

(For students admitted in 2021-22 under the 4-year degree)

BSc in Data Analytics in Science

In addition to the requirements of their major programs, students are required to complete the University and School requirements for graduation. For details please refer to the respective sections on this website.

Some courses used to fulfill Major and/or School Requirements can also fulfill University Common Core Requirements. Students may reuse a maximum of 9 credits of these courses to count towards Common Core Requirements.

Students may use no more than 6 credits earned from courses offered in self-paced online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

Major Requirements

Students **MUST** take the following courses prior to enrollment into the major

Major Pre-requisite course(s)

			Credit(s) attained
MATH		Note: [(MATH 1012 <u>OR</u> MATH 1013 <u>OR</u> MATH 1023) <u>AND</u> (MATH 1014 <u>OR</u> MATH 1024)] <u>OR</u> [MATH 1020]	4-7
MATH	1012	Calculus IA	4
MATH	1013	Calculus IB	3
MATH	1014	Calculus II	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3
MATH	1024	Honors Calculus II	3

Required Course(s)

			Credit(s) attained
DASC	2010**	Calculus for Data Analytics in Science	3
DASC	2020**	Linear Algebra for Data Analytics in Science	3
DASC	2110	Object-oriented Programming for Data Analytics in Science	3
DASC	2210**	A Survey on Big Data in Science and Society	1

DASC	2220**	Statistics and Probability for Data Analytics in Science	3
DASC	3120**	Data Structures for Data Analytics in Science	3
DASC	3230**	Statistical Modeling for Data Analytics in Science	3
DASC	3240**	Data Visualization in Science	3
DASC	3250**	Numerical Methods for Data Analytics in Science	3
DASC	4300**	Capstone Project for Data Analytics in Science	3
COMP	1021	Introduction to Computer Science	3

Elective(s)

			Minimum credit(s) required
SOSC		Social Science Electives (2 courses from the specified elective list, of which 1 course should be taken from Group 1 and 1 course from Group 2)	6
Group 1			
SOSC	1300	The World of Politics	3
SOSC	1420	Poverty	3
SOSC	1440	Introduction to Economics	3
SOSC	1510	Politics Through Film	3
SOSC	1850	Understanding Society	3
SOSC	1860	Population and Society	3
SOSC	1960	Discovering Mind and Behavior	3
SOSC	1980	Psychology of Personal Growth	3
Group 2			
SOSC	2140	Research Methods in the Social Sciences	3
SOSC	2310	Introductory Environmental and Health Economics	3
SOSC	2400	Quantitative Data Analysis for Social Research II	3
SOSC	3001	Understanding China, 1700-2000: A Data Analytic Approach	3
SOSC	3240	Application of Geographical Information Systems	3
SOSC	3260	Sustainability Science: Policy Problems and Perspectives	3
SOSC	3280	Methods for Demographic Analysis	3
SOSC	3540	Environmental Psychology	3
SOSC	3600	Public Policy Analysis	3
SOSC	3720	Introduction to Social Network Analysis	3
SOSC	4300	Computational Social Science	3
SOSC	4320	Policy Analysis and Design for Sustainable Development	3

Track Study

Students should follow one of the tracks and complete all requirements as specified

Applied Biosciences Track

Required Course(s)

			Credit(s) attained
LIFS	1901	General Biology I	3
LIFS	1902	General Biology II	3
LIFS	2040	Cell Biology	3
LIFS	3140	General Genetics	4
LIFS	3580	Bioinformatics	3
LIFS	4320	Data Science for Biology and Medicine	3
LANG	3024	Science Communication in English (Life Science)	3

Environmental Science Track

Required Course(s)

			Credit(s) attained
CHEM		Note: CHEM 1010 <u>OR</u> CHEM 1020	3
	CHEM 1010	General Chemistry IA	3
	CHEM 1020	General Chemistry IB	3
CHEM	1030	General Chemistry II	3
OCES	1030	Environmental Science	3
OCES	2001	Survey of Ocean Science	3
OCES	3001	Coastal Environmental Monitoring	3
OCES	3002	Remote Sensing, GIS and GPS	3
OCES	4203	Environmental Impact and Risk Assessment	3
LANG	3025	Science Communication in English (Environmental Science)	3

Information Science Track

Required Course(s)

			Credit(s) attained
DASC	4400**	Data Analytics in Information Science	3
PHYS		Note: PHYS 1111 <u>OR</u> PHYS 1112 <u>OR</u> PHYS 1312	3
	PHYS 1111	General Physics I	3

PHYS	1112	General Physics I with Calculus	3
PHYS	1312	Honors General Physics I	3
PHYS		Note: PHYS 1114 <u>OR</u> PHYS 1314	3
PHYS	1114	General Physics II	3
PHYS	1314	Honors General Physics II	3
PHYS	2022	Modern Physics	3
PHYS	4058	Information Physics	3
PHYS	4812	Contemporary Applications of Physics: Quantum Information Technology	1
LANG	3023	Science Communication in English (Physics)	3

Molecular Science and Cheminformatics Track

Required Course(s)

			Credit(s) attained
CHEM		Note: CHEM 1010 <u>OR</u> CHEM 1020	3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry IB	3
CHEM	1030	General Chemistry II	3
CHEM	2110	Organic Chemistry I	3
CHEM	4120	Biomolecular Chemistry	3
CHEM	4160	Cheminformatics	3
CHEM	4420	Statistical Machine Learning Methods for Chemical Data Analysis	3
LANG	3022	Science Communication in English (Chemistry)	3

****Remarks on course(s):**

- DASC 2010: This is a new course to take effect in Fall, 2022-23.
- DASC 2020: This is a new course to take effect in Fall, 2022-23.
- DASC 2210: This is a new course to take effect in Fall, 2022-23.
- DASC 2220: This is a new course to take effect in Fall, 2022-23.
- DASC 3120: This is a new course to take effect in Fall, 2022-23.
- DASC 3230: This is a new course to take effect in Fall, 2022-23.
- DASC 3240: This is a new course to take effect in Fall, 2022-23.
- DASC 3250: This is a new course to take effect in Fall, 2022-23.
- DASC 4300: This is a new course to take effect in Fall, 2022-23.
- DASC 4400: This is a new course to take effect in Fall, 2022-23.