Petroleum Engineering

College of Engineering and Mines
Department of Petroleum Engineering
(907) 474-7734
www.uaf.edu/petrol/

B.S. Degree

Minimum Requirements for Degree: 134 credits

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.

Major—B.S. Degree

1. Complete the general university requirements. (See page 107. As part of the core curriculum requirements, complete: MATH 200X, CHEM 105X, CHEM 106X, and LS 101X.)
2. Complete the B.S. degree requirements. (See page 114. As part of the B.S. degree requirements, complete: MATH 201X, PHYS 211X and PHYS 212X.)
3. Complete the following program (major) requirements:*
   - ES 201—Computer Techniques 3
   - ES 208—Mechanics 4
   - ES 331—Mechanics of Materials 3
   - ES 341—Fluid Mechanics 4
   - ES 346—Basic Thermodynamics 3
   - GE 261—General Geology for Engineers (3) or GEOS 101X—The Dynamic Earth (4) 3-4
   - GEOS 370—Sedimentary and Structural Geology for Petroleum Engineers 4
   - PETE 103—Survey of Energy Industries 1
   - PETE 104—Fundamentals of Petroleum 1
   - PETE 205—Fundamentals of Drilling Practices 1
   - PETE 206—Introduction to Petroleum Production 1
   - PETE 301—Reservoir Rock and Fluid Properties 4
   - PETE 302—Well Logging 3
   - PETE 303W—Reservoir Rock and Fluid Properties Laboratory 1
   - PETE 407—Petroleum Production Engineering 3
   - PETE 411W—Drilling Fluids Laboratory 1
   - PETE 421—Reservoir Characterization 3
   - PETE 426—Drilling Engineering 3
   - PETE 431—Natural Gas Engineering 2
   - PETE 456—Petroleum Evaluation and Economic Decisions 3
   - PETE 466—Petroleum Recovery Methods 3
   - PETE 476—Petroleum Reservoir Engineering 3
   - PETE 478—Well Test Analysis 2
   - PETE 481W—Well Completions and Stimulation Design 3
   - PETE 487A—Petroleum Project Design** 1
   - PETE 487BW,O—Petroleum Project Design 1
   - PETE 489—Reservoir Simulation 2
   - Engineering elective*** 3
   - Technical elective**** 3
4. Complete the following program (major) requirements:
   - MATH 202X—Calculus 4
   - MATH 302—Differential Equations 3
   - MATH 310—Numerical Analysis 3
5. Complete the Fundamentals of Engineering Exam (as approved by the Board of Architects, Engineers and Land Surveyors).
6. Minimum credits required 134

** Student must earn a C grade or better in each course.*

*** PETE 487A is prerequisite for PETE 487B. Must take both courses to meet the oral communication and writing intensive requirements.*

**** As approved by advisor (e.g. ME 416 or ES 307).*

***** As approved by advisor (e.g. CE 603).*

Note: Page numbers refer to the UAF 2005-2006 academic catalog, which can be viewed online at www.uaf.edu/catalog/.

Baccalaureate Core Requirements

All degrees (e.g. B.A., B.S., etc.) require additional courses. Refer to specific degree and program requirements.

COMMUNICATION (9)

Complete the following:
ENGL 111X .....(3) _____
ENGL 190H may be substituted.

Complete one of the following:
ENGL 211X **OR** ENGL 213X .....(3) _____

Complete one of the following:
COMM 131X **OR** COMM 141X.....(3) _____

PERSPECTIVES ON THE HUMAN CONDITION (18)

Complete all of the following four courses:
ANTH 100X/SOC 100X.....(3) _____
ECON 100X **OR** PS 100X .....(3) _____
HIST 100X.....(3) _____
ENGL/FL 200X .....(3) _____

Complete one of the following three courses:
ART/MUS/THR 200X, HUM 201X **OR** ANS 202X..... (3) _____

Complete one of the following six courses:
BA 323X, COMM 300X, JUST 300X, NRM 303X,
PS 300X **OR** PHIL 322X.....(3) _____
OR complete 12 credits from the above courses **PLUS**
- two semester-length courses in a single Alaska Native language or other non-English language **OR**
- three semester-length courses (9 credits) in American Sign Language taken at the university level.

MATHEMATICS (3)

Complete one of the following:
MATH 107X, MATH 161X **OR** MATH 103X.....(3-4) _____
** No credit may be earned for more than one of MATH 107X or 161X.*

OR complete one of the following:*
MATH 200X, MATH 201X, MATH 202X,
MATH 262X **OR** MATH 272X.....(4) _____
**Or any math course having one of these as a prerequisite*

NATURAL SCIENCES (8)

Complete any two (4-credit) courses:
ATM 101X .....(4) _____
BIOL 100X.....(4) _____
BIOL 103X.....(4) _____
BIOL 104X.....(4) _____
BIOL 105X.....(4) _____
BIOL 106X.....(4) _____
BIOL 111X.....(4) _____
BIOL 112X.....(4) _____
CHEM 100X .....(4) _____
CHEM 103X .....(4) _____
CHEM 104X .....(4) _____
CHEM 105X .....(4) _____
CHEM 106X .....(4) _____
GEOG 205X .....(4) _____
GEOS 100X .....(4) _____
GEOS 101X .....(4) _____
GEOS 112X .....(4) _____
GEOS 120X .....(4) _____
GEOS 125X .....(4) _____
MSL 111X.....(4) _____
PHYS 102X.....(4) _____
PHYS 103X.....(4) _____
PHYS 104X.....(4) _____
PHYS 115X.....(4) _____
PHYS 116X.....(4) _____
PHYS 175X.....(4) _____
PHYS 211X.....(4) _____
PHYS 212X.....(4) _____
PHYS 213X.....(4) _____

LIBRARY AND INFORMATION RESEARCH (0–1)
Successful completion of library skills competency test **OR**
LS 100X or 101X prior to junior standing .....(0–1) _____

UPPER-DIVISION WRITING AND ORAL COMMUNICATION (0)

Complete the following:
Two writing intensive courses designated (W) .....(0) _____
One oral communication intensive course designated (O) .....(0) _____
OR two oral communication intensive courses designated (O/2), at the upper-division level (see degree and/or major requirements) .....(0) _____

TOTAL CREDITS REQUIRED.....38–39

UNIVERSITY OF ALASKA FAIRBANKS
Office of Admissions and the Registrar • P.O. Box 757480 • Fairbanks, AK 99775-7480 • admissions@uaf.edu • www.uaf.edu