DOCTOR OF PHILOSOPHY IN THE FIELD OF EPIDEMIOLOGY

Program Director S. Cleary

The purpose of the doctor of philosophy program is to prepare students for a career in epidemiologic research in an academic, government, or industry setting. The PhD graduate is expected to have knowledge across a wide range of epidemiologic theories and methods and specific knowledge of the epidemiology of one of the following areas: chronic disease, infectious disease, environmental and occupational health.

Doctoral students are required to pass a written comprehensive examination and to complete a dissertation.

At the completion of the doctoral program in epidemiology students should be able to:

- Demonstrate understanding of general and specialized epidemiologic concepts;
- Develop a research protocol;
- Conduct and analyze data from a research study; and
- Disseminate research findings.

Admissions Requirements

Specific admission requirements are shown on the Graduate Program Finder (http://www.gwu.edu/all-graduate-programs) and on the School of Public Health program webpage.

Applicants must hold an undergraduate degree from an accredited institution of higher learning. Although not required, most admitted students have completed a master's degree prior to admission. Before applying, applicants must provide evidence of the completion of these required prerequisites:

- Calculus I and II - 6 credits
- Human Biology - 8 credits

And, the following courses are highly recommended admission prerequisites:

- Linear Algebra - 3 credits
- SAS - 3 credits

If desired, a student may complete the MS or MPH program prior to admission to the PhD degree program, in which case no more than 24 credits from these degrees may be applied to the PhD coursework requirements. In this instance the student is required to take a minimum of 27 additional credits of coursework plus dissertation research credits. The distribution of these courses between epidemiology and statistics depends on the nature of the master's degree and whether the transferred credits are used to defray epidemiology or statistics coursework. All applications are submitted through SOPHAS.org (http://SOPHAS.org).

Specific admission requirements are shown on the Graduate Program Finder. (http://www.gwu.edu/all-graduate-programs)

Visit the program website (https://publichealth.gwu.edu/programs/epidemiology-phd) for additional program information.

REQUIREMENTS

The following requirements must be fulfilled:

The requirements for the Doctor of Philosophy Program (http://bulletin.gwu.edu/arts-sciences/#doctoraltext).

72 credits

Two program options are available: Option A is more quantitative and includes advanced statistical coursework in the Department of Statistics. Option B, while also quantitative, allows for courses and electives with a primary focus on public health.

The following requirements must be fulfilled: 72 credits, including 16 credits in core coursework; 12 to 15 credits in statistics coursework, depending on which option the student follows; 3- credits in program-specific epidemiology selective coursework; a minimum of 14 to 17 credits in elective courses, depending on which option the student follows; 6 credits in consulting coursework; and 12 to 21 credits in dissertation research.

Preparatory Requirements

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Minimum prerequisite courses for admission consideration</td>
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<tr>
<td>BISC 1115 &amp; BISC 1126</td>
<td>Introductory Biology: Cells and Molecules and Introduction to Organisms Laboratory</td>
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<tr>
<td>BISC 1116 &amp; BISC 1126</td>
<td>Introductory Biology: The Biology of Organisms and Introduction to Organisms Laboratory</td>
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<tr>
<td>MATH 1231</td>
<td>Single-Variable Calculus I</td>
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<tr>
<td>MATH 1232</td>
<td>Single-Variable Calculus II</td>
<td></td>
</tr>
<tr>
<td>MATH 2233</td>
<td>Multivariable Calculus (option A only)</td>
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</table>

Additional course requirements for admissions consideration
The courses listed below are additional course preparatory requirements. Applicants lacking these courses (or equivalents to these GW courses) will be considered for admission, but will be admitted conditionally with the expectation that these courses will be completed within two semesters following matriculation in the program. Credit for these courses does not count toward the 72 credits required for the degree and grades earned are not reflected in the overall grade-point average.

- MATH 2184 Linear Algebra I
- STAT 2183 Intermediate Statistics Lab/Packages
- or PUBH 6249 Use of Statistical Packages: Data Management and Data Analysis

### Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Public health core</strong></td>
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<tr>
<td>PUBH 6003</td>
<td>Principles and Practices of Epidemiology</td>
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<tr>
<td>PUBH 6004</td>
<td>Environmental and Occupational Health in a Sustainable World</td>
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<td>PUBH 6007</td>
<td>Social and Behavioral Approaches to Public Health</td>
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<td>PUBH 6247</td>
<td>Design of Health Studies</td>
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<tr>
<td>PUBH 6252</td>
<td>Advanced Epidemiology Methods</td>
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<tr>
<td>PUBH 8419</td>
<td>Measurement in Public Health and Health Services</td>
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<tr>
<td><strong>Statistics core</strong></td>
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<td></td>
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<tr>
<td>STAT 6210</td>
<td>Data Analysis (OR)</td>
<td></td>
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<tr>
<td>PUBH 8365</td>
<td>Design of Medical Studies</td>
<td></td>
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<tr>
<td>PUBH 8366</td>
<td>Biostatistical Methods (basis for PhD general comprehensive)</td>
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**Required for Option A**

- STAT 6201 Mathematical Statistics I
- STAT 6202 Mathematical Statistics II

**Required for Option B**

- PUBH 8364 Quantitative Methods

**Required epidemiology program-specific course**

One of the following two-course sets for a total of 3 credits.

- PUBH 6242 & PUBH 8242 Clinical Epidemiology and Public Health: Reading the Research and Advanced Topics in Clinical Epidemiology and Public Health: Reading the Research
- or PUBH 6299 & PUBH 6006 Topics in Epidemiology and Biostatistics and Management and Policy Approaches to Public Health
- or PUBH 6244 & PUBH 8244 Cancer Epidemiology and Doctoral Topics: Cancer Epidemiology
- or PUBH 6245 & PUBH 8245 Infectious Disease Epidemiology and Doctoral Topics: Infectious Disease Epidemiology
- or PUBH 6250 & PUBH 8250 Epidemiology of HIV/AIDS and Doctoral Topics: Epidemiology of HIV/AIDS

**Electives**

A minimum of 14 to 17 credits in graduate-level elective courses in PUBH, HSML, EXNS, or STAT.* Examples of such courses include:

- PUBH 6123 Toxicology: Applications for Public Health Policy
- PUBH 6124 Problem Solving in EOH
- PUBH 6260 Advanced Data Analysis for Public Health
- PUBH 6262 Introduction to Geographic Information Systems
- PUBH 6263 Advanced GIS
- PUBH 6267 Time Series Applications in Public Health
- PUBH 6268 Advanced SAS
- PUBH 6299 Topics in Epidemiology and Biostatistics

Other electives as approved in advance by the program director.

Statistics electives (for students pursuing Option A)

- STAT 6213 Intermediate Probability and Stochastic Processes
STAT 6215  Applied Multivariate Analysis I
STAT 6216  Applied Multivariate Analysis II
STAT 6217  Design of Experiments
STAT 6223  Bayesian Statistics: Theory and Applications
STAT 6227  Survival Analysis
STAT 8226  Advanced Biostatistical Methods

Consulting

3 credits from the following:
PUBH 6258  Advanced Topics in Biostatistical Consulting
PUBH 8283  Doctoral Biostatistics Consulting Practicum

The epidemiology program director may waive the consulting requirement based on written documentation of prior equivalent coursework or relevant work experience. Waiver of the consulting requirement increases the total required number of elective credits proportionally.*

Dissertation research

12 to 21 credits of the following:
PUBH 8999  Dissertation Research (taken in units of 3 credits)

*Total required elective credits varies depending on whether the student is following Option A or Option B. It also will be affected if the consulting requirement is waived.

Graduation Requirements

1. Program options: Students may choose either curriculum Option A or curriculum Option B for the Doctor of Philosophy degree in the field of epidemiology.
2. Graduate credit requirement: 72 graduate credits are required.
3. Prerequisites: Review official program guide for minimum prerequisite requirements for admission.
4. Comprehensive (General) exam: successful completion within 24 months of matriculation.
5. Dissertation: 12 to 21 credits of dissertation research are required.
6. Grade-point requirements: An overall GPA of 3.0 (B average) is required.
7. Time limit requirement: The degree must be completed in 8 years.
8. Transfer credit policy: Up to 24 credits from an applicable master’s program may be approved to be transferred to the doctoral program. Transferred courses must have received a grade of B or above and earned at an accredited institution.