

Environmental Engineering Graduate Certificate

The Environmental Engineering graduate program combines those aspects of Chemical, Civil, and Geological Engineering most applicable to environmentally related problems. This program is, to our best knowledge, unique in the combination of these three disciplines for the training of graduate students in environmental engineering. These interdisciplinary M.S., M.Engr., and Certificate programs provide high-quality education and skill development opportunities, preparing students to be professionally successful, to be life-long learners, and to be knowledgeable, contributing members of a multicultural, global society.

The faculty of the three participating departments and participating UND Energy and Environmental Research Center (EERC) personnel represent a tremendous wealth of environmental expertise based on past and current field and laboratory research, consulting experience, professional organization involvement, and formal continuing education and technical training. They also have strong working relationships with personnel from a wide variety of industries, municipalities, consulting firms, governmental agencies, and research-funding organizations. These relationships will provide many opportunities for collaboration and research, which will be beneficial to all stakeholders of the programs.

Admission Requirements

The applicant must meet the School of Graduate Studies' current minimum general admission requirements as published in the graduate catalog.

1. Bachelor of Science degree in an ABET accredited engineering program in Environmental, Chemical, Civil, or Geological Engineering.
2. Students holding a B.S. degree in other engineering disciplines or in a science field with an appropriate background in chemistry, fluid mechanics, and mathematics may also be admitted.
3. An overall undergraduate GPA of at least 2.50 or 3.00 for the last two years.

The courses taken in a previously completed Environmental Engineering Certificate Program may be applied to a Master's degree in Engineering.

Certificate Requirements

1. A total of nine (9) credit hours must be completed in Graduate level courses listed as Environmental Engineering, Chemical Engineering, Civil Engineering, Geology, or Geological Engineering, and identified as qualified courses for the certificate.
2. A minimum GPA of 3.00 is required to earn the certificate.

Courses shall only count as credit toward fulfilling the requirements listed above when a grade of C or greater has been awarded at the completion of the course.

Faculty and Areas of Expertise

- **Steven Benson, Chemical Engineering** – Efficient and clean utilization of renewable and fossil fuels in gasification and combustion systems; Ash formation and fireside ash deposition; Carbon products; Carbon dioxide separation and capture
- **Frank Bowman, Chemical Engineering** – Atmospheric aerosols, organic aerosol partitioning, mathematical modeling of multicomponent aerosols, air quality modeling, educational technology, assessment of student learning, educational air pollution models
- **Philip Gerla, Geological Engineering** - Hydrogeology, Environmental Geology, Wetlands, Geographic Information Systems
- **Harvey Gullicks, Civil Engineering** - Water and Wastewater Treatment and Contaminated Media Remediation
- **Scott Korom, Geological Engineering**- Groundwater Remediation, Modeling, Denitrification

- **Gautham Krishnamoorthy**, Computational fluid dynamics, simulations of combustion reaction flows, carbon capture technologies, radiative heat transfer.
- **Michael Mann, Chemical Engineering** - Performance issues in advanced energy systems firing coal and biomass, emission control, renewable energy systems, and the development of energy strategies based on thermodynamics and economics.
- **Charles Moretti, Civil Engineering** - Environmental Engineering, Water Treatment
- **Wayne Seames, Chemical Engineering** - Mitigation of the environmental impact of heavy metals, trace element partitioning from combustion and incineration, alternative fuels development, new products and improved processing of agriculture, biochemical unit operations, environmental impacts from wood and concrete contamination.
- **Robert Wills**, Non-thermal drying of solids by chemical dehydration, vegetative oil extraction and product enhancement.
- **Lance Yarborough, Geological Engineering** - Engineering geology, Remote sensing, Geospatial analysis, Environmental remediation

Contact Information

Dr. Gautham Krishnamoorthy, Graduate Director
Department of Chemical Engineering
University of North Dakota
241 Centennial Drive Stop 7101
Grand Forks, ND 58202-7101

P: 701-777-6699
F: 701-777-3773
E: gautham.krishnamoorthy@engr.und.edu

The College of Engineering and Mines also offers a Master of Science degree and a Master of Engineering degree in Environmental Engineering.