THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE
Mathematics

BACHELOR OF SCIENCE (B.S.) IN DATA SCIENCE

EMPHASIS IN **COMPUTING**

NOTE: This is a sample plan for the 2025 catalog year; students are expected to meet with department advisors to personalize a plan based on their placements and academic needs.

The Mathematical Sciences lie at the heart of modern data science, providing essential tools for understanding and working with complex data. Offered through the Department of Mathematics, the B.S. in Data Science combines a strong foundation in mathematics and statistics with hands-on experience in computing and real-world data analysis. Students engage with complex data and applied projects throughout the curriculum, gaining the skills needed to drive innovation and discovery in science, technology, and AI.

The **emphasis in Computing** is intended for students who want to learn more about the computational side of data science.

Freshman Year

Fall		Spring	
CSC 110 Computer Programming I	4	[2] CSC 120 Intro to Computer Prog II	4
ENGL 101 - First Year Writing 1 (GE Foundation Composition)	3	ENGL 102 - First Year Writing 2 (GE Foundation Composition)	3
[1] MATH 122A Functions for Calculus	1	MATH 129 Calculus II	3
MATH 122B First-Semester Calculus	4	[3] DATA 201 Foundations of Data Science - GE Core: (Building Connections)	3
MATH 263 Intro: Stat+Biostatistics	3	[4] CSC 144 Discrete Mathematics for Computer Science I	3
UNIV 101 - Introduction to the General Education Experience (GE Entry)	1		
Total 16 Units		**Total 16 Units**	

Sophomore Year

Fall		Spring	
CSC 210 Software Development	4	CSC 345 Analysis of Discrete Structures	3
CSC 244 Discrete Mathematics for Computer Science II	3	[5] MATH 313 Intro to Linear Algebra	3
GE Foundation Second Language (First Semester)	4	GE Foundation Second Language (Second Semester)	4
GE Core: Exploring Perspectives or Building Connections	3	GE Core: Exploring Perspectives or Building Connections	3
GE Core: Exploring Perspectives or Building Connections	3	GE Core: Exploring Perspectives or Building Connections	3
Total 17 Units		**Total 16 Units**	

Junior Year

Fall		Spring	
CSC 335 Object-Oriented Programming and Design	3	CSC 460 Database Design	3
[6] CSC 380 Principles of Data Science	3	DATA 375 Intro to Statistical Computing	3
[7] Supporting Laboratory Science	4	[7] Supporting Laboratory Science	4
GE Core: Exploring Perspectives or Building Connections	3	UNIV 301 - General Education Portfolio (GE Exit)	1
GE Core: Exploring Perspectives or Building Connections	3	General Elective	3
Total 16 Units		**Total 14 Units**	

Senior Year

Fall		Spring	
CSC 480 Principles of Machine Learning	3	Upper-Division General Elective	3
DATA 498D Capstone: Data Science	3	Upper-Division General Elective	3
General Elective	1	Upper-Division General Elective	3
Upper-Division General Elective	3	Upper-Division General Elective	3
Upper-Division General Elective	3		
Total 13 Units		**Total 15 Units**	

This degree program requires at least 120 total units, including 42 upper division units (300-400 level)

1 MATH 122A and MATH 122b are a single-semester sequence of courses that cover Calculus I

2 ISTA 131 will **not** substitute for SC 120 as a prerequisite to future CSC courses for students selecting the Computing emphasis

3 DATA 201 is a new building Connections Gen Ed. Up to 3 courses may count to fulfill General Education Exploring Perspectives or Building Connections requirements as well as major, pre-major, minor, and/or certificate requirements

4 MATH 243 will also fulfill this requirement

5 Students who have transfer credit equivalent to MATH 215 may use it to fulfill this requirement, though they will not earn upper-division credit for the course

6 DATA/MATH 363 will also fulfill this requirement

7 For a list of lab science courses available to fulfill these requirements, please see the advisment report, website, or handbook.

THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE
Mathematics

BACHELOR OF SCIENCE (B.S.) IN DATA SCIENCE

EMPHASIS IN **MOLECULAR AND CELLULAR BIOLOGY**

NOTE: This is a sample plan for the 2025 catalog year; students are expected to meet with department advisors to personalize a plan based on their placements and academic needs.

The Mathematical Sciences lie at the heart of modern data science, providing essential tools for understanding and working with complex data. Offered through the Department of Mathematics, the B.S. in Data Science combines a strong foundation in mathematics and statistics with hands-on experience in computing and real-world data analysis. Students engage with complex data and applied projects throughout the curriculum, gaining the skills needed to drive innovation and discovery in science, technology, and AI.

The **emphasis in Molecular and Cellular Biology** is intended for students who are interested in applying data science methods to biology.

Freshman Year

Fall		Spring	
CSC 110 Computer Programming I or ISTA 130 Computational Thinking & Doing	4	CSC 120 Intro to Computer Prog II or ISTA 131 Dealing with Data	4
ENGL 101 - First Year Writing 1 (GE Foundation Composition)	3	ENGL 102 - First Year Writing 2 (GE Foundation Composition)	3
[1] MATH 122A Functions for Calculus	1	MATH 129 Calculus II	3
MATH 122B First-Semester Calculus	4	[2] DATA 201 Foundations of Data Science - GE Core: (Building Connections)	3
MATH 263 Intro: Stat+Biostatistics	3	GE Core: Exploring Perspectives or Building Connections	3
UNIV 101 - Introduction to the General Education Experience (GE Entry)	1		
MCB 195/295 MCB Colloquium	1		
Total 17 Units		**Total 16 Units**	

Sophomore Year

Fall		Spring	
MCB 181R Introduction to Molecular and Cellular Biology	3	[3] MATH 313 Intro to Linear Algebra	3
MCB 330 Critical Reasoning and Problem Solving in Biomedicine	1	MCB 404 Bioethics	3
GE Foundation Second Language (First Semester)	4	GE Foundation Second Language (Second Semester)	4
GE Core: Exploring Perspectives or Building Connections	3	GE Core: Exploring Perspectives or Building Connections	3
GE Core: Exploring Perspectives or Building Connections	3	GE Core: Exploring Perspectives or Building Connections	3
Total 14 Units		**Total 16 Units**	

Junior Year

Fall		Spring	
DATA 363 Intro to Statistical Methods	3	DATA 375 Intro to Statistical Computing	3
[4] ISTA 322 Data Engineering	3	MCB Elective 1 ex. MCB 410 Cell Biology	3
[5] Supporting Laboratory Science	4	MCB 416A Bioinformatics & Functional Genome Anls	3
GE Core: Exploring Perspectives or Building Connections	3	[5] Supporting Laboratory Science	4
UNIV 301 - General Education Portfolio (GE Exit)	1	General Elective	3
Total 14 Units		**Total 16 Units**	

Senior Year

Fall		Spring	
MCB 447 Big Data in Bio & Medicine	3	MCB elective 2 ex. MCB 489 Foundations of Synthetic Biology	3
Capstone ex. DATA 498D Capstone: Data Science	3	General Elective	3
General Elective	3	General Elective	3
General Elective	3	Upper-Division General Elective	3
Upper-Division General Elective	1	Upper-Division General Elective	3
Total 13 Units		**Total 15 Units**	

This degree program requires at least 120 total units, including 42 upper division units (300-400 level)

1 MATH 122A and MATH 122b are a single-semester sequence of courses that cover Calculus I

2 DATA 201 is a new building Connections Gen Ed. Up to 3 courses may count to fulfill General Education Exploring Perspectives or Building Connections requirements as well as major, pre-major, minor, and/or certificate requirements

3 Students who have transfer credit equivalent to MATH 215 may use it to fulfill this requirement, though they will not earn upper-division credit for the course

4 CSC 460 Database Design will also fulfill this requirement, but has additional prerequisites

5 For a list of lab science courses available to fulfill these requirements, please see the advisment report, website, or handbook.