ENVIRONMENTAL ENGINEERING AND ENVIRONMENTAL QUALITY SCIENCE

College of Engineering and Mines
Department of Civil and Environmental Engineering
907-474-6129
http://cem.uaf.edu/cee/environmental-engineering/

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.

Environmental Engineering, M.S. Degree

This program is presently suspended.

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 228).
3. Complete the master's degree requirements (page 228).
4. Complete the thesis or non-thesis requirements for one of the environmental engineering and environmental quality science concentration areas listed below.

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 228).
3. Complete the master's degree requirements (page 228).
4. Complete the thesis or non-thesis requirements for one of the environmental engineering and environmental quality science concentration areas listed below.

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

Environmental Contaminants

a. Complete the following
CE F663—Groundwater Dynamics....3
ENVE F641—Aquatic Chemistry....3
ENVE F642—Contaminant Hydrology....3
ENVE F647—Biotechnology....3
ENVE F649—Hazardous and Toxic Waste Management....3
ENVE F650—Seminar* (1)....2
ENVE F653—Measurements Laboratory....1
ENVE F698—Non-thesis Research/Project (3)
or ENVE F699—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 F642, F680, F682, F685; CE F603, F661, F683, F684; CHEM F631, F655; ENVE F658; GE F620; MATH F608, F615.

Environmental Science and Management

a. Complete five of the following courses
ENVE F641—Aquatic Chemistry....3
ENVE F644—Environmental Management and Law....3
ENVE F647—Biotechnology....3
ENVE F649—Hazardous and Toxic Waste Management....3
ENVE F651—Environmental Risk Assessment....3
ENVE F652—Toxicology for Engineers and Scientists....3

b. Complete the following
ENVE F650—Seminar* (1)....2
ENVE F653—Measurements Laboratory....1
ENVE F698—Non-thesis Research/Project (3)
or ENVE F699—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 F663, ENVE F642, F643, F645, F646 and F648.*
Note: In addition to the courses listed in any of the concentration areas, electives include but are not limited to: BIOL F642, F680, F682, F685 CE F603, F661, F683, F684; CHEM F631, F655; ENVE F658; GE F620; and MATH F608, F615.

Water Supply and Waste Treatment

a. Complete the following
ENVE F641—Aquatic Chemistry....3
ENVE F645—Unit Processes — Chemical and Physical....3
ENVE F646—Unit Processes — Biological....3
ENVE F647—Biotechnology....3
ENVE F650—Seminar* (1)....2
ENVE F653—Measurements Laboratory....1
ENVE F698—Non-thesis Research/Project....3
or ENVE F699—Thesis....6
Approved electives**....6-9

b. Complete one of the following
ENVE F643—Air Pollution Management....3
ENVE F648—Solid Waste Management....3
ENVE F649—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 F642, F680, F682, F685; CE F603, F661, F683, F684; CHEM F631, F655; ENVE F658; GE F620; MATH F608, F615.

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