Environmental Engineering and Environmental Quality Science

College of Engineering and Mines
Department of Civil and Environmental Engineering
(907) 474-6129
www.uaf.edu/engineer/cee.htm

M.S. Degree

Minimum Requirements for Degree: 30 credits

The environmental engineering and environmental quality science program offers an M.S. degree in environmental engineering for engineers and an M.S. degree in environmental quality science for scientists.

Career opportunities for graduates include water supply, treatment and distribution, waste treatment, water and air pollution, solid waste disposal, hazardous and toxic waste management, pollution prevention, environmental impact evaluation, administration of environmental programs and regulatory compliance. Graduates are prepared to hold positions in government, industry, consulting or academia.

Graduate Program—Environmental Engineering, M.S. Degree

1. Complete the following admission requirements:
   a. Complete the equivalent of a UAF course in basic computer techniques.
   b. Complete the TOEFL exam (only required of non-native English speakers. The minimum score required is 575 for the paper test, or 213 for the computerized test).
   c. Complete a B.S. in engineering from an ABET accredited institution with a GPA of 3.0 or higher.
2. Complete the general university requirements (page 182).
3. Complete the master's degree requirements (page 186).
4. Complete the thesis or non-thesis requirements for one of the environmental engineering and environmental quality science concentration areas listed below.

Graduate Program—Environmental Quality Science, M.S. Degree

1. Complete the following admission requirements:
   a. Complete the equivalent of one year of UAF courses in calculus and general chemistry, and one semester of computer techniques.
   b. Complete the TOEFL exam (only non-native English speakers, the minimum score required is 575 for the paper test, or 213 for the computerized test).
   c. Complete a B.S. in science from an accredited institution with a GPA of 3.0 or higher.
2. Complete the general university requirements (page 182).
3. Complete the master's degree requirements (page 186).
4. Complete the thesis or non-thesis requirements for one of the environmental engineering and environmental quality science concentration areas listed below.

Concentrations for Environmental Engineering and Environmental Quality Science: Environmental Contaminants, Environmental Science and Management, Water Supply and Waste Treatment

Environmental Contaminants

a. Complete the following
- CS 663—Groundwater Dynamics 3
- ENVE 641—Aquatic Chemistry 3
- ENVE 642—Contaminant Hydrology 3
- ENVE 647—Biotechnology 3
- ENVE 649—Hazardous and Toxic Waste Management 3
- ENVE 650—Seminar* (1) 2
- ENVE 653—Measurements Laboratory 1
- ENVE 698—Project 3
  - or ENVE 699—Thesis 6
- Approved electives** 6-9

b. Minimum credits required 30

** Complete two semesters at 1 credit each.*

*** Electives as approved by the student's committee (6 credits for thesis option; 9 credits for project option).*

Note: In addition to the courses listed in any of the concentration areas, electives include but are not limited to: BIOL 642, 680, 682, 685; CE 603, 661, 683, 684; CHEM 631, 655; ENVE 658; GE 620; MATH 608, 615.

Environmental Science and Management

a. Complete five of the following courses
- ENVE 641—Aquatic Chemistry 3
- ENVE 644—Environmental Management and Law 3
- ENVE 647—Biotechnology 3
- ENVE 649—Hazardous and Toxic Waste Management 3
- ENVE 651—Environmental Risk Assessment 3
- ENVE 652—Toxicology for Engineers and Scientists 3

b. Complete the following
- ENVE 650—Seminar* (1) 2
- ENVE 653—Measurements Laboratory 1
- ENVE 698—Project 3
  - or ENVE 699—Thesis 6
- Approved electives** 6-9

c. Minimum credits required 30

** Complete two semesters at 1 credit each.*

*** Electives as approved by the student's committee (6 credits for thesis option; 9 credits for project option). For Environmental Engineering candidates, 6 elective credits must be from the following: CE 663, ENVE 642, 643, 645, 646 and 648.*

Note: In addition to the courses listed in any of the concentration areas, electives include but are not limited to: BIOL 642, 680, 682, 685 CE 603, 661, 683, 684; CHEM 631, 655; ENVE 658; GE 620; and MATH 608, 615.

Water Supply and Waste Treatment

a. Complete the following
- ENVE 641—Aquatic Chemistry 3
- ENVE 645—Unit Processes—Chemical and Physical 3
- ENVE 646—Unit Processes—Biological 3
- ENVE 647—Biotechnology 3
- ENVE 650—Seminar* (1) 2
- ENVE 653—Measurements Laboratory 1
- ENVE 698—Project 3
  - or ENVE 699—Thesis 6
- Approved electives** 6-9

b. Complete one of the following
- ENVE 643—Air Pollution Management 3
- ENVE 648—Solid Waste Management 3
- ENVE 649—Hazardous and Toxic Waste Management 3

c. Minimum credits required 30

** Complete two semesters at 1 credit each.*

*** Electives as approved by the student's committee (6 credits for thesis option; 9 credits for project option).*

Note: In addition to the courses listed in any of the concentration areas, electives include but are not limited to: BIOL 642, 680, 682, 685; CE 603, 661, 683, 684; CHEM 631, 655; ENVE 658; GE 620; MATH 608, 615.

See Arctic Engineering.
See Civil Engineering.
See Engineering for Ph.D. program.
See Engineering Management.
See Science Management.