Epidemiology, M.S.

Epidemiology is the scientific discipline primarily concerned with identifying the distribution and causes of disease in populations. It encompasses a rich methodology including observational and experimental study designs, statistical methods, an understanding of pathogens, environmental and behavioral risk factors, and human biology. Epidemiological methods have evolved to meet threats of global infectious diseases and the complex health challenges presented by an aging population, as well as to capitalize on the expanding understanding of human genetics. As the fundamental discipline of public health, epidemiology provides essential knowledge to design, implement, and assess approaches to effectively prevent disease and improve quality of life in the population.

The research-oriented degree programs are designed to provide rigorous training to develop students’ abilities to synthesize knowledge and skills needed to address today’s health-related problems. Faculty, staff, and students in the Department of Population Health Sciences engage in a wide variety of world-class epidemiological and health services research projects. The interdisciplinary focus allows students the flexibility to work with a wide array of research/faculty on campus.

The department offers two graduate degree programs: an M.S. and a Ph.D. in epidemiology and an M.S. and Ph.D. in population health. While the program is based on a sequence of core courses, students, in consultation with their major professor, have some flexibility to design advanced study and research that best prepares them for their chosen area of interest.

ADMISSIONS

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website.

Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).

Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>December 1</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>This program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>This program does not admit in the summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>Required.*</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) (e.g., GMAT, MCAT)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Letters of Recommendation Required

* For applicants who have completed a doctoral degree, GRE scores are preferred, but we will accept scores from the entrance exam required for the doctoral degree (e.g., MCAT, LSAT).

Applications are welcome from students with diverse academic backgrounds. Students with strong quantitative skills and academic preparation in the biological sciences are strongly encouraged to apply. New students are admitted to start in the fall semester of each school year. Applications are due by January 15 of each year. Late applications are not accepted.

Minimum requirements are:

- Applicants must have an undergraduate degree with a grade point average of 3.0 (on a 4.0 scale), although successful applicants generally have GPAs above 3.0.
- GRE scores are required for admission. The scores must be no more than five years old at the time of application. For applicants who have completed a doctoral degree, GRE scores are preferred but the program will accept scores for the entrance exam required for the doctoral degree (e.g., MCAT, LSAT). Students should contact the graduate program coordinator to find out if their scores are competitive.
- Applicants whose native language or language of study is not English must submit official TOEFL scores. Scores must be no more than five years old at the start of the semester for which an applicant is applying. Further details are available on the Graduate School website (http://grad.wisc.edu/). Note that the minimum test scores for the program are higher than those required by the Graduate School. For the Test of English as a Foreign Language, TOEFL (http://www.toefl.org/), minimum scores of 580 (written), 237 (computer-based), or 92 (Internet-based) or above are required.
- Transcripts must show evidence of advanced quantitative preparation, including at least one semester of calculus with a grade of 'B' or better (AP Calculus is acceptable if it meets the UW standards for a 'B'), as well as a two-semester course in college-level biology. Applicant should have completed UW-Madison BIOLOGY/BOTANY/ZOOLOGY 151 Introductory Biology and BIOLOGY/BOTANY/ZOOLOGY 152 Introductory Biology or the equivalent.
- A personal statement and three letters of recommendation are required.
- Applicants must meet both the above departmental admission requirements and the Graduate School admission requirements.
- Upon entry to the graduate program, students are matched with a faculty advisor. Faculty advisors help students hone their interests, assist with identifying research projects, provide support for career development, and link students to the greater campus community. Students have the benefit of regular dialogues with faculty members. Seminars and integrated discussion groups allow for increased interaction with core faculty and community lecturers. Finally, the work of students is valued as evidenced by their entries in the annual department poster session, participation in public health symposia, authorship of publications, and involvement in community/research projects.
FUNDING

GRADUATE SCHOOL RESOURCES
Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES
Students admitted to our degree programs are automatically considered for any available scholarships, traineeships, or graduate assistant positions in the department. The most common forms of funding support for our students are assistantships, traineeships, and fellowships.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS
Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

**Evening/Weekend**: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online**: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid**: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated**: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>33 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>21 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>100% of all coursework taken as a graduate student in any of the four degrees the program offers must be completed in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide">https://registrar.wisc.edu/course-guide</a> (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>)).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>Students must maintain a cumulative GPA of at least 3.25 in all graduate work (including transfer credits) unless conditions for probationary status require higher grades. Students must also maintain a cumulative GPA of 3.25 or better in all coursework completed while enrolled in the population health graduate program. No grade of BC or lower in epidemiology required courses will be accepted for the degree.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>Maintain no more than 6 credits of incomplete (I) grades during any semester.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>No formal examination required.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP HLTH/B M I 451</td>
<td>Introduction to SAS Programming for Population Health</td>
<td>2</td>
</tr>
<tr>
<td>POP HLTH/B M I 551</td>
<td>Introduction to Biostatistics for Population Health</td>
<td>3</td>
</tr>
<tr>
<td>POP HLTH/B M I 552</td>
<td>Regression Methods for Population Health</td>
<td>3</td>
</tr>
<tr>
<td>POP HLTH/SOC 797</td>
<td>Introduction to Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>POP HLTH 798</td>
<td>Epidemiologic Methods</td>
<td>3</td>
</tr>
<tr>
<td>POP HLTH 805</td>
<td>Advanced Epidemiology: Causal Inference in Epidemiological Studies</td>
<td>3</td>
</tr>
<tr>
<td>or POP HLTH 806</td>
<td>Advanced Epidemiology: Practice of Epidemiology</td>
<td></td>
</tr>
<tr>
<td>POP HLTH 820</td>
<td>Graduate Research Seminar</td>
<td>1</td>
</tr>
<tr>
<td>POP HLTH 699</td>
<td>Independent Reading</td>
<td>0.3</td>
</tr>
<tr>
<td>POP HLTH 990</td>
<td>Research</td>
<td>0.5</td>
</tr>
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Many students take additional coursework in other departments in consultation with their advisor.

Responsible Conduct of Research

Select a minimum of 1 credit of course work in 'the responsible conduct of research'.

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<tr>
<td>POP HLTH/SOC 797</td>
<td>Introduction to Epidemiology</td>
<td>3</td>
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Many students take additional coursework in other departments in consultation with their advisor.

Responsible Conduct of Research

Select a minimum of 1 credit of course work in 'the responsible conduct of research'.
Epidemiology Specialization
M.S. students must complete at least nine credits of specialization coursework from the list below.

- B M I 826: Special Topics in Biostatistics and Biomedical Informatics (Ethical Conduct of Research for Data Scientists)
- MED HIST 545: Ethical and Regulatory Issues in Clinical Investigation (Offered in Fall. MED HIST 545 does not fulfill all the NIH requirements for training in the responsible conduct of research for certain T and F awards.)
- NURSING 802: Ethics and the Responsible Conduct of Research (Offered in Spring)
- SURG SCI 812: Research Ethics and Career Development
- OBS&GYN 955: Responsible Conduct of Research for Biomedical Graduate Students (Offered in Fall)
- OBS&GYN 956: Advanced Responsible Conduct of Research for Biomedical Students (Offered in Spring)

Other courses may be substituted as approved by the advisor and the Director of Graduate Studies.

Total Credits: 33

1. Students may use up to 3 credits of POP HLTH 699 Independent Reading and up to 5 credits of POP HLTH 990 Research toward the M.S. requirements in consultation with their advisor.

GRADUATE SCHOOL POLICIES

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Work from Other Institutions
With program approval, students are allowed to count a maximum of 12 credits of graduate coursework taken from other institutions as a graduate student. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

UW–Madison Undergraduate
No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

UW–Madison University Special
With program approval, students are allowed to count no more than 12 credits of coursework numbered 300 or above taken as a UW–Madison University Special student. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

PROBATION

A student not meeting guidelines for satisfactory progress will be placed on probation for one semester and will be reviewed by the Steering Committee following the probationary semester. Students may be dropped or allowed to continue by the committee based on review of progress during the probationary semester.

ADVISOR / COMMITTEE

All students will have a hold placed on their registration each semester. Students must meet with their advisor once each semester for academic advising to have the hold removed.

CREDITS PER TERM ALLOWED

15 credits

TIME CONSTRAINTS

Thesis required. Approval of a written proposal for thesis research is required before beginning thesis. M.S. candidates must submit master’s thesis to advisor within two years of completing all coursework.

Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:
• Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
• Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
• Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
  • Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
• Dean of Students Office (https://doso.students.wisc.edu/) (for all students to seek grievance assistance and support)
• Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
• Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
• Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
• Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
• Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
• Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
  • Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

Students should contact the program director with questions about grievances.

OTHER
While we can't guarantee funding for all enrolled students, we work in partnership with each student to find all suitable funding options.

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

LEARNING OUTCOMES

1. Articulate, critique, and elaborate the methodological, biostatistical, and biologic foundations of research and practice of Epidemiology.
2. Identify literature and data sources, assemble, evaluate and synthesize evidence through critical review and data analysis pertaining to questions and challenges about causes and distribution of diseases and other factors related to health.
3. Demonstrate understanding of Epidemiology in its subject matter, historical and social context.
4. Select and utilize the most appropriate study designs and statistical methods for answering questions in Epidemiology.
5. Communicate clearly both in writing and orally in ways appropriate to Epidemiology.
6. Advance contributions to society of the methods and knowledge base of Epidemiology.
7. Recognize and apply principles of ethical professional conduct in their scholarship.

Faculty: Professors Durkin (chair), Cruickshanks, Gangnon, Kanarek, Patz, Remington, Trentham-Dietz; Associate Professors Astor, Bautista, Ehrenthal, Engleman, Malecki, Peppard, Sethi; Assistant Professor Warren-Andersen