

# 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 masters degrees in 5 years; they then enter the workforce up to year earlier than with a traditional two-year masters program. Students apply to the accelerated program during junior year, 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. (<http://catalog.slu.edu/colleges-schools/public-health-social-justice/undergraduate-programs/biostatistics-bs>)

Health Data Science, M.S. (<http://catalog.slu.edu/colleges-schools/health-outcomes-research/health-data-science-ms>)

## 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./MS. program allows students to use up to 15 graduate credits towards their undergraduate degree.

Code	Title	Credits
<b>Required Core Courses</b> <sup>1</sup>		
BIOL 1240 & BIOL 1245	Principles of Biology I and Principles of Biology I Laboratory	4
BIOL 1260 & BIOL 1265	Principles of Biology II and Principles of Biology II Laboratory	4
ENGL 1900	Advanced Strategies Of Rhetoric and Research	3
HIST 1110	Origins of the Modern World to 1500	3
HIST 1120	Origins of the Modern World, 1500 to Present	3
ITM 2000	Information Technology with Supply Chains	3
ITM 3300 or CSCI 3710	Database Management Systems Databases	3
MATH 1510	Calculus I	4
MATH 1520	Calculus II	4
MATH 2530	Calculus III	4
MATH 3110 or MATH 3120	Linear Algebra for Engineers Introduction to Linear Algebra	3
PHIL 1050	Introduction to Philosophy: Self and Reality	3
PHIL 2050	Ethics	3
THEO 1000	Theological Foundations	3
Foreign Language proficient to 1020-level		6
Literature, Fine Arts, or Performing Arts Elective		3
Social Science Electives (Political Science, Psychology, Sociology, etc.)		6
<b>Required Biostatistics Major Courses</b>		
BST 3000	Intro to Statistical Computing	3
BST 3100	Applied Biostatistics I	3
BST 3200	Applied Biostatistics II	3
BST 4100	Theory of Biostatistics I	3
BST 4200	Theory of Biostatistics II	3
BST 4400	Introduction to Applied Data Management	3
EPI 4000	Intro Epidemiology: Foundations & Practice	3
PUBH 2100	Introduction to Global Health <sup>‡</sup>	3
PUBH 3200	Evidence Based Public Health	3
PUBH 4100	Biological Basis of Public Health	3
<b>General Elective Courses</b>		
Select an additional 28 credits of general electives to achieve the minimum 120 credits for graduation.		28
<b>Graduate Courses</b>		
Graduate requirements may change by the time the student is formally accepted into the program in junior year.		
<i>Applied Statistics Courses</i>		
HDS 5310	Analytics and Statistical Programming	3
HDS 5320	Inferential Modeling	3
HDS 5330	Predictive Modeling and Machine Learning	3
<i>Practical Computing Courses</i>		
HDS 5210	Programming for Health Data Scientists	3
HDS 5230	High Performance Computing	3

*Health Science Application Courses*

HMP 5000	Health Care Organization	3
ORES 5210	Foundations of Medical Diagnosis and Treatment	3
ORES 5300	Foundations of Outcomes Research I	3

*Capstone Experience*

HDS 5960	Capstone Experience	3
Total Credits		147

<sup>1</sup> 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 2.50
- 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
<b>Year One</b>		
<b>Fall</b>		
BIOL 1240 & BIOL 1245	Principles of Biology I and Principles of Biology I Laboratory	4
ENGL 1900	Advanced Strategies Of Rhetoric and Research	3
HIST 1110	Origins of the Modern World to 1500	3
General Elective		3
General Elective		1
Credits		14
<b>Spring</b>		
BIOL 1260 & BIOL 1265	Principles of Biology II and Principles of Biology II Laboratory	4
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**

ITM 2000	Information Technology with Supply Chains	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 or MATH 3120	Linear Algebra for Engineers or 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
!HDS 5310	Analytics and Statistical Programming	3
ITM 3300 or CSCI 3710	Database Management Systems or Databases	3
!ORES 5300	Foundations of Outcomes Research I	3
PUBH 4100	Biological Basis of Public Health	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
BST 4400	Introduction to Applied Data Management	3
!HDS 5210	Programming for Health Data Scientists	3

!ORES 5210	Foundations of Medical Diagnosis and Treatment	3
Social Science Elective		3
Credits		15
<b>Summer</b>		
Students are reviewed by the department and those in good academic standing officially earn graduate student status.		
!HDS 5320	Inferential Modeling	3
Credits		3
<b>Year Five</b>		
<b>Fall</b>		
!HDS 5330	Predictive Modeling and Machine Learning	3
Credits		3
<b>Spring</b>		
!HDS 5230	High Performance Computing	3
!HMP 5000	Health Care Organization	3
Credits		6
<b>Summer</b>		
!HDS 5960	Capstone Experience	3
Credits		3
Total Credits		135

‡ Fulfills the cultural diversity core requirement.

Refer to the B.S. in Biostatistics roadmap (<http://catalog.slu.edu/colleges-schools/public-health-social-justice/undergraduate-programs/biostatistics-bs/#roadmaptext>) 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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