

Statistics and Data Science Honors (BSSDS)

The Bachelor of Science in Statistics and Data Science (SDS) provides students with foundational training and marketable skills in statistics and data science. The curriculum is designed to equip students to execute all stages of a data analysis, from data acquisition and exploration to application of statistics and machine learning methods to the creation of data products (e.g. reports, apps, dashboards). Throughout the program, students are exposed to the principles of and tools for conducting reproducible data science and are taught to think critically about relevant ethical and legal issues (e.g., data privacy, algorithmic bias, misrepresentation of findings). The program prepares students to enter the workforce directly, or after pursuing specialized graduate training, as statisticians and data scientists or in other roles where training in these fields is excellent preparation.

Students who plan to follow the Statistics & Data Science Honors concentration, must be admitted to the Dean's Scholars, Health Science, Scholars, or Polymathic Scholars Honors Program.

Total Hours Required: 120

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
SDS 313	Introduction to Data Science	3
M 408C	Differential and Integral Calculus	4
RHE 306	Rhetoric and Writing	3
<u>First-Year Signature Course (090)</u>		3
CH 301C	Foundations of Chemistry I	3
Hours		16
Semester 2		
C S 303E	Elements of Computers and Programming	3
M 408D	Sequences, Series, and Multivariable Calculus	4
SDS 315	Statistical Thinking	3
<u>U.S. History (060)</u>		3
<u>Natural Science and Technology, Part I (030)</u>		3
Hours		16
Year 2		
Semester 1		
SDS 431	Probability and Statistical Inference	4
M 340L	Matrices and Matrix Calculations	3
<u>American and Texas Government (070)</u>		3
BIO 315H	Advanced Introduction to Genetics: Honors	3
<u>Humanities (040)</u>		3
Hours		16
Semester 2		
SDS 334	Intermediate Statistical Methods	3
<u>U.S. History (060)</u>		3
BIO 325H	Genetics: Honors	3
<u>Natural Science and Technology, Part I (030)</u>		3
C S 313E	Elements of Software Design	3
Hours		15

Year 3		
Semester 1		
SDS 336	Practical Machine Learning	3
C S 327E	Elements of Databases	3
Hours chosen from: College of Liberal Arts and/or the College of Fine Arts course		3
<u>American and Texas Government (070)</u>		3
Honors mathematics course		3
Hours		15
Semester 2		
Hours chosen from: SDS		3
Hours chosen from: College of Liberal Arts and/or the College of Fine Arts course		3
Additional approved coursework		2
<u>Visual and Performing Arts (050)</u>		3
Honors coursework (excluding SDS)		3
Hours		14
Year 4		
Semester 1		
SDS 354	Advanced Statistical Methods	3
Hours chosen from: SDS		3
<u>Social and Behavioral Sciences (080)</u>		3
NSC 109.1	Planning Your Capstone Experience	1
SDS 379H	Honors Undergraduate Research	3
Hours		13
Semester 2		
SDS 357	Case Studies in Data Science	3
SDS 379H	Honors Undergraduate Research	3
Additional approved coursework		9
Hours		15
Total Hours		120

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#).

Code	Title	Hours
Honors Breadth Requirement		
Hours chosen from: Honors Mathematics course		3
Choose a sequence below:		6
Sequence 1:		
BIO 315H	Advanced Introduction to Genetics: Honors	
BIO 325H	Genetics: Honors	
Sequence 2:		
CH 301C	Foundations of Chemistry I	
CH 302C	Foundations of Chemistry II	
Sequence 3:		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
Additional hours chosen from:		3
BIO 315H	Advanced Introduction to Genetics: Honors	
BIO 325H	Genetics: Honors	
CH 301C	Foundations of Chemistry I	
CH 302C	Foundations of Chemistry II	
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
PHY 315	Wave Motion and Optics	

PHY 115L	Laboratory for Physics 315	
PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
Hours chosen from: Additional honors coursework (excluding SDS)		3
Hours chosen from: College of Liberal Arts and/or the College of Fine Arts course		6
Additional hours chosen from: An approved list of courses (see honors advisor for a complete list)		16
Mathematical and Computational Foundations		
Hours chosen from: (one must be an upper-division course)		9
M 340L	Matrices and Matrix Calculations	
or M 341	Linear Algebra and Matrix Theory	
C S 303E	Elements of Computers and Programming (or equivalent C S course)	
or C S 312	Introduction to Programming	
C S 327E	Elements of Databases (or equivalent C S course)	
Sequence 1:		
M 408C	Differential and Integral Calculus	
M 408D	Sequences, Series, and Multivariable Calculus	
Sequence 2:		
M 408K	Differential Calculus	
M 408L	Integral Calculus	
M 408M	Multivariable Calculus	
Sequence 3:		
M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	
M 408M	Multivariable Calculus	
Capstone		
Hours chosen from:		1
NSC 109.1	Planning Your Capstone Experience	
NSC 109.2	Health Science Scholars Capstone Experience Preparation	
NSC 109.4	Polymathic Capstone Field Invention	
Choose a sequence below:		6
Sequence 1:		
SDS 379H	Honors Undergraduate Research (taken twice)	
Sequence 2:		
NSC 323	Natural Sciences Topics	
NSC 371	Capstone Thesis Seminar	
<i>Subtotal</i>		53
Degree (see details below)		40
Free Elective		
<i>Subtotal</i>		40
General Education		
Core Curriculum		27
Foreign Language other than English, Beginning Proficiency		
<i>Subtotal</i>		27
College Requirements - Natural Sciences		
General University Requirements		
Total Hours		120

Degree-Bachelor of Science in Statistics Data Science (BSSDS)

Code	Title	Hours
Degree		
<i>SDS Breadth Requirement</i>		
Hours chosen from: In a single field of study other than SDS; at least six upper-division hours		12
<i>Statistics and Data Sciences</i>		
SDS 313	Introduction to Data Science	3
SDS 315	Statistical Thinking	3
SDS 431	Probability and Statistical Inference	4
SDS 334	Intermediate Statistical Methods	3
SDS 336	Practical Machine Learning	3
SDS 354	Advanced Statistical Methods	3
SDS 357	Case Studies in Data Science	3
Hours chosen from:		6
SDS 364	Bayesian Statistics	
SDS 366	Data Visualization	
SDS 368	Statistical Theory	
STA 372T.21	Time Series Forecasting	
Please see department website for a full list. https://stat.utexas.edu/academics/undergraduate-major		
Total Hours		40

Additional Requirements and Policies

- At least 21 hours of upper-division course work in Statistics and Data Sciences must be completed in residence at the university.
- Students must fulfill both the University's general requirements for graduation and the college requirements.
- They must also earn a grade of at least C- in all courses required for the major, and a grade point average in these courses of at least 2.00.
- More information about grades and the grade point average is given in the General Information Catalog.

Additional Requirements and Policies

Students must remain in good standing in the Dean's Scholars, Health Science Scholars, or Polymathic Scholars Honors Program, must submit an honors thesis, and present their research in an approved public forum, such as the Undergraduate Research Forum or CNS Honors Thesis Symposium.