

School of Science - BSc in Data Science and Technology*(For students admitted in 2017-18 under the 4-year degree)***BSc in Data Science and Technology**

Students taking the BSc Program in Data Science and Technology as their first major are exempted from the School Requirements. However, they are still required to complete the University requirements in addition to the major requirements for graduation. For details please refer to the respective sections on this website. □

Some courses used to fulfill Major Requirements can also fulfill University Common Core Requirements. Students may reuse a maximum of 6 credits of these courses to count towards Common Core Requirements.

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 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [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
COMP		Note: COMP 1021 OR COMP 1022P OR COMP 1022Q	3
	COMP 1021	Introduction to Computer Science	3
	COMP 1022P	Introduction to Computing with Java	3
	COMP 1022Q	Introduction to Computing with Excel VBA	3
SCIE/ ENGG		Note: SCIE 1000 OR ENGG 1010	0
	SCIE 1000	Science School Induction	0
	ENGG 1010	Academic Orientation	0

Required Course(s)

			Credit(s) attained
MATH	2023	Multivariable Calculus	4
MATH		Note: MATH 2121 OR MATH 2131	4
	MATH 2121	Linear Algebra	4
	MATH 2131	Honors in Linear and Abstract Algebra I	4

MATH	2411	Applied Statistics	4
MATH		Note: MATH 2421 OR MATH 2431	4
	MATH 2421	Probability	4
	MATH 2431	Honors Probability	4
MATH	3322	Matrix Computation	3
MATH	3332	Data Analytic Tools	3
MATH	3423	Statistical Inference	3
MATH	3424	Regression Analysis	3
MATH/ COMP		Note: MATH 4432 OR COMP 4211	3
	MATH 4432	Statistical Machine Learning	3
	COMP 4211	Machine Learning	3
MATH/ COMP		Note: MATH 4995 OR COMP 4981 OR COMP 4981H	3-6
	MATH 4995**	Capstone Project for Data Science	3
	COMP 4981	Final Year Project	6
	COMP 4981H	Final Year Thesis	6
COMP		Note: (COMP 2011 AND COMP 2012) OR COMP 2012H	5-8
	COMP 2011	Introduction to Object-oriented Programming	4
	COMP 2012	Object-Oriented Programming and Data Structures	4
	COMP 2012H	Honors Object-Oriented Programming and Data Structures	5
COMP		Note: COMP 2711 OR COMP 2711H	4
	COMP 2711	Discrete Mathematical Tools for Computer Science	4
	COMP 2711H	Honors Discrete Mathematical Tools for Computer Science	4
COMP		Note: COMP 3711 OR COMP 3711H	3-4
	COMP 3711	Design and Analysis of Algorithms	3
	COMP 3711H	Honors Design and Analysis of Algorithms	4
LANG		Note: (LANG 2010 AND LANG 3011) OR (LANG 2030 AND LANG 4030)	6
	LANG 2010	English for Science I	3
	LANG 2030	Technical Communication I	3
	LANG 3011	English for Mathematics	3
	LANG 4030	Technical Communication II for CSE & CPEG	3

Elective(s)

			Minimum credit(s) required
MATH/ COMP		Data Science Electives (4 courses from the specified elective list, of which at least 2 courses should be taken from COMP, and at least 1 course but no more than 2 courses taken from MATH)	12
COMP courses			
	COMP 3211	Fundamentals of Artificial Intelligence	3
	COMP 3311	Database Management Systems	3

COMP 3632	Principles of Cybersecurity	3
COMP 4021	Internet Computing	3
COMP 4221	Introduction to Natural Language Processing	3
COMP 4331	Data Mining	3
COMP 4332	Big Data Mining and Management	3
COMP 4421	Image Processing	3
COMP 4631	Computer and Communication Security	3
COMP 4651	Cloud Computing and Big Data Systems	3

MATH courses

MATH 2033	Mathematical Analysis	4
MATH 3312	Numerical Analysis	3
MATH 3425	Stochastic Modeling	3
MATH 4335	Introduction to Optimization	3
MATH 4336	Introduction to Mathematics of Image Processing	3
MATH 4424	Multivariate Analysis	3
MATH 4425	Introductory Time Series	3

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

- MATH 4995: This is a new course to take effect in Fall 2018-19.