PETROLEUM AND NATURAL GAS ENGINEERING, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description
The undergraduate curriculum in Petroleum and Natural Gas Engineering has been designed to equip the student with the fundamentals necessary to achieve lifelong professional growth. Graduates are prepared to enter both the private and public sectors as petroleum and natural gas engineers or to pursue further education at the graduate level.

The courses are structured to serve as a melting pot for theory, application to case studies, and engineering project design. This enables the student to appreciate and understand that a successful engineering design project requires a sound theoretical foundation, experimentation and engineering judgment. The thrust of the program structure emphasizes the fundamentals of mathematics and earth and engineering sciences and integrates them in application to traditional petroleum and natural gas engineering topics. Design projects are required throughout the curriculum. Execution of these projects requires an amalgamation of problem formulation strategies, testing of alternative design methodologies, feasibility studies, and economic and environmental considerations. Graduates of the program are expected to perform in various facets of the petroleum industry including drilling, production, evaluation, transportation, and storage. The petroleum and natural gas engineering faculty and staff are committed to an interactive teaching and learning environment to ensure that the student is an active participant in the learning process. General education opportunities are sufficiently broad and diverse in scope to enable the student to tailor the educational experience to particular interests, background, and expected role in society.

What is Petroleum and Natural Gas Engineering?
Petroleum and Natural Gas Engineering is a field of engineering related to the production of hydrocarbon resources, which can be either crude oil or natural gas. As such, petroleum and natural gas engineers predominantly work in the upstream sector of the oil and energy industries, which comprises exploration, field development, well drilling, and production well optimization activities. Once oil and gas are discovered, petroleum engineers determine optimum drilling methods, implement drilling and well completion plans, monitor and manage production operations, and design reservoir development strategies. Petroleum and natural gas engineers have the responsibility of providing engineering solutions that consider the impact in global, economic, environmental, and societal contexts. Petroleum and natural gas engineers work closely with geoscientists and other science and technology specialists. They are also well suited to solve complex problems in geothermal energy extraction, geological carbon sequestration, and environmental remediation of soil, groundwater, and other geologic media.

You Might Like This Program If...
- You enjoy combining disciplines such as geology, physics, and math to solve complex problems of relevance to society.
- You want to use science and engineering principles to assist the challenge of global energy demands.
- You seek a profession that offers national and international networking opportunities.
- You want to work in the field, performing sophisticated computer simulations, or interpreting reservoir and production data.