

The process of making oil and gas available in the huge quantities needed to sustain our industrial economy and maintain our standard of living is quite challenging. Petroleum engineers are trained to face these challenges. Oil and gas must be discovered, its quantity and production potential must be assessed, optimal extraction methods must be established to maximize recovery, and it must be transported from the point of production to the refinery and then stored. All **these processes need to be carried out in an environmentally safe manner**. Petroleum engineers must be multi-faceted in order to cover all these various aspects.

Career Opportunities

As a petroleum engineer, you can expect to work in a variety of U.S. locations from the East Coast to the West Coast and from the Gulf of Mexico to Alaska. There are also immense opportunities to become an international engineer and work in overseas locations including South America, Africa, the Middle East, Northern Europe, Southeast Asia, and Australia. Our graduates will practice in a broad range of petroleum engineering fields working on teams that create innovative solutions to the most pressing problems of the petroleum and natural gas industry by implementing the ideals of ethical behavior, professionalism, and environmental sensitivity and social awareness.



"My time in the department as a petroleum and natural gas engineering student has been gratifying. The opportunities that are presented to you to grow academically and professionally are innumerable! After my internship with Baker Hughes I had a better understanding of the industry. Also, joining SPE has allowed me to develop my leadership skills and be more prepared after graduation."
- Leyla Ramirez

The Academic Program

The Petroleum and Natural Gas Engineering program provides an up-to-date understanding of all phases of the petroleum and natural gas industry built on a strong foundation of basic science and engineering theory and practice. The major is arranged in two parts: the first emphasizing reservoir engineering, and the second focusing on drilling and production. The program culminates in a course on the economic realities of engineering design and the implication of decision making. Penn State's Petroleum and Natural Gas Engineering program is accredited by the Engineering Accreditation Commission of ABET. www.abet.org

Program requirements include courses in the following areas:

- Physics (*mechanics, electricity and magnetism, fluids and thermal physics*)
- Energy and mineral engineering (*thermodynamics, fluid mechanics, geo-resource evaluation*)
- Geosciences (*physical geology, geology of oil and gas*)
- Petroleum engineering (*reservoir modeling, oil well drilling, production process engineering*)
- Petroleum engineering capstone design project

A minimum of 129 credits is required for the B.S. in Petroleum and Natural Gas Engineering

An internship with an energy-related company or government agency is strongly recommended. Many of these companies also recruit full-time employees from among our students.

eme.psu.edu/pnge



Research

Research areas include reservoir engineering and simulation; multiphase fluid transport in porous media; fracture-matrix interaction; artificial expert systems; enhanced oil and unconventional gas recovery, storage, and transport; remediation of pipeline contamination; and reservoir engineering.

"The Penn State Petroleum and Natural Gas Engineering program has provided a great fundamental education that allowed me to obtain an internship in the oil and gas industry. Last summer, I interned with a Marcellus Shale gas independent company and handled multiple projects involved with torque and drag modeling and drilling discipline. Overall, I have had a great learning experience in the PNGE program, and I look forward to my future as a petroleum engineer."

— Cory Nguyen



Scholarships

The Petroleum and Natural Gas Engineering program has dedicated scholarship funds, which are awarded on the basis of academic achievement and merit. Students are also eligible for numerous scholarships through the University and the College of Earth and Mineral Sciences.



For More Information:

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