HONOURS BSC STATISTICS

Mathematics and statistics are not only powerful problem-solving tools, but also highly creative fields of studies that combine imagination with logic, and precision with intuition.

Mathematics is much more than numbers! Its basic goal is to reveal and model general patterns to help explain our world, whether they be found in electrical impulses in the human nervous system, the evolution of animal populations in their habitats, fluctuations in stock-market prices, or electronic communications. Mathematics reaches far beyond science and engineering into medicine, business and the social sciences.

Advances in mathematics and statistics lie behind many discoveries that are now part of our daily lives, such as MRI scanners, digital compression of music and video, secure electronic communications, data mining, genomic algorithms, futures pricing, and many other innovations.

The Department of Mathematics and Statistics offers Honours, majors and minors both in mathematics and in statistics. Our Honours program in statistics is accredited by the Statistical Society of Canada, allowing graduates to earn the A.Stat. professional designation. Moreover, the Department offers a joint honours program in mathematics and economics, a joint honours program in mathematics and computer science, as well as a multidisciplinary program in financial mathematics and economics. All our honours programs also include the co-operative education option.

This program is offered in English and in French.

Program Requirements

Co-operative education is available with this program.

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2023-2024 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

This program is accredited by the Statistical Society of Canada (SSC). To satisfy the requirements for the professional title of A. Stat. from the SSC, students must take three courses (9 units) at the 3000 level in one area other than mathematics and statistics. These three courses could be taken among the 9 elective units part of your Honours in Statistics or part of a minor in another area added to this program. Consult the Department of Mathematics and Statistics for details.

Basic Skills		
3 optional course units in English (ENG) at the 1000 or 2000 level		3 Units
Compulsory Courses		
ITI 1120	Introduction to Computing I	3 Units
MAT 1320	Calculus I	3 Units
MAT 1322	Calculus II	3 Units
MAT 1341	Introduction to Linear Algebra	3 Units
MAT 1362	Mathematical Reasoning and Proofs	3 Units
MAT 2122	Multivariable Calculus	3 Units
MAT 2125	Elementary Real Analysis	3 Units
MAT 2371	Introduction to Probability	3 Units
MAT 2375	Introduction to Statistics	3 Units
MAT 3172	Foundations of Probability	3 Units
MAT 3175	Introduction to Mathematical Statistics	3 Units
MAT 3375	Regression Analysis	3 Units
MAT 3378	Analysis of Experimental Designs	3 Units
MAT 3379	Introduction to Time Series Analysis	3 Units
MAT 4379	Survey Sampling	3 Units
Optional Courses		
3 course units from:		3 Units
MAT 2141	Honours Linear Algebra	
MAT 2342	Introduction to Applied Linear Algebra	
3 course units from:		3 Units
MAT 2324	Ordinary Differential Equations and the Laplace Transform	
MAT 2335	Introduction to Numerical Methods	
MAT 2384	Ordinary Differential Equations and Numerical Methods	
6 course units from:		6 Units
MAT 3341	Applied Linear Algebra	
MAT 3373	Methods of Machine Learning	
MAT 4371	Applied Probability	
MAT 4374	Computational Statistics	
MAT 4375	Multivariate Statistical Methods	
MAT 4376	Topics in Statistics	
MAT 4377	Topics in Applied Probability	
MAT 4378	Categorical Data Analysis	
MAT 4380	Advanced Regression	
MAT 4381	Bayesian Inference	
MAT 4382	Generalized Linear Models	
MAT 4383	Statistics Laboratory	
15 optional course units in mathematics (MAT) at the 3000 or 4000 level [1, 2, 3]		15 Units
Elective Courses		
9 elective course units offered by the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management		9 Units
36 elective course units [1, 2, 3]		36 Units
Total:		**120 Units**

Note(s)

1

The following courses are strongly recommended for students intending to pursue graduate studies in probability or statistics: MAT 3120, MAT 3121.

2

Other courses in probability and statistics which may be of interest include: MAT 4170, MAT 4171, MAT 4372.

3

The course MAT 3153 cannot be counted for units if you have previously passed MAT 4153. You may however take MAT 3153 and then subsequently take MAT 4153, and count both for units.