer Semester: Must be admitted by February 1

Fall Semester: Must be admitted by February 1

Spring Semester: Must be admitted by September 1

Current as of: 3-19-13

Information is subject to change without notice.

engineeringonline.UND.edu/facts