

# STATISTICS (BS)

Students earning a B.S. in Statistics will acquire knowledge of a broad range of statistical techniques and methods, an understanding of the mathematical underpinnings of these methods and techniques, and the computational skills, such as R and SAS, to apply and implement these methods using real data. Statistics majors are in high demand in industry in a wide array of fields such as medical research, technology companies, pharmaceuticals, insurance, finance, government, genetics, public health, sports, and epidemiology to name a few.

## Curriculum

AP Credit Policies (<https://catalog.luc.edu/undergraduate/arts-sciences/mathematics-statistics/#policiestext>)

### Requirements

Code	Title	Hours
MATH 161	Calculus I	4
MATH 162	Calculus II	4
MATH 263	Multivariable Calculus	4
MATH 212	Linear Algebra	3
STAT 203 or STAT 335	Introduction to Probability & Statistics Introduction to Biostatistics	3
STAT 303	SAS Programming & Applied Statistics	3
STAT 304	Introduction to Probability	3
STAT 305	Introduction to Mathematical Statistics	3
STAT 307	Statistical Design & Analysis of Experiments (capstone)	3
STAT 308	Applied Regression Analysis	3

### Science Requirement

Select two of the following:		6
ANTH 101	Human Origins	
BIOL 101	General Biology I	
BIOL 102	General Biology II	
CHEM 160	Chemical Structure and Properties	
CHEM 180	Chemical Reactivity I	
ENVS 101	The Scientific Basis of Environmental Issues	
PHYS 121	College Physics I Lec/Dis	
PHYS 122	College Physics II Lec/Dis	

### Electives

Select three of the following:		9
STAT 306	Intro to Stochastic Processes	
STAT 310	Categorical Data Analysis	
STAT 311	Applied Survival Analysis	
STAT 321	Computational Aspects of Modeling and Simulation	
STAT 336	Advanced Biostatistics	
STAT 337	Quantitative Methods in Bioinformatics	
STAT 338	Predictive Analytics	
STAT 351	Nonparametric Statistical Methods	
STAT 370	Data Science Consulting	
STAT 388	Topics	

**Total Hours**

**48**

**Note:** This degree has waivers for both Quantitative and Scientific core.

## College of Arts and Sciences Graduation Requirements

All Undergraduate students in the College of Arts and Sciences are required to take two Writing Intensive courses (6 credit hours) as well as complete a foreign language requirement at 102-level or higher (3 credit hours) or a language competency test. More information can be found here (<https://www.luc.edu/cas/college-requirements/>).

## Additional Undergraduate Graduation Requirements

All Undergraduate students are required to complete the University Core, at least one Engaged Learning course, and UNIV 101. SCPS students are not required to take UNIV 101. Nursing students in the Accelerated BSN program are not required to take core or UNIV 101. You can find more information in the University Requirements (<https://catalog.luc.edu/undergraduate/university-requirements/>) area.

## Learning Outcomes

- After completing STAT 203 and STAT 304, students majoring in statistics will understand the fundamentals of probability theory by applying them properly to statistical methods.
- After completing introductory statistics courses (STAT 203, STAT 303, STAT 308), students majoring in statistics will be able to analyze and interpret descriptive statistics through a report.
- Upon completing the program, students majoring in statistics will be able to properly use statistical reasoning as it applies to inferential methods in a written analysis and/or oral presentation.
- Upon completing the program, students majoring in statistics will be able to create and interpret statistical models including understanding the limitations of the model in a written analysis and/or oral presentation.
- Upon completing the program, students majoring in statistics will be able to use statistical software to generate appropriate output for data analysis.