BIOSTATISTICS (MS)

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

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