Yale School of Public Health  
Ph.D. in Biostatistics  
With a Specialization in Implementation and Prevention Science Methods  
Curriculum (2020-2021 Matriculation)

The Ph.D. degree requires a total of 16 course units. If a course is waived, a substitute course must be identified, approved by the student’s adviser, the Implementation Science Specialization Director, and the DGS.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Term Offered</th>
<th>Term Taken</th>
<th>Notes</th>
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</table>
| **PhD Required Courses**  
(13 course units) |                                                                      |       |              |              |                                                                      |
| BIS 623     | Advanced Regression Analysis or S&DS 612, Linear Models               | 1     | Fall         | 1st year     |                                                                      |
| EPH 508     | Foundations of Epidemiology and Public Health                        | 1     | Fall         | 1st year     |                                                                      |
| S&DS 610    | Statistical Inference                                                | 1     | Fall         | 1st or 2nd year |                                                                      |
| EPH 600     | Research Ethics and Responsibilities                                | 0     | Fall         | 1st year     |                                                                      |
| BIS 525     | Seminar in Biostatistics and Journal Club                           | 0     | Fall         | 1st year     |                                                                      |
| BIS 610     | Applied Area Readings for Qualifying Exams                          | 1     | Fall         | 2nd year     |                                                                      |
| BIS 695     | Summer Internship in Implementation Science Methods Research         | 0     | Summer       | 1st year     |                                                                      |
| BIS 678     | Statistical Practice I                                               | 1     | Fall         | 2nd year     |                                                                      |
| EMD 533     | Implementation Science                                              | 1     | Fall         | 1st, 2nd or 3rd year | Acceptable to take after 2nd year. Material not part of qualifying exams. |
| EPH 608     | Frontiers of Public Health **                                        | 1     | Either       | 1st, 2nd or 3rd year | Acceptable to take after 2nd year. Material not part of qualifying exams. |
| BIS TBD     | Advanced Methods in Implementation & Prevention Science              | 1     | Fall         | 2nd year     |                                                                      |
| BIS 537     | Statistical Methods for Casual Inference                            | 1     | Fall         | 2nd year     |                                                                      |
| BIS TBD     | Advanced Topics in Causal Inference                                  | 1     | Spring       | 2nd year     |                                                                      |

**PhD Elective Courses**  
(Choose at least 3 course units from the below)  
^ Strongly recommended for Implementation Science Specialization

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<thead>
<tr>
<th>Course Code</th>
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<th>Term Offered</th>
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<tbody>
<tr>
<td>HPM 611</td>
<td>Policy Modeling^</td>
<td>1</td>
<td>Fall</td>
<td></td>
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<tr>
<td>SBS 541</td>
<td>Community Health Program Evaluation^</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>SBS 575</td>
<td>Developing a Health Promotion and Disease Prevention Intervention^</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>SBS 580</td>
<td>Qualitative Research Methods in Public Health^</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>BIS 557</td>
<td>Computational Statistics</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>BIS 567</td>
<td>Bayesian Statistics</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>BIS 646</td>
<td>Nonparametric Statistical Methods and Their Applications</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>BIS 536</td>
<td>Measurement Error and Misclassification</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>S&amp;DS 541</td>
<td>Probability Theory or Advanced Probability</td>
<td>1</td>
<td>Fall</td>
<td>Strongly recommended</td>
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<tr>
<td>S&amp;DS 565</td>
<td>Applied Data Mining and Machine Learning</td>
<td>1</td>
<td>Either</td>
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<tr>
<td>S&amp;DS 600</td>
<td>Advanced Probability</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>CDE 516</td>
<td>Principles of Epidemiology II</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>CDE 534</td>
<td>Applied Analytic Methods in Epidemiology</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>EMD 538</td>
<td>Quantitative Methods for Infectious Disease Epidemiology</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>HPM 570</td>
<td>Cost-Effectiveness Analysis and Decision Making^</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>HPM 583</td>
<td>Microeconomics for Health Policy and Management</td>
<td>1</td>
<td>Spring</td>
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<tr>
<td>HPM 586</td>
<td>Advanced Health Economics</td>
<td>1</td>
<td>Fall</td>
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<tr>
<td>SBS 676</td>
<td>Questionnaire Development</td>
<td>1</td>
<td>Spring</td>
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** Students entering the program with an MPH or relevant graduate degree may be exempt from this requirement.

Updated: 4/3/2020

More on electives: Implementation and Prevention Science is an inter-disciplinary field. The more broadly you are trained, the more effective you will be as an independent statistical researcher as well as a collaborator.