

# Petroleum Engineering

School of Mineral Engineering  
Department of Petroleum Engineering  
(907) 474-7734  
www.uaf.edu/petrol/



## M.S. Degree

Minimum Requirements for Degree: 30-36 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 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.

An interdisciplinary doctoral degree program is offered with specialization in petroleum engineering for qualified students. Contact the graduate program coordinator or the petroleum engineering department for more information.

## Graduate Program—M.S. Degree

1. Complete the following admission requirement:
  - a. Complete a B.S. degree in engineering or the natural sciences.
2. Complete the general university requirements (page 166).
3. Complete the master's degree requirements (page 170).
4. Complete the thesis or non-thesis requirements:

### Thesis

- a. Complete 1 course from each of the following groups:

#### Group 1. Drilling and production courses:

PETE 607—Advanced Production Engineering .....	3
PETE 666—Drilling Optimization .....	3
PETE 685—Non-Newtonian Fluid Mechanics .....	3
PETE 689—Multiphase Fluid Flow in Pipes .....	3

#### Group 2. Reservoir engineering/well test analysis/reservoir simulation courses:

PETE 610—Advanced Reservoir Engineering .....	3
PETE 661—Applied Well Testing .....	3
PETE 663—Applied Reservoir Simulation .....	3
PETE 683—Natural Gas Processing and Engineering .....	3

#### Group 3. Enhanced oil recovery/waterflooding courses:

PETE 630—Water Flooding .....	3
PETE 662—Enhanced Oil Recovery .....	3
PETE 665—Advanced Phase Behavior .....	3
PETE 670—Fluid Flow Through Porous Media .....	3

#### Group 4. Engineering/technology courses:

CE 603—Arctic Engineering .....	3
PETE 680—Horizontal Well Technology .....	3
PETE 684—Computational Methods in Petroleum Engineering ...	3
b. Complete the following:	
PETE 699—Thesis .....	6
Elective courses* .....	12
c. Minimum credits required .....	30

#### Non-Thesis

a. Complete 1 course from each group in the thesis option .....	12
b. Complete the following:	
PETE 698—Engineering Project .....	6
Electives* .....	18
c. Minimum credits required .....	36

\* Electives are chosen with approval of graduate advisory committee.

**Note: Page numbers refer to the UAF 2004-2005 academic catalog, which can be viewed online at [www.uaf.edu/catalog/](http://www.uaf.edu/catalog/).**

