ONE-YEAR MASTER OF PUBLIC HEALTH DEGREE 
PROGRAM IN EPIDEMIOLOGY

The one-year MPH program in Epidemiology requires at least 42 units of course work, including selected required courses and seminars in epidemiology and biostatistics. Minimum requirements include two semesters of academic residence and a six-week session in summer sessions prior to the fall semester. This program is generally limited to students with a prior doctoral degree (e.g., Ph.D., MD, DDS, DVM, etc.), who typically complete the necessary course work and the required oral comprehensive examination in one year. Students in this program who wish to extend their academic course work over an additional semester or two may do so with prior consent of the program head, but must be registered, full-time students throughout all semesters in residence.

Graduates of the program will be qualified for positions utilizing their epidemiologic and statistical training in federal, state and local health departments as well as for a wide variety of academic research positions and positions in the private medical and health care fields. On completion of the MPH in Epidemiology, some students may be admitted to doctoral studies in Epidemiology or Biostatistics when such admission is compatible with their interests, goals, and prior performance, and is within the admission quota and resources of the program.

Learning Objectives

Upon satisfactory completion of the one year MPH program in Epidemiology, graduates will have specific skills in the following areas:

- Mastery of central concepts in epidemiology
- Population health issues
- Formulating and pursuing research question(s)
- Design of epidemiological studies
- Accessing public health data
- Data management
- Data analysis
- Interpreting published epidemiologic studies

Specific skills to be mastered in these areas are:

Formulating and pursuing research question(s):
- pose an appropriate research question or questions when given a public health or medical problem requiring an epidemiologic investigation
- identify demographic, social/behavioral and environmental factors which have an impact on the problem under investigation
- write a study protocol detailing the objects and methods for such an investigation

Design of epidemiologic studies
- describe the basic study designs used in epidemiological research, i.e. cross-sectional, ecological, case-control, and experimental (field trials) designs and the
analytic techniques and limitations of each design.

- prepare a study protocol detailing the objects and methods for such an investigation

**Accessing Public Health data**

- identify sources of health data such as demographic reports, vital statistics records, disease registries, and clinic and hospital records and how to access these sources
- interpret health status indices based on these data, such as mortality and morbidity rates

**Data management**

- plan, organize and manage procedures for collecting data from existing sources as well as original sources such as household surveys or subjects identified for specific studies
- use computer software for data processing preparatory to statistical analysis
- evaluate the integrity and comparability of data and identify gaps in data sources
- with consultation and under supervision, develop data collection and quality control protocols
- with consultation and under supervision, manage data for a small or medium-scale epidemiologic or clinical study, including preparation of data management plans, data collection protocols, and documentation.

**Data analysis**

- analyze data using appropriate statistical techniques under the guidance of someone with more advanced training
- use biostatistical concepts and methods appropriate to epidemiological research
- estimate epidemiologic parameters such as the relative risk, and use statistical tests and confidence intervals based on contingency table analyses while controlling one or two categorical variables
- estimate sample size requirements
- conduct standard statistical analyses
- communicate the results of analyses both orally and in writing
- interpret the results in consultation with an experimenter experienced in the problem area

**Interpreting published epidemiologic literature**

- critique epidemiologic literature for strengths and weaknesses of the methodology in published studies
- evaluate critically the research questions, methods, analyses, and findings of epidemiological research reports and presentations
- write a thesis or equivalent that demonstrates the ability to critique the epidemiologic literature and interpret epidemiologic data

**Mastery of central concepts in epidemiology**

- describe the basic study designs used in epidemiological research, i.e. cross-sectional, ecological, case-control, and experimental (field trials) designs and the analytic techniques applicable to each design
- explain the fundamental epidemiologic concepts of: natural history of disease,
prevalence, incidence, rates, relative risk, attributable risk, direct and indirect standardization of rates, standardized mortality ratio, cohort, case-control, precision, bias, confounding, and effect modification.

- explain and apply methods of standardization or adjustment for factors such as age or gender in a study population
- explain major categories of bias, assess the potential for their occurrence in specific study situations, and propose methods to evaluate and/or reduce their influence on the measures of major interest
- evaluate the evidence in favor of and against the likelihood that an association observed in epidemiologic studies is causal
- present the purpose and problems of interpretation in surveillance for acute and chronic disease and other factors important for public health

**Population health issues**

- define, assess, and understand the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
- contrast the clinical and population perspectives on improving public health
- articulate the role of epidemiology in preserving and improving public health
- describe the nature of disease distributions in populations and the factors which influence these distributions

**Courses/Course Requirements**

Each student is expected to work closely with an assigned faculty adviser in the planning of his or her individual schedule of courses. Students in the one-year MPH programs must meet all school-wide breadth requirements, either by passing the appropriate exemption exams or by taking courses that are approved for meeting these requirements.

The one year MPH curriculum in epidemiology is an intensive, full-time course of study extending over eleven months (July to May) and requiring enrollment during the summer, fall, and spring. In addition to completing required school-wide breadth courses in public health, students are required to complete advanced coursework in epidemiologic and biostatistical methods, and electives in epidemiology. Students in the one-year MPH program are expected to take PH 200C1, PH200C2, PH 250B and PH 245 during the fall semester and PH 200C3, PH 241, and/or Epidemiology electives in the spring semester, all for a letter grade. All students in the one-year MPH program must take the epidemiology seminar PH 292 in the fall and spring semesters. The seminar is graded on a satisfactory/unsatisfactory basis only. Students are also required to write a master's paper on an epidemiologic topic previously approved by and under the supervision of the faculty and to present and defend their master's paper during a required oral examination in the spring semester prior to graduation.
Grading

Students have the option of taking courses on a Satisfactory/Unsatisfactory (S/U) basis, but no more than one-third of the master’s program may be fulfilled by courses graded Satisfactory. Students cannot take MPH breadth course requirements on an S/U basis. The option of changing an S/U to a letter grade or vice versa is never approved after the fifth week deadline for changes unless your Graduate Advisor documents in writing that he/she has misadvised you. No more than 10 units may be 290 series units.

Comprehensive Examination for the Masters Degree

During the spring semester preceding graduation, students in the one-year MPH program must present and defend an in-depth paper on an epidemiologic topic to be handed in early in the spring semester. The paper can take the form of a critical review of the existing epidemiologic literature about a particular topic; a formal meta-analysis; a paper describing the results of an original epidemiologic study by the student; or a detailed research proposal for an epidemiologic study. In the fall semester before the paper is due, each student will be assigned to a faculty member with expertise in the subject matter of the student’s proposed paper. The student will work with and receive ongoing input from that faculty member during the various stages of planning and writing the paper. (Details concerning the paper topic, format, due dates for various stages of development of the paper can be found in the Epidemiology Masters Paper Guidelines.)

In the spring semester, each student will give a brief (ten minute) oral presentation concerning his or her paper on a pre-assigned date and will then be questioned by two or more faculty. Specifically, in this oral comprehensive examination, the student will be expected to defend his or her written paper and, in the process, demonstrate competence in and a firm grasp of epidemiologic and biostatistical methods and approaches relevant to studies of disease causation and prevention. Decisions on the outcome of the comprehensive examination will be given to the student the day of the examination as satisfactory or unsatisfactory. In the event of an unsatisfactory outcome, a written and/or oral re-examination is the usual recommended course of action. Students who do not pass the re-examination are not eligible to receive the Masters degree.

Advancement to Candidacy

Masters students must advance to candidacy prior to taking the comprehensive examination. Graduate Division requires that a minimum period of study of one term must intervene between formal advancement to candidacy and the conferring of the master’s degree. Therefore, the Division will submit a list of students who are advancing to candidacy no later than the end of the fifth week of classes in the term in which students are expected to complete the degree requirements.

The School of Public Health Student Services Unit reviews students’ applications against their academic records to determine eligibility for advancement to candidacy. A student who is not eligible to advance will be notified that advancement has been deferred. Once the deficiency has been cleared and can be verified, the student will be advanced to candidacy.
Advising

Faculty advisors are expected to work closely with students to help them develop a program consistent with their previous education, experience and future plans. Each student is assigned an advisor, but advisors may be changed at any time by mutual consent. Each student should arrange to see his or her advisor at least twice each academic year: near the beginning of the fall and spring semester, respectively. All members of the faculty are expected to be available to any student in the epidemiology master’s program for consultation from orientation week at the beginning of the fall semester throughout the academic year. To save you time, it is advisable to make an appointment in advance with the faculty member you would like to see. Office hours for all faculty members are posted outside their office doors. ANY STUDENT ENCOUNTERING DIFFICULTY MAKING AN APPOINTMENT WITH A FACULTY MEMBER WITHIN A REASONABLE TIME FRAME SHOULD NOTIFY THE DIVISION HEAD WITHOUT DELAY.