

# BIOSTATISTICS (MS)

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This program emphasizes the applied and theoretical nature of biostatistics. In addition to courses in theory, statistical computing, consulting, analysis of clinical trials, and longitudinal and survival data, you'll be exposed to a wide variety of research areas including statistical genetics and genomics, causal inference, infectious disease, and cancer research. During the program, you'll get involved in research with a faculty mentor as part of your thesis or research paper. You'll also have the opportunity to specialize in one of two minor areas within the MS—Statistical Genomics and Data Science Analytics.

This program will prepare you for in-depth study and research in statistics as it applies to healthcare and biological settings. You'll get a balance between theory, methods, and hands-on practical and research experience. Our required courses include applied and theoretical statistics, statistical computing, consulting, and advanced statistical modeling. Plus, you can choose elective coursework ranging from analysis of clinical trials to survival analysis to statistical 'omics. You'll also complete a Master's research paper or thesis.

In addition, we offer two minor areas of specialization within the MS—Statistical Genomics and Data Science Analytics. We recommend planning out the minor in your first year to ensure timely graduation and availability of electives.

## Curriculum

Code	Title	Hours
<b>Required Biostatistics MS Courses (20 credits)</b>		
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
BIOS 6621	Statistical Consulting I	1
BIOS 6622	Statistical Consulting II	1
BIOS 6624	Advanced Statistical Methods and Analysis	3
BIOS 6631	Statistical Theory I	3
BIOS 6632	Statistical Theory II	3
BIOS 6643	Analysis of Longitudinal Data	3
<b>Required Public Health Courses (6 credits)</b>		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
EPID 6630	Epidemiology	3
<b>Electives (6 credits from the following courses):</b>		<b>6</b>
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6645	Predictive Analytics	3
BIOS 6646	Survival Analysis	3
BIOS 6649	Clinical Trials: Statistical Design and Monitoring	3
BIOS 6655	Statistical Methods for Genetic Association Studies	3
BIOS 6660	Analysis of Genomic Data using R and Bioconductor	3
<b>MS Thesis or MS Research Paper (4 credits)</b>		<b>4</b>
BIOS 6651	BIOS MS Research Paper	1-6
or BIOS 6950	Masters Thesis: Biostatistics	
<b>Total Hours</b>		<b>36</b>