



## MPH in Biostatistics Academic Year 2009-2010

The MPH in Biostatistics curriculum is constructed so that students are able to choose either an emphasis in biometry or clinical research depending on their interests. There are excellent career opportunities for students wishing to pursue positions in local, state, and federal health agencies, health and medical centers, health care and clinical research institutions, the healthcare/pharmaceutical industry, and consulting. Applicants to this program are expected to have a background in college algebra and calculus.

### Biometry Emphasis (48 Semester Credit Hours)

The biometry emphasis is designed to train students in data management, statistical analysis, interpretation, and presentation of analytical results using computing technology. This emphasis focuses on the methodologies and procedure of statistical analysis and research design. By the conclusion of the MPH program, a student in biometry emphasis will be able to:

1. Identify and develop appropriate data collection strategies for a corresponding statistical method.
2. Review statistical analyses and results critically in public health literature.
3. Disseminate statistical results to public health constituents.
4. Identify, develop, apply, and modify an appropriate statistical approach to a public health problem based on constraints and available resources.
5. Analyze and solve public health issues by applying statistical methodology.
6. Assist in the planning, development, and evaluation of health systems, health programs, and surveillance systems.
7. Conduct independent research focusing on the analysis and solution of a problem in public health.

#### CORE COURSES: 15 SCH

BIOS	5300	Biostatistics for Public Health 1	3 SCH
EOHS	5300	Environmental Health	3 SCH
EPID	5300	Principles of Epidemiology	3 SCH
HMAP	5300	Introduction to Health Management and Policy	3 SCH
SABS	5300	Theoretical Foundations of Individual & Community Health	3 SCH

#### REQUIRED COURSES: 9 SCH

BIOS	5310	Biostatistics for Public Health 2	3 SCH
BIOS	5312	Regression Analysis	3 SCH
BIOS	5314	Introduction to Statistical Packages	3 SCH

#### PRACTICE EXPERIENCE: 3 SCH

BIOS	5397	Public Health Practice Experience	3 SCH
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**ELECTIVE COURSES: 21 SCH**

BIOS	5316	Nonparametric Statistical Methods	3 SCH
BIOS	5320	Analysis of Variance	3 SCH
BIOS	5324	Data Management	3 SCH
BIOS	5399	Independent Study in Biostatistics	1-3 SCH
BIOS	6310	Probability and Statistical Inference	3 SCH
BIOS	6312	Applied Methods of Survey Sampling	3 SCH
BIOS	6314	Applied Categorical Data Analysis	3 SCH
BIOS	6318	Clinical Trials and Survival Analysis	3 SCH
BIOS	6320	Biostatistical Research and Consulting	3 SCH
BIOS	6391	Topics in Biostatistics	3 SCH

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

**CULMINATING EXPERIENCE:**

Comprehensive Exam (see details at the end of this section)

- Upon approval by the student's advisor and the department chair, students may elect to complete a Thesis for the culminating experience. In this case, students will take 15 SCH of "ELECTIVE" coursework and 6 SCH of Thesis.

**Clinical Research Emphasis (49 Semester Credit Hours)**

The clinical research emphasis is primarily designed for those who are currently working in the health care professions. The program is for professionals who wish to prepare for roles in clinical research, health care research, medical database management, or statistical consulting in medical or public health settings. The emphasis is oriented toward applied clinical research, outcome measurement, and applied biostatistics. By the conclusion of the MPH program, a student in clinical research emphasis will be able to:

1. Conduct experimental research in public health such as community trials and clinical trials in collaboration with other health professionals.
2. Communicate findings of the analysis and solution of a problem of health care and public health importance in professional journals.
3. Analyze and solve public health issues by applying statistical methodology.
4. Assist in the planning, development, and evaluation of health systems using biostatistics procedures.
5. Plan and conduct independent research focusing on the analysis and solution of a problem in public health practice.
6. Assist in the planning, development, and evaluation of treatment outcome data collection in a broad array of health care facilities.

**CORE COURSES: 15 SCH**

BIOS	5300	Biostatistics for Public Health 1	3 SCH
EOHS	5300	Environmental Health	3 SCH
EPID	5300	Principles of Epidemiology	3 SCH
HMAP	5300	Introduction to Health Management and Policy	3 SCH
SABS	5300	Theoretical Foundations of Individual & Community Health	3 SCH

**REQUIRED COURSES: 10 SCH**

BIOS	5310	Biostatistics for Public Health II	3 SCH
BIOS	5312	Regression Analysis	3 SCH
BIOS	6318	Clinical Trials and Survival Analysis	3 SCH
HMAP	5160	Ethical, Legal & Social Issues for Responsible Conduct of CR	1 SCH

**PRACTICE EXPERIENCE: 3 SCH**

BIOS	5397	Public Health Practice Experience	3 SCH
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**NON-BIOSTATISTICS LOWER-LEVEL ELECTIVE COURSES: 6 SCH**

EOHS	5340	Exposure and Risk Assessment	3 SCH
EPID	5314	Applied Data Analysis in Epidemiology	3 SCH
EPID	5318	Chronic Disease Epidemiology	3 SCH
EPID	5320	Infectious Disease Epidemiology	3 SCH

**NON-BIOSTATISTICS UPPER-LEVEL ELECTIVE COURSES: 3 SCH**

EPID	6314	Experimental Methods in Epidemiology	3 SCH
HMAP	6380	Health Service Research I	3 SCH
SABS	6310	Qualitative Research Methods	3 SCH

**BIOSTATISTICS ELECTIVE COURSES: 12 SCH**

BIOS	5316	Nonparametric Statistical Methods	3 SCH
BIOS	5320	Analysis of Variance	3 SCH
BIOS	5314	Introduction to Statistical Packages	3 SCH
BIOS	5324	Data Management	3 SCH
BIOS	5399	Independent Study in Biostatistics	1-3 SCH
BIOS	6391	Topics in Biostatistics	3 SCH
BIOS	6320	Biostatistical Research and Consulting	3 SCH

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

**CULMINATING EXPERIENCE:**

Comprehensive Exam (see details at the end of this section)

- Upon approval by the student's advisor and the department chair, students may elect to complete a Thesis for the culminating experience. In this case, students will take 6 SCH of "BIOSTATISTICS ELECTIVE" coursework and 6 SCH of Thesis.