CHRONIC DISEASE EPIDEMIOLOGY CONCENTRATION (CDE)

There is a high demand for well-trained graduates in chronic disease epidemiology. The M.S. with a concentration in Chronic Disease Epidemiology is a one-year program that provides intensive training in epidemiology and research methods for medical and health care professionals, or others seeking the skills necessary to conduct epidemiological research in their professional practice.

Applicants should have a basic understanding of quantitative science and statistics. It is recommended that candidates have strong science backgrounds and demonstrated competency in statistical analysis and logical thinking. Applicants from rigorous programs in the biological or social sciences will be given preference. At a minimum, applicants should have one year of course work in statistics or the equivalent prior to enrolling in this program. Part-time enrollment is permitted.

DEGREE REQUIREMENTS

The Chronic Disease Epidemiology concentration consists of required and elective course work and satisfactory completion of the capstone experience. A total of ten courses is required (excluding the Seminar, CDE 525/CDE 526; and EPH 600). It is expected that this program will be completed during a single academic year when a student enrolls full-time. Students with an M.P.H. or relevant graduate degree may be eligible to substitute advanced courses for some of the required courses. Written permission of the DGS is required prior to enrolling in substitute courses.

The Graduate School requires an overall grade average of High Pass, including a grade of Honors in at least one full-term graduate course for students enrolled in a one-year program. In order to maintain the minimum average of High Pass, each grade of Pass on the student's transcript must be balanced by one grade of Honors. Each grade of Fail must be balanced by two grades of Honors. If a student retakes a course in which the student has received a failing grade, only the newer grade will be considered in calculating this average. The initial grade of Fail, however, will remain on the student's transcript. A grade awarded at the conclusion of a full-year course in which no grade is awarded at the end of the first term would be counted twice in calculating this average.

CURRICULUM

Required Courses

Or approved substitutions.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDE 516</td>
<td>Principles of Epidemiology II</td>
<td>1</td>
</tr>
<tr>
<td>CDE 525</td>
<td>Seminar in Chronic Disease Epidemiology¹</td>
<td>0</td>
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<tr>
<td>CDE 526</td>
<td>Seminar in Chronic Disease Epidemiology¹</td>
<td>0</td>
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<tr>
<td>CDE 617</td>
<td>Developing a Research Proposal² or CDE 600</td>
<td>1</td>
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<tr>
<td>or CDE 600</td>
<td>Independent Study or Directed Readings</td>
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<tr>
<td>EPH 508</td>
<td>Foundations of Epidemiology and Public Health</td>
<td>1</td>
</tr>
<tr>
<td>EPH 600</td>
<td>Research Ethics and Responsibility¹</td>
<td>0</td>
</tr>
<tr>
<td>EPH 608</td>
<td>Frontiers of Public Health³</td>
<td>1</td>
</tr>
</tbody>
</table>

¹ These courses do not count toward the ten required courses.
² In the capstone course CDE 617, the student is required to develop a grant application that is deemed reasonably competitive by the instructor. An alternative to this capstone course is an individualized tutorial (CDE 600), in which the student completes a manuscript that is suitable for submission for publication in a relevant journal.
³ Students entering the program with an M.P.H. or relevant graduate degree may be exempt.

Three quantitative courses from the following (or approved substitutions):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIS 536</td>
<td>Measurement Error and Missing Data</td>
<td>1</td>
</tr>
<tr>
<td>BIS 537</td>
<td>Statistical Methods for Causal Inference</td>
<td>1</td>
</tr>
<tr>
<td>BIS 621</td>
<td>Regression Models for Public Health</td>
<td>1</td>
</tr>
<tr>
<td>BIS 628</td>
<td>Longitudinal and Multilevel Data Analysis</td>
<td>1</td>
</tr>
<tr>
<td>BIS 630</td>
<td>Applied Survival Analysis</td>
<td>1</td>
</tr>
<tr>
<td>S&amp;DS 563</td>
<td>Multivariate Statistical Methods for the Social Sciences¹</td>
<td>1</td>
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</tbody>
</table>

¹ This course is offered in the Graduate School of Arts and Sciences.

Two elective courses in Chronic Disease Epidemiology. Suggested electives are:
Students must complete one additional elective, chosen in consultation with their adviser.

COMPETENCIES

The following competencies for the M.S. with a concentration in Chronic Disease Epidemiology are currently under review and will be updated in fall 2020.

Upon receiving an M.S. in the Chronic Disease Epidemiology concentration of Public Health, the student will be able to:

- Explain and apply the terminology and definitions of epidemiology.
- Evaluate the scientific merit and feasibility of epidemiologic study designs.
- Describe the epidemiology of common chronic diseases.
- Synthesize information from a variety of epidemiologic and related studies.
- Design epidemiologic studies at an intermediate level.
- Analyze data and draw appropriate inferences from epidemiologic studies at an intermediate to advanced level, using a variety of analytical tools including multivariate logistic regression, Poisson regression, linear regression, and survival analysis.
- Write an epidemiologic research proposal or a publishable epidemiologic article.
- Identify, interpret, and use routinely collected data on disease occurrence.
- Review, critique, and evaluate epidemiologic reports and research articles at an intermediate level.