

# Petroleum Engineering

College of Engineering and Mines  
Department of Petroleum Engineering  
907-474-7734  
[www.uaf.edu/petrol/](http://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.

A doctoral degree program is offered with concentration in petroleum engineering for qualified students (see Engineering). 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 192).
3. Complete the master's degree requirements (page 196).
4. Complete the thesis or non-thesis requirements:

### Thesis

- a. Complete four of the following:

|                                                          |   |
|----------------------------------------------------------|---|
| PETE F607—Advanced Production Engineering.....           | 3 |
| PETE F610—Advanced Reservoir Engineering.....            | 3 |
| PETE F630—Water Flooding.....                            | 3 |
| PETE F656—Advanced Petroleum Economic Analysis.....      | 3 |
| PETE F661—Applied Well Testing.....                      | 3 |
| PETE F662—Enhanced Oil Recovery.....                     | 3 |
| PETE F663—Applied Reservoir Simulation.....              | 3 |
| PETE F665—Advanced Phase Behavior.....                   | 3 |
| PETE F666—Drilling Optimization.....                     | 3 |
| PETE F670—Fluid Flow Through Porous Media.....           | 3 |
| PETE F680—Horizontal Well Technology.....                | 3 |
| PETE F683—Natural Gas Processing and Engineering.....    | 3 |
| PETE F684—Computational Methods in Petroleum Engineering | 3 |
| PETE F685—Non-Newtonian Fluid Mechanics.....             | 3 |
| PETE F689—Multiphase Fluid Flow in Pipes.....            | 3 |
- b. Complete the following:

|                       |    |
|-----------------------|----|
| PETE F699—Thesis..... | 6  |
| Elective courses*     | 12 |
- c. Minimum credits required.....30

### Non-Thesis

- a. Complete four courses from those in the thesis option.....12
  - b. Complete the following:

|                                    |    |
|------------------------------------|----|
| PETE F698—Engineering Project..... | 6  |
| Electives*                         | 18 |
  - c. Minimum credits required.....36
- \* Electives are chosen with approval of graduate advisory committee.