

(For students admitted in 2023-24 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.

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.

Under the new 30-credit Common Core Program which is applicable to students admitted to the University in 2022-23 and thereafter, courses that have been counted towards School and/or Major Requirements are not allowed to be reused for fulfilment of the University Common Core Requirements. Students should look up the details of the Common Core Program including the general and School-/program-specific distributional requirements posted on the Common Core website where the link to it is available on this website.

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	Applied 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	Introduction to Psychology	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	3540	Environmental Psychology	3
SOSC	3600	Public Policy Analysis	3
SOSC	3720	Introduction to Social Network Analysis	3
SOSC	4300	Computational Social Science	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
OCES	1001	The Earth as a Blue Planet	3
OCES	1010	Principles and Applications of Environmental Science	3
OCES	2001	Survey of Ocean Science	3
OCES	3001	Coastal Environmental Monitoring	3
OCES	3160	Ecology	3
OCES	3301	Data Analysis in Ocean Science	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	1020	General Chemistry I	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