Petroleum Engineering

College of Engineering and Mines
Department of Petroleum Engineering (https://www.uaf.edu/cem/programs/petroleum-engineering/)
907-474-7734

Department Overview
The mission of the petroleum engineering program is to provide its students with quality education and training in the field of petroleum engineering through effective teaching, research and public service, with emphasis on Alaska petroleum resources.

Petroleum engineering offers a unique look at the challenging problems confronting the petroleum industry. This program requires an understanding of many disciplines including mathematics, physics, chemistry, geology and engineering science. Courses in petroleum engineering deal with drilling, formation evaluation, production, reservoir engineering, computer simulation and enhanced oil recovery. The curriculum prepares graduates to meet the demands of modern technology while emphasizing, whenever possible, the special problems encountered in Alaska. Located in one of the largest oil-producing states in the nation, the UAF petroleum engineering department offers one of the most modern and challenging degree programs available.

Learn more about the petroleum engineering program's mission, goals and educational objectives (https://www.uaf.edu/cem/programs/petroleum-engineering/).

B.S., Energy Resource Engineering
The mission of the energy resource engineering program is to graduate a versatile energy engineer who is prepared to practice the profession in any energy-producing industry.

Energy resource engineering provides the foundation for students for careers in diverse aspects of the energy sector, representing a rapidly changing landscape of the oil and gas industry and the significance of renewables and alternative energy sources. This program requires an understanding of many disciplines including mathematics, physics, chemistry, and engineering science. Courses in energy resource engineering deal with diverse energy production topics such as petroleum and geothermal drilling, reservoir and production engineering, carbon capture, electrical and power systems, energy and the environment, data analysis, and energy resource characterization and economics, culminating in a year-long senior capstone design on practical energy resource engineering systems and components.

The curriculum prepares graduates to develop and adopt energy-related technologies across a range of resource options and tailor well-balanced designs to the needs of Alaska's disparate communities and industries.

Minimum Requirements for Energy Resource Engineering Bachelor's Degree: 132 credits

B.S., Petroleum Engineering
The petroleum engineering program educational objectives are:

1. Our graduates will apply their technical knowledge and data analytics skills and have successful careers in the oil and gas industry analyzing real-world petroleum engineering problems, developing innovative solutions underpinned by data, and communicating these to meet the needs of multiple stakeholders within the global community.
2. Our graduates will demonstrate professionalism, commitment to ethical standards, and lifelong learning through continuing professional development during their careers.
3. Our graduates will contribute significantly to the global petroleum engineering profession and they will exemplify the behaviors, including integrity, empathy, tolerance and respect and fair dealing, necessary to become industry leaders within and beyond Alaska.

Learn more about the petroleum engineering program mission, goals and educational objectives (http://cem.uaf.edu/pete/abet/).

Minimum Requirements for Petroleum Engineering Bachelor's Degree: 131 credits

M.S., Petroleum Engineering
The curriculum prepares graduates to meet the demands of modern technology while emphasizing, whenever possible, the special problems encountered in Alaska. Located in one of the largest oil-producing states in the nation, the UAF petroleum engineering department offers modern and challenging degree programs.

The M.S. program is intended to provide students with an advanced treatment of petroleum engineering concepts. Students may choose either a thesis or non-thesis option. Research and teaching assistantships are available.

A doctoral degree program is offered with a concentration in petroleum engineering for qualified students. Contact the graduate program coordinator or the petroleum engineering department for more information.

Minimum Requirements for Petroleum Engineering Master's Degree: 30-36 credits

Learn more about the master's degree in petroleum engineering (https://www.uaf.edu/academics/programs/masters/petroleum-engineering.php), including an overview of the program, career opportunities and more.

Ph.D., Engineering
Engineers use knowledge of the mathematical and natural sciences to develop economical uses of materials and forces of nature for human benefit. The professional practice of engineering requires sophisticated skills, the use of judgment and the exercise of discretion. The basic education necessary for the professional practice of engineering is provided by the engineering bachelor's and master's degrees. Doctoral-level education requires independent research that generates fundamental advances in technology and discovers new knowledge for the benefit of society. Engineering Ph.D. degrees provide leadership in scientific research, academia and industrial research and development. The Ph.D. degree in engineering draws on the combined strength of the College of Engineering...
and Mines and offers opportunities for engineers at other UA campuses to participate.

Minimum Requirements for Engineering Doctorate Degree: 36 credits

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### Programs

**Degrees**

- B.S. Petroleum Engineering ([https://catalog.uaf.edu/bachelors/petroleum-engineering-bs/](https://catalog.uaf.edu/bachelors/petroleum-engineering-bs/))
- M.S. Petroleum Engineering ([https://catalog.uaf.edu/masters/petroleum-engineering/](https://catalog.uaf.edu/masters/petroleum-engineering/))
- Ph.D., Engineering with Petroleum Concentration ([https://catalog.uaf.edu/phd/engineering/](https://catalog.uaf.edu/phd/engineering/))