BIOSTATISTICS, B.S. TO HEALTH DATA SCIENCE, M.S. ACCELERATED PROGRAM

Saint Louis University’s accelerated B.S. in Biostatistics/M.S. in Health Data Science is designed for students who demonstrate academic success in the biostatistics major and related coursework. The B.S. in Biostatistics is offered through the College for Public Health and Social Justice, which is accredited by the Council on Education for Public Health. The degree uses the American Statistical Association’s guidelines for undergraduate data health sciences.

This accelerated program enables biostatistics majors to obtain their undergraduate and master’s degrees in five years; they then enter the workforce up to a year earlier than with a traditional two-year master’s program. Students apply to the accelerated program during their fifth semester of collegiate study, and accepted students begin graduate coursework during senior year. Students retain undergraduate status, financial aid and tuition rates until their undergraduate degree is conferred after year four. At that time, students attain official graduate student status, pay graduate tuition, and become eligible for graduate assistantships.

For additional information see the catalog entries for the following programs:

Biostatistics, B.S.

Health Data Science, M.S.

Admission

SLU students in the biostatistics major who meet the eligibility requirements may apply in the fall semester of their junior year.

Eligibility requirements include:

- Students must be in their fifth semester of collegiate study.
- Students must have a minimum cumulative GPA of 3.00, and a mathematics/statistics GPA of 3.40.
- Students must demonstrate a plan to complete 90 of the 120 credits required for their biostatistics major by the beginning of their fourth year of studies.
- Students must be eligible to complete the accelerated curriculum with no more than 15 credits during each semester during year four of the program.
- Students must be in good academic and disciplinary standing with Saint Louis University and the College for Public Health & Social Justice.
- Students must demonstrate the potential for leadership in Biostatistics; this can be done through engagement in volunteer activities or work experience.

Application procedures and program details are outlined in the CPHSJ Undergraduate Public Health Student Handbook.

Requirements

The accelerated B.S./M.S. program allows students to use up to 15 graduate credits towards their undergraduate degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BST 3000</td>
<td>Intro to Statistical Computing</td>
<td>3</td>
</tr>
<tr>
<td>BST 3100</td>
<td>Applied Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>BST 3200</td>
<td>Applied Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>BST 4100</td>
<td>Theory of Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>BST 4200</td>
<td>Theory of Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>BST 4400</td>
<td>Introduction to Applied Data Management</td>
<td>3</td>
</tr>
<tr>
<td>EPI 4000</td>
<td>Intro Epidemiology: Foundations &amp; Practice</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 2100</td>
<td>Introduction to Global Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 3200</td>
<td>Evidence Based Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 4100</td>
<td>Biological Basis of Public Health</td>
<td>3</td>
</tr>
</tbody>
</table>

General Elective Courses

Select an additional 28 credits of general electives to achieve the minimum 120 credits for graduation.

Graduate Courses

Graduate requirements may change by the time the student is formally accepted into the program in junior year.

Applied Statistics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HDS 5310</td>
<td>Analytics and Statistical Programming</td>
<td>3</td>
</tr>
<tr>
<td>HDS 5320</td>
<td>Inferential Modeling</td>
<td>3</td>
</tr>
<tr>
<td>HDS 5330</td>
<td>Predictive Modeling and Machine Learning</td>
<td>3</td>
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Practical Computing Courses

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>HDS 5210</td>
<td>Programming for Health Data Scientists</td>
<td>3</td>
</tr>
<tr>
<td>HDS 5230</td>
<td>High Performance Computing</td>
<td>3</td>
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Health Science Application Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HMP 5000</td>
<td>Health Care Organization</td>
<td>3</td>
</tr>
<tr>
<td>ORES 5210</td>
<td>Foundations of Medical Diagnosis and Treatment</td>
<td>3</td>
</tr>
</tbody>
</table>
ORES 5300  Foundations of Outcomes Research I  3

Capstone Experience
HDS 5960  Capstone Experience  3

Total Credits  147

† A total of 62 credits are required for completion of the core curriculum. Some core requirements have multiple options for satisfactory completion. A more detailed explanation of core curriculum requirements can be found in the CPHSJ Undergraduate Public Health Student Handbook.

‡ Fulfills the cultural diversity core requirement.

Continuation Standards

• Cumulative GPA of at least 2.00
• Cumulative GPA of at least 3.0, with a MATH and BST GPA of 3.40 in order to participate in the graduate program
• Minimum grade of "B-" in all graduate-level courses
• Minimum grade of "C" in all B.S. in Biostatistics major courses
• Minimum grade of "C-" in all core courses
• Minimum grade of "D" in all remaining general elective courses counting toward the minimum 120 credits required for graduation

Roadmap

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

Course  Title  Credits

Year One
Fall
BIOL 1240  General Biology: Information Flow and Evolution  and Principles of Biology I Laboratory  4
& BIOL 1245
ENGL 1900  Advanced Strategies of Rhetoric and Research  3
HIST 1110  Origins of the Modern World to 1500  3
General Elective  3
General Elective  3

Credits  14

Spring
BIOL 1260  General Biology: Transformations of Energy and Matter  and Principles of Biology II Laboratory  4
& BIOL 1265
HIST 1120  Origins of the Modern World (1500 to Present)  3
MATH 1510  Calculus I  4
PUBH 2100  Introduction to Global Health ‡  3

Credits  14

Year Two
Fall
BTM 2000  Introduction to Business Technology Management  3
MATH 1520  Calculus II  4
PHIL 1050  Introduction to Philosophy: Self and Reality  3
Language Level 1 or higher  3
Social Science Elective  3

Credits  16

Spring
BST 3000  Intro to Statistical Computing  3
MATH 2530  Calculus III  4
THEO 1000  Theological Foundations  3
Language Level 2 or higher  3
Literature, Fine Arts, or Performing Arts Elective  3

Credits  16

Year Three
Fall
‡ Eligible students formally apply to the Accelerated Program.
BST 3100  Applied Biostatistics I  3
EPI 4000  Intro Epidemiology: Foundations & Practice  3
PUBH 3200  Evidence Based Public Health  3
General Elective  3
General Elective  3

Credits  15

Spring
Department reviews applications, conducts interviews, and qualified students are notified of acceptance.
BST 3200  Applied Biostatistics II  3
MATH 3110  Linear Algebra for Engineers  or MATH 3120  Introduction to Linear Algebra  3
PHIL 2050  Ethics  3
General Elective  3
General Elective  3

Credits  15

Year Four
Fall
Formal participation in the Accelerated Program begins. Students maintain undergrad status and take a maximum of 15 credits.
BST 4100  Theory of Biostatistics I  3
BST 4400  Introduction to Applied Data Management  3
BTM 3300  or CSCI 4710  Managing Databases and Big Data  or Databases  3
HDS 5310  Analytics and Statistical Programming  3
ORES 5300  Foundations of Outcomes Research I  3

Credits  15

Spring
Students take a maximum of 15 credits. B.S. degree is conferred in May.
BST 4200  Theory of Biostatistics II  3
HDS 5210  Programming for Health Data Scientists  3
<table>
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<td>Social Science Elective</td>
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<tr>
<td><strong>Credits</strong></td>
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**Summer**

Students are reviewed by the department and those in good academic standing officially earn graduate student status.

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<td>Inferential Modeling</td>
<td>3</td>
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<tr>
<td><strong>Credits</strong></td>
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**Year Five**

**Fall**

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<tbody>
<tr>
<td>HDS 5330</td>
<td>Predictive Modeling and Machine Learning</td>
<td>3</td>
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<tr>
<td><strong>Credits</strong></td>
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**Spring**

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<tbody>
<tr>
<td>HDS 5230</td>
<td>High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>HMP 5000</td>
<td>Health Care Organization</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
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**Summer**

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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>HDS 5960</td>
<td>Capstone Experience</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
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**Total Credits** 135

† Fulfills the cultural diversity core requirement.

Refer to the B.S. in Biostatistics roadmap for a list of approved English, fine arts, and social science classes.

**Contact Us**

Apply for Admission (http://www.slu.edu/admission/)

For additional admission questions please contact:
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Administrative Assistant
katie.linnenbrink@slu.edu
Tegeler Hall 300 West
314-977-3934