



# Environmental Health Sciences Major

Bachelor of Science in Public Health

[www.sph.unc.edu/ese](http://www.sph.unc.edu/ese)

- The major in environmental health sciences focuses on the interface between people and the environment. In addition to a general concentration, our curriculum allows the option to specialize in **Environmental Health Biology**, **Environmental Chemistry**, or **Environmental Physics**.
- Core competencies include specifying approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.
- Research and teaching encompass the chemical, biological, toxicological, and physical aspects of environmental and engineered processes, as well as the social, political, and legal considerations involved in managing the quality of our water, soil, and air resources.
- **Accelerated Master's options** allows a student to complete a research based Master of Science in Public Health or Master of Science degree in 1 additional year (open to students from other BS STEM majors on campus).

## What are the strengths of our undergraduate major in Environmental Health Sciences?

**Our supportive learning environment:** The small size of our major (20-30 students per cohort), coupled with faculty and staff commitment to student success, helps create a very supportive learning environment.

**The applied nature of our curriculum:** Students in our major can participate in research alongside graduate students and postdocs. Recent student projects have focused on water purification (chemical and microbiological); genetic tracking of malarial infections; aerosol formation in the atmosphere; dermal exposure to chemicals in work environments; food insecurity in migrant communities; and many more areas.

**Who should apply?** Students should apply to the major if interested in identifying the key environmental factors that affect human health, understanding the mechanistic basis for human and environmental health effects, evaluating the potential impact of emerging environmental threats, and formulating appropriate control measures.

## What are the admission requirements and prerequisite courses for this major?

- Visit [Application Deadlines & How to Apply](#) for more information
- Online application, 2 letters of recommendation (at least one from someone able to evaluate your academic qualifications), personal statement, resume
- 3.0 Cumulative GPA in order to be eligible to apply
- Approximately 60 credit hours completed (we are typically a junior entry major)
- Recommended: Complete all General College requirements in your first 2 years at UNC
- Course credits via transfer, AP exams, and UNC courses are acceptable for prerequisites
- Many of your prerequisite courses should be completed at the point of application submission
- Applicants should earn a grade of C (not C-) or better in all prerequisite courses
- **Prerequisite courses/complete at least 1 course in 3 of the following 5 groups**

### Group 1/BIOLOGY:

- BIOL 201: Ecology and Evolution

- BIOL 202: Molecular Biology and Genetics

**Group 2/CHEMISTRY:**

- CHEM 102/102L: General Descriptive Chemistry II & Lab
- CHEM 261: Introduction to Organic Chemistry

**Group 3/PROGRAMMING:**

- COMP 116: Introduction to Scientific Programming (or approved alternatives)

**Group 4/MATHEMATICS:**

- MATH 231: Calculus of Functions of One Variable I or MATH 241: BioCalculus I
- MATH 232: Calculus of Functions of One Variable II or MATH 283: BioCalculus II
- MATH 233: Calculus of Functions of Several Variables

**Group 5/PHYSICS:**

- PHYS 114: General Physics I or PHYS 118: Introductory Calculus-based Mechanics and Relativity
- PHYS 115: General Physics II or PHYS 119: Introductory Calculus-based Electromagnetism and Quanta
- \*\*For transfer students not currently at UNC only/PHYS 104: General Physics I
- \*\*For transfer students not currently at UNC only/PHYS 105: General Physics II

**Major Requirement/General Concentration (once admitted/grade of C or better)**

- SPHG 351: Foundations of Public Health
- SPHG 352: Public Health Systems and Solutions
- EPID 600: Principles of Epidemiology for Public Health
- BIOS 600: Principles of Statistical Inference
- ENVR 205: Engineering Tools for Environmental Problem Solving
- ENVR 230: Environmental Health Issues
- ENVR 403: Environmental Chemistry Processes
- ENVR 430: Health Effects of Environmental Agents
- 3 credits: Senior Capstone, Practicum, Research, or Honors Thesis
- 6 credits: Advanced ENVR elective courses numbered 400+ (restrictions apply)

**Accelerated Master's Option**

The Accelerated Master's option allows a student to complete a research based Master of Science (MS) or Master of Science in Public Health (MSPH) degree in one additional, contiguous year. **Note that students from other Bachelor of Science STEM fields on campus are welcome to apply.**

Students progressing to the MS and MSPH can transfer up to twelve hours of graduate-level (400 or above) coursework. The program requires advanced planning from the student and their advisor during their junior year and it is strongly recommended that students identify an advisor and make progress toward their master's research as early as possible, preferably by their senior year.

**Post-Graduation Destinations**

Recent graduates have entered graduate programs in environmental science, microbiology, marine science, applied mathematics, and environmental engineering. Students who pursued employment after completing the major are working in environmental advocacy organizations, environmental consulting firms, industry, and investment banking firms.