

Epidemiology is the study of the patterns, causes, and effects of health and disease conditions in defined populations. Epidemiology’s main role is preventing the onset and spread of disease by finding the reasons why some groups of people are healthier than others and then removing or controlling these causes. Completion of the Epidemiology certificate will prepare students to (1) analyze and interpret data and present results in words, tables, charts, and graphs; (2) design epidemiologic studies and compare and contrast study methodology; and (3) critique studies for their validity and contribution to the discipline. Students will receive a certificate from the Department of Public Health. Completion of certificates is *not* noted on academic transcripts.

Eligibility

Only matriculated Master of Public Health (MPH) students at Brigham Young University (BYU) who did not complete the Epidemiology Emphasis as undergraduate students at BYU are eligible for an Epidemiology certificate.

Requirements

Students must complete 18 credits (12 credits of coursework plus 6-credit field experience) in order to earn the Epidemiology certificate.

Course ^{a, b, c}	Title	Credits
<i>Complete the following course(s):</i>		
HLTH 440	Introduction to Statistical Computing in Epidemiology (SAS)	3
HLTH 449 ^d	Epidemiologic Study Design and Analysis (prerequisites HLTH 611, 621, and 440)	3
HLTH 493 ^{d, e}	Epidemiology Capstone (prerequisite HLTH 449)	3
HLTH 688R	Field Experience	6
<i>Complete 3.0 credits from the following course(s):</i>		
HLTH 482 ^d	Medical Geography	3
HLTH 691R	Mentored Research (up to 3 credits can be counted for the certificate)	3
HLTH 696R	Independent Studies (up to 3 credits can be counted for the certificate)	3
MFHD 605	Structural Equation Modeling in Social Sciences (prerequisite STAT 511 or equivalent)	3
MPA 635	Data Visualization (prerequisite MPA 630 or equivalent)	1.5
PSYCH 502	Data Analysis in Psychological Research 2 (prerequisite PSYCH 501 or instructor’s consent)	3
SOC 300	Methods of Research in Sociology (prerequisites SOC 111, 112, or 113)	3
STAT 330	Introduction to Regression (prerequisites MATH 112 and STAT 230)	3
STAT 381	Statistical Computing (prerequisites STAT 223, 224, and 330)	3
STAT 435	Nonparametric Statistical Methods (prerequisite STAT 330 or 511)	3
STAT 469	Analysis of Correlated Data (prerequisite STAT 330)	3
STAT 538	Survival Analysis (prerequisite STAT 340)	3
Total		18

^a MPH students can count up to 9.0 credits of 300/400 level courses toward their MPH degree, but not more than 9.0 credits. Only one 300 level course may be counted. Students must petition to Graduate Studies for approval to count a 300-level course.

^b If any listed course(s) were taken as part of an undergraduate degree, then students must substitute the course(s) with another approved elective.

^c Changes to certificate course requirements must be approved by the Epidemiology certificate lead, Dr. Evan Thacker, and MPH Director, Dr. Ali Crandall.

^d Some courses, such as HLTH 449, HLTH 482, and HLTH 493, may require an add code for registration, because the online registration system will require prior completion of undergraduate prerequisite courses that are not relevant for MPH students. MPH students may obtain add codes from course instructors or from the MPH program manager, Ruth Priday.

^e HLTH 493 Epidemiology Capstone does not replace HLTH 690 MPH Capstone. MPH students earning the Epidemiology certificate will take both HLTH 690 in Fall semester of year 2 and HLTH 493 in Winter semester of year 2.

Field Experience

Students need to complete a field experience (HLTH 688R) in epidemiology as approved by their graduate faculty advisor.

Four epidemiology-related MPH Foundational Competencies are found under the heading *Evidence-based Approaches to Public Health* in Appendix 4 of the BYU MPH Student Handbook and are listed below. For the field experience to qualify for the Epidemiology certificate, it must align with two or more of these four epidemiology-related Foundational Competencies, one of which must be competency #3:

Evidence-based Approached to Public Health

1. Apply epidemiological methods to settings and situations in public health practice
2. Select **quantitative** and qualitative data collection methods appropriate for a given public health context
3. Analyze **quantitative** and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate
4. Interpret results of data analysis for public health research, policy, or practice

Competencies #2 and #3 make reference to both “quantitative” and “qualitative” data. For the Epidemiology certificate, alignment with Competencies #2 and #3 must align with the **quantitative** component. Qualitative work may also be included in the field experience, but qualitative work alone, without quantitative, will not qualify for the Epidemiology certificate.

Alignment of the field experience with epidemiology-related Foundational Competencies must be shown in the field experience proposal section *Alignment with MPH Foundational or Concentration Competencies* and the field experience final report section *Outcomes or Tangible Products*. Alignment will be evaluated by the Epidemiology certificate lead, Dr. Evan Thacker.

“R” Courses Requirements

Students choosing to complete HLTH 691R – Mentored Research and/or HLTH 696R – Independent Studies as an elective(s) are required to focus on epidemiological topics, readings, research, or studies, as approved by the faculty member facilitating the research or independent studies and by the Epidemiology Certificate lead, Dr. Evan Thacker.

Timing of Epidemiology Certificate Coursework

HLTH 440 must be completed prior to the beginning of Fall semester of year 2 of the MPH program because it is a prerequisite for HLTH 449. We recommend that students take HLTH 440 during Fall or Winter semester of year 1.

HLTH 449 must be completed during Fall semester of year 2 of the MPH program.

HLTH 493 must be completed during Winter semester of year 2 of the MPH program.