COLUMBIA | MAILMAN SCHOOL OF PUBLIC HEALTH

ENVIRONMENTAL HEALTH SCIENCES

MS in EHS
Environmental Health Data Science
Student Handbook

2025 – 2026 Academic Year

This handbook has been created to ensure EHS students are familiar with Department and School procedures and protocol.

Important resources:
EHS Department website
Official MSPH handbook

Questions should be directed to Nina Kulacki, Director of Academic Programs, or Dr. Sen Pei, Director of the EHS MS DS Program

For a detailed academic calendar for 2025-26, please see the Mailman Academic Calendar.

Academic Honesty & Honor Code: All candidates are expected to adhere to the required standards for academic and scientific integrity, which can be found here.

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Advising and Administrative Resources

Faculty Advisor

Each student is assigned an EHS faculty advisor at the start of the program. Students are expected to ***meet with their advisor at least once per semester*** to review their course plan prior to the end of the add/drop period. It is important for students to be proactive in scheduling these meetings and checking in with their advisor periodically. Students must also contact their advisor to discuss the details of their required Thesis.

Regardless of one's assigned faculty advisor, students are welcomed and encouraged to meet with any faculty member in the Department and with Nina Kulacki. Questions, or requests to change an assigned faculty advisor, should be directed to Ms. Kulacki.

Academic Programs Office in EHS

The MS in EHS, Environmental Data Science Program Director, Dr. Sen Pei, and the Academic Director of Academic Programs, Nina Kulacki, are the primary points of contact in the Department for issues related to the academic program. They implement policies established by the Columbia University Mailman School of Public Health (*CUMSPH*) and by the Department of Environmental Health Sciences (*EHS*). Additionally, they can provide information about program requirements and address any questions or concerns.

Writing Center Resource

The Writing Center provides writing support to undergraduate and graduate students. In one-on-one consultations and workshops, our consultants offer feedback and strategies to help you improve at every stage of your writing, from brainstorming to final drafts.

Teaching Assistant (TA) Opportunities for EHS Department-based Courses

Any full-time EHS student in good standing may request to be a TA for an EHS course by contacting Nina Kulacki.

Please note: *Students in their first semester are NOT typically eligible to TA.*

Requirements for consideration: Students who TA in EHS must:

- Be a full-time student in good academic and conduct standing.
    - The applicant's academic and behavioral standing will be confirmed prior moving to the next stage of the application process.
- Participate in assigned/needed CourseWorks/Canvas training session(s).
- Participate in required EHS AV training.
- Be able to devote up to 10 hours per week to the TA-ship. This may include, but is not limited to:
    - Time spent in class (*students should be available to sit in the course for the duration of the semester*).
    - Time spent outside of class for scheduled office hours, grading, and preparation of teaching materials, which might also include time prior to the semester in which the course is scheduled.
        - ***Note:*** All students must be available to hold office hours outside of the regular course meeting time if this is required for the course. Office space requests should be sent via email to Brandy Coleman.

Compensation

- TA compensation for the 2025-26 academic year is based on a $29.51 per hour model. The salary amount in the final offer letter will be the set amount for the position assigned to a student.

To be considered for an EHS TA position

- Respond to the call for applications – sent by Nina Kulacki with the details of the requested course and semester offering.
- Nina Kulacki will confirm all TA appointments via email. Students will then be directed to the EHS Business Office to complete payroll documents prior to the semester in which they will serve as a TA.

Other TA opportunities in the School

There are also School-wide TA opportunities available in the Core courses. These TA positions are managed by the Office of Educational Initiatives. All students will receive notification of these opportunities through School-wide emails and should reply to that request at that time.

EHS MS Environmental Health Data Science Degree Requirements

1. EHS Department core course requirements
2. Program coursework
3. Required participation in EHS events
4. Thesis Requirement
5. APEx requirement

This program is designed to be completed in 12 months, but can be completed on a part-time basis. Please discuss the part-time option with Nina Kulacki and Sen Pei.

Course Requirements/Schedule

Semester	Course #	Course Name	Credits
Fall 2025	P6300	Environmental Health Sciences	3
	P8105	Data Science I	3
	P8130	Biostatistical Methods I	3
	P6400	Principles of Epidemiology I	3
	Pick one 3-credit course (or multiple 1.5 cr courses) from this list: • P8307 Molecular Epidemiology (3 cr) • P8312 Principles of Toxicology (3 cr prerequisite: chemistry & biology) • P8335 Quantitative Methods in Biomarkers Research (1.5 cr) • P8336 Experimental Methods in Biomarkers Research (1.5 cr) • P6350 Exposure Assessment (1.5 cr)		The total selective credits required for this degree = 6
		Total Fall Credits	15
Spring 2026	P8322	Environmental Determinants of Human Health II	3
	P8106	Data Science II	3
	P8131	Biostatistical Methods II	3
	P8371	Public Health GIS	3
	P8332	Advanced Analytic Methods in EHS	3
	Pick one 3-credit course (or multiple 1.5 cr courses) from this list: • P8334 Computational Toxicology (3 cr - prerequisite: chemistry & biology) • P6351 Introduction to Network Science (3 cr) • P6385 Principles of Genetics & the Environment (3 cr) • P8329 Water, Sanitation, and Human Health (3 cr) • P8383 Foundations in Environmental Justice: From Theory to Action (1.5 cr) • P8451 Machine Learning for Epidemiology and Public Health (3 cr) • P8477 Epi Modeling for Infectious Disease (3 cr)		The total selective credits required for this degree = 6
		Total Spring Credits	18
Summer 2026	P9361	Thesis (Master's Essay)	3
		Total Summer Credits	3
		Total Credits for MS	36

Attendance at Professional Development, Seminars, and Other Required Student Meetings

Every Wednesday, in both Fall and Spring semesters of year 1, all full-time first-year master's students in EHS attend a required lunch meeting. This meeting offers students an opportunity to interact with faculty members and current students in EHS and to address important professional development topics. Attendance is taken each week.

All full-time students must attend at least 3 of the Wednesday meetings per month. If it is necessary to miss a meeting, the student must email Nina Kulacki prior to that date.

Examples of required meetings:

- All master's student meetings
- Casual Conversations and Professional Development
- EHS Speed Networking event
- EHS Alumni Panel

Thesis

All EHS MS students are required to complete a thesis. For these students, the thesis should be directly informed by the research/work for their applied practice experience (APEx). **It is critically important that students identify a possible thesis topic and work with their faculty advisor to identify and confirm a timeline for completion.**

Guidelines for the written thesis are in the table here:

Section	Content	Pages
Abstract	• A hypothesis should be included in the abstract section that states the problem and results from the study	1 – 2 pages
Table of Contents	• Include major sections and subsections	1 page
Introduction	• A review of current relevant literature	10 – 15 pages
Methods	• A detailed description of methods used in the study	5 – 8 pages
Results	• This reveals relevant data generated from the study	10 – 15 pages
Discussion	• A discussion of how the data supports or contradicts the stated hypothesis and future directions	5 – 10 pages

Suggested MS Thesis Timeline

Note: *MS students should use the table below to identify milestone dates for thesis completion. This table serves as a guide for those steps. Students must work directly with their Faculty Advisor to set these deadlines.*

Milestone	Student Submission Deadlines (to Advisor)	Deadlines for Advisor Feedback (to Student)
Outline		
Introduction		
Results/ Data		
Methods		
Discussion/ Abstract		
Final Draft to 2nd Reader*		
Final Paper to Advisor for Grade		***For full-time students, this is typically the 2nd week in August. This gives faculty enough time to review and grade the thesis by the deadline for summer grade submission.**

***Please refer to the MSPH Academic Calendar for important deadlines posted by the School.**

APEx Requirement (Applied Practice Experience)

MS students are required to complete a practical experience requirement (*APEx*). For full-time students, this requirement is completed during the summer after the 2 semesters of coursework. *Part-time students will discuss their specific APEx plans with their Advisor and the Director of Academic Programs*. However, some students request approval to fulfill this requirement during the school year.

The range of completed hours typically falls between 150-300 hours but should not be less than 150 hours.

The APEx may take a variety of forms, depending on the student's area of interest. Most MS students opt to conduct research for their APEx and use this as the basis of their thesis. However, there is the option of doing a APEx such as:

- working with a government agency
- working in a community-based organization
- working with an organization or company that is approved by the MS DS Program Director

MS students must meet all the following practical experience requirements to graduate:

- Obtain approval from a faculty advisor prior to accepting a position.
- Work with their advisor on the required thesis. The thesis advisor may be the person with whom they conduct research, but all students must have an EHS Faculty reader for their final thesis submission. Students are encouraged to meet with Dr. Sen Pei and their faculty mentor.

EHS APEx Competencies

The EHS APEx should meet one or more of the following competencies:

- Apply the principles of exposure assessment to evaluate human exposures to environmental and occupational hazards.
- Apply and synthesize content learned through coursework in environmental health sciences that can be applied to practice in a professional setting.
- Demonstrate an understanding of the complexities of the EHS field and how major stakeholders collaborate with the goal of informing public and private constituency groups of environmental outcomes.
- Involve a topic that is relevant to EHS such as exposure assessment, climate change, environmental policy or toxicology. They can include laboratory studies, field studies, data analysis or study design. The APEx can take place in academia, a government agency, private companies or non-government agencies.
- Identify biological mechanisms whereby environmental and/or occupational agents adversely affect human health.
- Identify factors that affect susceptibility to adverse human health effects of environmental and/or occupational agents.
- Recommend interventions for reducing human exposures to environmental and occupational hazards.
- Communicate effectively, in writing and orally, knowledge of environmental hazards to other professionals and the public, including effective risk communication.
- Knowledge within the area of Molecular Epidemiology, Toxicology, Occupational Health, Industrial Hygiene, Climate Change, or Environmental Policy.

Graduation Procedures

To receive the MS degree, students must apply through the School systems. Form submission details and deadlines are set by the School.

Note: *Full-time students will complete the program in August, thus they will receive their degree in October.*

August 1 for October degrees
December 1 for February degrees
February 1 for May degrees

The Mailman School of Public Health convenes one commencement ceremony annually. All graduates from that academic year are invited to participate in the May ceremony. If a student would like to participate in the ceremony, it is expected that they have completed all course requirements or will complete the final courses over the summer.

If a student applies for graduation but does not meet degree requirements at that time, their application will be moved to the following degree conferral date. The student should request a meeting with Nina to review and confirm the plans for successful program completion.

Alumni Information

Contact with the Department

Upon completion of the program, we request that students provide the following information to Nina Kulacki (*typically requested via a survey*):

- Forwarding US mailing address
- Forwarding (*non-Columbia*) email address
- Details of next position (*if known*)

Important information about your Columbia email address upon graduation

Upon graduation, email addresses are slated for termination. If students would like to continue using their Columbia email address after graduation, they should review the details found at this link.