

Epidemiology, MS

Learning Outcomes

Graduates will be able to:

- define the concepts and content of epidemiology;
- formulate a research hypothesis;
- determine a study aim, objectives, and appropriate design to address a hypothesis;
- apply concepts of ethics to research practice;
- develop study procedures and data collection instruments for conducting a study;
- collect data and manage data quality;
- use existing databases to provide supportive data to address a research question;
- analyze data for a research study; and
- compose an understandable and presentable report of research results.

Requirements

The Master of Science program in epidemiology requires at least 39 s.h. of graduate credit and is offered with or without thesis. Students who choose to complete the degree without thesis are required to pass a comprehensive examination. All students must maintain a cumulative grade-point average (GPA) of at least 3.00. Those who receive a grade of C in 7 s.h. of coursework may be dismissed from the program.

Students are required to attend 80% of all Department of Epidemiology seminar meetings and journal club meetings for three semesters. They must present one scientific poster at the departmental level before they may graduate, and the department recommends that they present at the international, national, regional, state, or university level before graduating.

The Master of Science with a major in epidemiology requires the following coursework.

Core Courses

Students must take CPH:7270 Principles of Scholarly Integrity: Public Health during their first year in the fall semester (enroll for 0 s.h.) and in the spring semester (enroll for 1 s.h.). They must retake CPH:7270 if they completed the course more than four years ago or if they have changed degree programs.

Students enrolled part-time (less than 9 s.h.) who have a graduate research assistantship appointment may choose to register in EPID:5925 Epidemiology Journal Club: Evaluating the Literature for 1 s.h.; however, the credit earned for this course will not be applied toward the minimum semester hours required for the MS in epidemiology.

Students with a strong biosciences background may choose to substitute PATH:5270 Pathogenesis of Major Human Diseases in place of PATH:8133 Introduction to Human Pathology for Graduate Students if it better complements their training plan. This is an advanced course that requires a strong foundation in molecular biology and related disciplines but may be suitable for some students.

Course #	Title	Hours
All of these:		
EPID:4400	Epidemiology I: Principles	3

EPID:5600	Introduction to Epidemiology Data Management and Analysis	3
EPID:5610	Intermediate Epidemiology Data Analysis with SAS and R	3
EPID:5925	Epidemiology Journal Club: Evaluating the Literature	0-1
EPID:6400	Epidemiology II: Advanced Methods	4
BIOS:4120	Introduction to Biostatistics	3
BIOS:5120	Regression Modeling and ANOVA in the Health Sciences	3
CPH:6100	Essentials of Public Health	2
CPH:7270	Principles of Scholarly Integrity: Public Health (taken first year in the fall semester for 0 s.h. and in the spring semester for 1 s.h.)	0-1

One of these:		
PATH:5270	Pathogenesis of Major Human Diseases	3
PATH:8133	Introduction to Human Pathology for Graduate Students	3-4
One of these:		
EPID:6550	Epidemiology of Infectious Diseases	3
EPID:6600	Epidemiology of Chronic Diseases	3
One of these:		
EPID:5950	Preceptorship in Epidemiology (for nonthesis students)	3
EPID:7000	Thesis/Dissertation (for thesis students; may be taken twice)	3

Electives

Students must earn a minimum of 6 s.h. in elective coursework from Department of Epidemiology courses (prefix EPID) and 2 s.h. in additional graduate coursework pertinent to a student's educational goals and background (total elective requirement: 8 s.h.; the additional 2 s.h. may be earned in an epidemiology course or in another graduate course, with the advisor's approval).

The following courses are examples of recommended courses that can be taken outside of epidemiology toward the elective requirement.

Course #	Title	Hours
BIOS:6210	Applied Survival Analysis	3
BIOS:6310	Introductory Longitudinal Data Analysis	3
CBH:5220	Health Behavior and Health Education	3
HMP:4000	Introduction to the U.S. Health Care System	3
OEH:4240	Global Environmental Health	3

Students may need additional elective coursework in order to complete the minimum 39 s.h. required for the degree.

Other Requirements

Department of Epidemiology Seminar

Every week during the academic year, the Department of Epidemiology seminar provides a forum for speakers to present information or research pertaining to diverse topics in epidemiology. Contact information for the seminar coordinators is located on the Department of Epidemiology website under Preceptorship, Journal Club, and Seminar Contacts. Information about the schedule is distributed each semester and also is available on the University of Iowa Events Calendar. Students are expected to achieve at least 80% attendance at the seminar during each semester of enrollment.

Journal Club for First-Year Students

Journal Club for first-year students is for those who are new to the department and is offered in the fall semester. The focus is for students to gain experience in reading, interpreting, and critically evaluating recently published journal articles. Students should register in EPID:5925 Epidemiology Journal Club: Evaluating the Literature, section 1.

Journal Club

Every other week during the academic year, the Journal Club meets to discuss articles of interest in the field. Contact information for the Journal Club coordinators can be found on the Department of Epidemiology website under Preceptorship, Journal Club, and Seminar Contacts. Information about the schedule is distributed to students each semester. Students are required to achieve at least 80% attendance at Journal Club for three semesters during their time in the program.

Scientific Poster Requirement

Every student is required to present at least one scientific poster at the department level and is encouraged to present at the international, national, regional, state, or university level at some point prior to graduation. A student's advisor or thesis/preceptorship mentor can help determine the suitability and timeline for the poster presentation.

For nonthesis students, this poster requirement takes the place of an oral seminar presentation as part of the preceptorship requirement. Nonthesis students would typically formulate preceptorship research into a poster presentation, though the requirement may be met by a poster presentation of other research, such as from an independent study or research related to employment.

For thesis students, the poster requirement is in addition to the oral seminar presentation requirement for the thesis. Thesis students would typically formulate thesis research into a poster presentation, though the requirement may be met by a poster presentation of other research, such as from an independent study or research related to employment. The poster must be submitted for review to the student's advisor or thesis/preceptorship mentor a minimum of 10 days before the poster session. A Department of Epidemiology poster session is held at the end of the fall and spring semesters.

Master's Final Examination for the MS Without Thesis

The master's examination is a written in-class exam that measures the learning of epidemiological concepts and

knowledge of epidemiological thoughts as presented in required courses. This exam is offered twice per year.

Master's Thesis Defense for the MS With Thesis

The master's thesis defense is an oral presentation of the purpose, methods, and results of the thesis research. A specially formed committee thoroughly examines a student's area of knowledge associated with the context of the work. The goal of the thesis is a document that is publishable in a peer-reviewed journal.

Seminar Presentation for the MS With Thesis

In addition to the thesis defense, students are strongly encouraged and may be required by the thesis committee chair, to make a presentation at a Department of Epidemiology seminar. It is recommended that students complete the seminar presentation and dissertation defense in the same semester, with the seminar presentation scheduled before the master's thesis defense so the seminar can serve as preparation for the defense.

Combined Programs

Undergraduate Degree/MS

The Undergraduate to Graduate (U2G) program provides an opportunity for University of Iowa students interested in health science to earn their undergraduate and graduate degrees in five years. Undergraduate students should apply to the program by Feb. 1 of their junior year.

For additional information, visit MS in Epidemiology—Undergraduate to Graduate on the Department of Epidemiology website.

Admission

Applicants must apply through the Schools of Public Health Application Service (SOPHAS); they also must pay the required application fee to the Graduate College through the University of Iowa Office of Admissions when prompted. For detailed application information, visit How to Apply to the Department of Epidemiology on the department's website.

The epidemiology faculty considers several factors when evaluating applications for admission, including Graduate Record Exam (GRE) General Test scores, grade-point average, letters of recommendation, intent and motivation for graduate study, and research interests. Students with deficiencies in one area may be admitted if all other components of their application are very strong.

All applicants must hold a baccalaureate degree and have a cumulative grade-point average of at least 3.00. Undergraduate preparation must include two semesters of biological sciences and mathematics through algebra. Coursework in statistics is highly recommended.

All applicants and students are required to have strong written and oral communication skills.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations on the Graduate College website.

Application deadlines for fall admission are June 1 for U.S. citizens and April 15 for international applicants.

Financial Support

A limited number of graduate research assistantships are available for advanced students; for information, consult the department. For information on financing education through jobs, grants, and loans, contact the university's Office of Student Financial Aid.

Opportunities for funded predoctoral fellowships are available. Funded positions sponsored by federal agencies are available only to U.S. citizens.

Career Advancement

The program prepares graduate students for professional careers in which specialized knowledge of epidemiological methods and analytic techniques is essential. Graduates find employment in local, state, and federal health agencies; academic institutions; and private enterprises, such as hospitals, pharmaceutical and device companies, insurance companies, and foundations.