

JOINT HONOURS BSOCSC IN MATHEMATICS AND ECONOMICS

Mathematics

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.

Economics

Ever wonder why some countries are richer than others? Ever question why income inequality has been growing? Ever wonder why Canadian politicians worry when other countries may be going bankrupt? Economics can answer all these questions.

Economics examines how individuals and society make choices in a world where resources are limited. It focuses on the production, distribution and consumption of goods and services. Two important themes are efficiency (the absence of waste in the use of resources) and fairness. Since making choices is central to all human activities, studying economics often helps explain why people and governments behave in certain ways.

This program is offered in English and in French.

Program Requirements

Co-operative education is available with this program.

Requirements for this program have been modified. Please consult the 2020-2021 calendars (<http://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

Basic skills

| | | |
|----------|---------------------------|---------|
| ENG 1100 | Workshop in Essay Writing | 3 Units |
|----------|---------------------------|---------|

| | | |
|----------|---|---------|
| ENG 1120 | Selected Topics in Literature and Composition | 3 Units |
|----------|---|---------|

Total: **6 Units**

Mathematics (51 course 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 |

3 course units from: **3 Units**

MAT 2141 Honours Linear Algebra ¹

MAT 2342 Introduction to Applied Linear Algebra

6 course units from: **6 Units**

MAT 2143 Introduction to Group Theory

MAT 2324 Ordinary Differential Equations and the Laplace Transform

MAT 2348 Discrete Mathematics

MAT 2355 Introduction to Geometry

MAT 2362 Foundations of Mathematics ²

12 optional course units in mathematics (MAT) at the 3000 or 4000 level ^{3,4} **12 Units**

6 optional course units in mathematics (MAT) at the 4000 level ^{3,4} **6 Units**

Economics (42 course units)

| | | |
|----------|--------------------------------|---------|
| ECO 1102 | Introduction to Macroeconomics | 3 Units |
| ECO 1104 | Introduction to Microeconomics | 3 Units |
| ECO 2142 | Macroeconomic Theory I | 3 Units |
| ECO 2143 | Macroeconomic Theory II | 3 Units |
| ECO 2144 | Microeconomic Theory I | 3 Units |
| ECO 2145 | Microeconomic Theory II | 3 Units |
| ECO 2151 | Introduction to Econometrics | 3 Units |
| ECO 3152 | Macroeconomic Theory III | 3 Units |
| ECO 3153 | Microeconomic Theory III | 3 Units |

9 optional course units in economics (ECO) at the 3000 or 4000 level **9 Units**

6 optional course units in economics (ECO) at the 4000 level **6 Units**

Total: **93 Units**

Elective courses

21 elective course units **21 Units**

Total: **21 Units**

Note(s)

1

Students interested in graduate studies in mathematics should choose MAT 2141.

2

MAT 2362 is strongly recommended and is required for further study of logic.

This is a copy of the 2024-2025 catalog.

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.

4

Students planning to go to graduate school in Mathematics and Statistics must consult the Department of Mathematics and Statistics.