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 epidemiologic data with descriptive analysis and regression models, including linear and logistic regression; and
- compose an understandable and presentable report of research results.

Requirements

The Master of Science (MS) 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 must satisfy a final examination requirement; see the following section titled "Qualifying Examination for the MS Without Thesis." All students must maintain a Graduate College program grade-point average of at least 3.00.

Courses taken for the core, human pathology, and elective requirements must be taken on an A–F graded basis unless otherwise noted. Students must seek the permission of the program to apply coursework with grades of C or C-minus toward these three requirements. Students who receive a grade of C or lower in 7 s.h. of coursework may be dismissed from the program.

The MS in epidemiology requires the following coursework.

Core Courses

CPH:6100, CPH:7270, EPID:5950, and EPID:7000 may be taken on an S/U basis.

Students must retake CPH:7270 Principles of Scholarly Integrity: Public Health if they completed the course more than four years ago or if they changed degree programs.

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:6400	Epidemiology II: Advanced Methods	4
BIOS:4120	Introduction to Biostatistics	3
BIOS:5120/ IGPI:5120/ STAT:5610	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:		
EPID:6510/ OEH:6520	Injury Epidemiology	3
EPID:6550/ GHS: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)	3

Human Pathology Requirement

Students must complete a human pathology course for 3 s.h. Most students choose to enroll in HHP:4390 Understanding Human Disease. Alternatively, students with a strong biosciences background may choose to enroll in PATH:5270 Pathogenesis of Major Human Diseases 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.

Electives

Students must earn a minimum of 8 s.h. in elective coursework numbered 4000 or above, at least 6 s.h. of which must be from epidemiology courses (prefix EPID) excluding EPID:5925. The remaining 2 s.h., selected in consultation with the student's advisor, may be taken in an epidemiology course or other graduate coursework pertinent to the student's educational goals and background.

With the program's permission, students completing a thesis may exceed the required minimum in EPID:7000 Thesis/ Dissertation and apply up to an additional 3 s.h. toward elective credits, for a total maximum of 6 s.h. in the course. This course may be taken on an S/U graded basis.

The following courses outside of epidemiology can also be counted toward the elective requirement. With the permission of their advisor, students may be able to select additional courses not listed here.

Course #	Title	Hours
BIOS:6210/ IGPI:6210	Applied Survival Analysis	3
BIOS:6310/ IGPI:6310/ STAT:6550	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

Other Requirements

Epidemiology Journal Club

In addition to the courses previously listed, students are required to enroll in EPID:5925 Epidemiology Journal Club: Evaluating the Literature three times (typically the fall and spring semesters of their first year and the fall semester of their second year). Through the course, students gain experience reading, interpreting, and critically evaluating recently published journal articles.

Full-time students enroll in EPID:5925 for 0 s.h. Students enrolled part-time (less than 9 s.h.) who have a graduate research assistantship appointment may choose to register 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.

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.

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 is also 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.

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.

Qualifying Examination for the MS Without Thesis

The qualifying examination is a written in-class exam covering the competencies expected for Master of Science graduates. It specifically covers material from the following core courses: EPID:4400 Epidemiology I: Principles, EPID:6400 Epidemiology II: Advanced Methods, and BIOS:5120 Regression Modeling and ANOVA in the Health Sciences. This exam is offered twice per year.

Students who earn a grade of B or higher in each of the three courses addressed on the exam are not required to take the exam.

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 thesis 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. Separate application to each degree program is required.

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

Graduate Education

Graduate education prepares students with advanced knowledge and skills in specialized fields. At the University of Iowa, the Graduate College advocates for student-centered graduate education and supports equitable application of rules and policies across graduate programs.

Academics

University of Iowa graduate credentials are regulated by policies and requirements found in the Graduate College Manual of Rules and Regulations. This includes minimum grade-point average (GPA) requirements for academic standing and degree conferral. The Graduate College sets the minimum requirement. Individual graduate programs may establish higher GPA requirements.

Admissions

Graduate student applicants must meet admission requirements for both the Graduate College and the program to which they have applied. University of Iowa graduate admission requirements are published by the Graduate College and on the Graduate Admissions website.

Financial Support

Graduate students might be eligible for financial support. Several contingencies apply, including degree program and award type, satisfactory progress toward degree, satisfactory completion of all duties related to an appointment, and availability of funding. Graduate students should inquire directly with their program for more information about funding availability. The Graduate Student Employment Standards govern the employment relationship between the University of Iowa and all graduate teaching and research assistants in all matters except wages, which are covered by an existing collective bargaining agreement or the conditions of an applicable federal grant.

Admission

Applicants must apply through the Schools of Public Health Application Service (SOPHAS); they must also pay the required application fee to the Graduate College through University of Iowa 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 Examination (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.

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.

Academic Plans

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Epidemiology, MS

Course	Title	Hours
Academic Career		
Any Semester		
39 s.h. of graduate level coursework must be completed; graduate transfer credits allowed upon approval. More information is included in the General Catalog and on department website. [a, b]		
Graduate College program GPA of at least 3.00 is required. [c]		
	Hours	**0**
First Year		
Any Semester		
Students must attend the Department of Epidemiology seminar and are expected to achieve at least 80% attendance at the seminar during each semester of enrollment.		
	Hours	**0**
Fall		
BIOS:4120	Introduction to Biostatistics	3
CPH:6100	Essentials of Public Health	2
CPH:7270	Principles of Scholarly Integrity: Public Health [d]	0
EPID:4400	Epidemiology I: Principles	3
EPID:5600	Introduction to Epidemiology Data Management and Analysis	3
EPID:5925	Epidemiology Journal Club: Evaluating the Literature [e]	0 - 1
	Hours	**11-12**
Spring		
BIOS:5120	Regression Modeling and ANOVA in the Health Sciences	3
CPH:7270	Principles of Scholarly Integrity: Public Health [d]	1
EPID:5610	Intermediate Epidemiology Data Analysis With SAS and R	3
EPID:5925	Epidemiology Journal Club: Evaluating the Literature [e]	0 - 1
EPID:6400	Epidemiology II: Advanced Methods	4
	Hours	**11-12**
Second Year		
Any Semester		
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. [f]		

Students must attend the Department of Epidemiology seminar and are expected to achieve at least 80% attendance at the seminar during each semester of enrollment.

	Hours	**0**
Fall		
EPID:5925	Epidemiology Journal Club: Evaluating the Literature [e]	0 - 1
EPID:6550	Epidemiology of Infectious Diseases [g]	3
HHP:4390	Understanding Human Disease [h]	3
Elective course [i]		3
	Hours	**9-10**
Spring		
EPID:5950	Preceptorship in Epidemiology	3
EPID:6510 or EPID:6600	Injury Epidemiology [g] or Epidemiology of Chronic Diseases	3
Elective course [i]		3
Elective course [i]		2
Confirm completion of degree requirements with program [j]		
	Hours	**11**
	Total Hours	**42-45**

a All core courses except CPH:6100, CPH:7270, EPID:5950, and EPID:7000 must be taken on an A-F graded basis.

b Students must complete specific requirements in the University of Iowa Graduate College after program admission. Refer to the Graduate College website and the Manual of Rules and Regulations for more information.

c Graduate College program GPA is comprised of all courses that are approved degree requirements. If a student takes more than the minimum required number of semester hours to complete the degree, but all courses taken are eligible to count toward the degree, those courses will be included in the Graduate College program GPA.

d Taken in the fall and spring of first year for 0 s.h. and 1 s.h., respectively.

e Full-time students enroll in EPID:5925 for 0 s.h. Students enrolled part-time (less than 9 s.h.) who have a graduate research assistantship appointment may choose to register 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.

f 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. A student's advisor or thesis/preceptorship mentor can help determine the suitability and timeline for the poster presentation.

g Students are required to take one course from EPID:6550, EPID:6510, EPID:6600. EPID:6550 is offered every fall semester; EPID:6510 and EPID:6600 are offered in the spring semesters of even numbered years.

h Students must take a human pathology course on an A-F graded basis. Most students enroll in HHP:4390, but those with a strong biosciences background may choose to enroll in PATH:5270.

i Students must earn a minimum of 8 s.h. in elective coursework numbered 4000 and above, 6 s.h. of which must be from Department of Epidemiology courses (prefix EPID). The remaining 2 s.h., selected in consultation with the student's advisor, may be taken in an epidemiology course or other graduate coursework pertinent to the student's educational goals and background.

j May include a qualifying exam that measures learning of epidemiological concepts and knowledge of epidemiological thoughts as presented in required courses; offered twice per year. See General Catalog and consult program for information and timing.