**Department of Environmental Sciences and Engineering**
**University of North Carolina at Chapel Hill**
**Master of Science in Environmental Engineering (MSEE) Degree Requirements**

**Director**
William Vizuete
vizuete@unc.edu
(919) 966-0693
1302 MHRC

**Program Website**
https://sph.unc.edu/envr/msee-program/

**Degree Competencies**

1. Define problems, needs, and objectives for which environmental engineering is relevant
2. Evaluate problems quantitatively using measurements or models (statistical, empirical, and/or mechanistic) of engineered systems or impacted natural environments.
3. Develop and design appropriate solutions which use technologies, facilities, monitoring, controls, or policies to solve environmental engineering problems.
4. Evaluate the effects of environmental engineering designs and assess the uncertainty involved in environmental systems.
5. Obtain a broad exposure to contemporary issues in environmental sciences, environmental health, and environmental engineering.

Assessment activities for these competencies are fulfilled through the successful completion of all degree requirements, including formal course work and a comprehensive oral examination, at which time the master's technical report is presented and defended. Students may also prepare other reports; present their work at seminars and at national or international meetings; and publish in the peer-reviewed literature.

**Degree Requirements**
Students may be admitted to the MSEE degree program if they have completed an undergraduate curriculum in engineering from an ABET-accredited program or from a foreign institution with an equivalent program. Once admitted, the following requirements must be met:

**(1)** Students and their advisors should develop a written coursework plan during the first semester of study.

**(2)** Students must complete at least 12 hours of engineering coursework offered in the Department of Environmental Sciences and Engineering (see attached list) or graduate-level engineering courses from another institution. Courses taken at another institution must be approved by the student's advisor, and must not have counted toward an undergraduate degree elsewhere, if they are to count towards this requirement.

**(3)** Students who have not already had an undergraduate or graduate course in probability and statistics and an undergraduate or graduate course in the biological sciences must take an appropriate course on each topic while in the MSEE program. The acceptability of courses to fulfill these requirements should be decided after consultation with the student's advisor.

**(4)** MSEE student committees for the Technical Report must include at least two members from among the environmental engineering faculty. At least one committee member must hold a degree in engineering as noted in the list of engineering faculty.

**(5)** MSEE students must meet all other requirements of the Department, Gillings School of Global Public Health and the Graduate School. These requirements include:

- ENVR 400, ESE Seminar (1 credit) (Departmental requirement)
- ENVR 989, Envr. Crisis Management (Departmental requirement)
- A course in the principles of public health (3 credits) (School requirement)
- A course in epidemiology for environmental scientists (3 credits) (School requirement)
- A minimum of three credits for ENVR 992, Master's Technical Report (Graduate
- School requirement)
- A minimum of 24 credits in formal coursework (excludes credits for research, ENVR 400, ENVR 992) (Departmental requirement)
- A minimum of 12 credits in formal coursework must be an engineering elective (Departmental requirement)
- A minimum of 30 credits NOT including ENVR 400 (Graduate School and Departmental requirements)
- A minimum of 24 credits in residence; i.e., credit obtained through registration at UNC- CH (Graduate School requirement)

**(6)** In accordance with Graduate School rules, up to six credits toward the MSEE degree requirements can be transferred from graduate courses taken at a previously-attended institution if the course(s) were not counted toward requirements for the undergraduate degree.

**Experiential Course**
All students required to take the experiential course Environmental Crisis Management offered in Spring Semester. This will be a culminating experience that features a multi-disciplinary team and a real-time simulation of environmental and humanitarian emergencies such as a train derailment, major chemical spill, disease outbreak, or population displacement.

**One Year Program MSEE Technical Report**: An integrated Technical Report that focuses on a problem during the Environmental Crisis Management course. In addition to the Technical Report, the project will be presented orally as part of the final comprehensive examination.

**Two Year Program MSEE Thesis:** A thesis based on requirements outlined in the Master Degree and consultation of the research advisor. In addition to the thesis, an oral examine is required.

**Courses in ESE**
Please refer to the MSEE website (https://sph.unc.edu/envr/1yrmsee/) for the latest listings of courses. The website shows the courses listed as engineering electives that can be chosen and other courses in ESE that may be of interest to students in the MSEE program. Note that the general electives do not count toward the 12 hours of engineering coursework required for the MSEE degree.