

# Engineering

College of Engineering and Mines  
907-474-7241  
[www.uaf.edu/cem/](http://www.uaf.edu/cem/)

## Ph.D. Degree

Minimum Requirements for Degree: 36 credits

Engineers use knowledge of the mathematical and natural sciences to develop economical uses of materials and forces of nature for human benefit. The professional practice of engineering requires sophisticated skills, use of judgment and exercise of discretion. The basic education necessary for the professional practice of engineering is provided by the engineering bachelor and master's degrees. Doctoral-level education requires independent research that generates fundamental advances in technology and discovers new knowledge for the benefit of society. Engineering Ph.D. degrees provide leadership in scientific research, academia and industrial research and development. The Ph.D. degree in engineering draws on the combined strength of the College of Engineering and Mines and offers opportunities for engineers at other UA campuses to participate.

## Graduate Program — Ph.D. Degree

**Concentrations: Arctic, Civil, Computer, Electrical, Engineering Management, Environmental, Geological, Mechanical, Mining and Petroleum**

1. Complete the following admissions requirements:
  - a. Complete either a B.S. or M.S. degree in engineering.
  - b. Complete a master's degree in engineering or a closely related field.
  - c. Submit GRE scores.
2. Complete the general university requirements (page 201).
3. Complete the Ph.D. degree requirements (page 206).
4. As part of the Ph.D. degree requirements, complete the following:
  - a. Complete at least 18 credits of course work beyond the M.S. degree.
  - b. Complete at least three full-time semesters of residency, which may include a summer semester. Residency is defined as living in the Fairbanks area, working with the student's graduate advisor and graduate committee, while taking courses at UAF.
  - c. Complete and pass a written and oral comprehensive examination.
  - d. Complete and submit a written thesis proposal for approval.
  - e. Complete a research program as arranged with the graduate advisory committee.
  - f. Complete a thesis that is a substantial contribution to the body of knowledge in engineering and pass an oral defense of thesis.
5. Minimum credits required .....36