STATISTICS LIBERAL PROGRAM - CORE SCIENCE COMPONENT (B.SC.) (48 CREDITS)

Offered by: Mathematics and Statistics (Faculty of Science)
Degree: Bachelor of Science
Program credit weight: 48

Program Description

(45 or 48 credits)

This program provides training in statistics, with a solid mathematical core, and basic training in computing. With strong performance in an appropriate selection of courses, this program can lead to "A.Stat." professional accreditation from the Statistical Society of Canada, which is regarded as the entry level requirement for Statisticians practising in Canada.

Students may complete this program with a minimum of 45 credits or a maximum of 48 credits.

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Program Prerequisites

Students entering the Core Science Component in Statistics are normally expected to have completed the courses below or their equivalents. Otherwise they will be required to make up any deficiencies in these courses over and above the 45 credits required for the program.

Expand allContract all

Course	Title	Credits
MATH 133	Linear Algebra and Geometry.	3
MATH 140	Calculus 1.	3
MATH 141	Calculus 2.	4

Required Courses (27 credits)

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Course	Title	Credits
COMP 202	Foundations of Programming.[1]	3
MATH 204	Principles of Statistics 2.[2]	3
MATH 222	Calculus 3.[3]	3
MATH 235	Algebra 1.	3
MATH 236	Algebra 2.[4]	3
MATH 242	Analysis 1.	3
MATH 323	Probability.	3
MATH 324	Statistics.[2]	3
MATH 423	Applied Regression.	3

1 Students who have sufficient knowledge in a programming language do not need to take COMP 202 Foundations of Programming., but must replace it by either COMP 250 Introduction to Computer Science. or COMP 350 Numerical Computing..

2 Students have to take MATH 204 Principles of Statistics 2. prior to MATH 324 Statistics..

3 Students who have successfully completed a course equivalent to MATH 222 Calculus 3. with a grade of C or better may omit MATH 222 Calculus 3., but must replace it with 3 credits of complementary courses.

4 MATH 236 Algebra 2. is an equivalent prerequisiste to MATH 223 Linear Algebra. for required and complementary Computer Science courses listed below.

Complementary Courses (18 or 21 credits)

0-3 credits from:

Expand allContract all

Course	Title	Credits
MATH 203	Principles of Statistics 1.[1]	3

1 A student who has not completed the equivalent of MATH 203 Principles of Statistics 1. on entering the program must consult and academic adviser and take MATH 203 Principles of Statistics 1. in the first semester, increasing the total number of program credits from 45 to 48.

At least 6 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 250	Introduction to Computer Science.	3
COMP 350	Numerical Computing.[1]	3
MATH 209	Fundamentals of Statistical Modeling and Inference.	3
MATH 243	Analysis 2.	3
MATH 314	Advanced Calculus.	3
MATH 315	Ordinary Differential Equations.	3
MATH 316	Complex Variables.	3

MATH 317	Numerical Analysis.[1]	3
MATH 326	Nonlinear Dynamics and Chaos.	3
MATH 327	Matrix Numerical Analysis.	3
MATH 329	Theory of Interest.	3
MATH 340	Discrete Mathematics.	3
MATH 350	Honours Discrete Mathematics .	3
MATH 378	Nonlinear Optimization .	3
MATH 417	Linear Optimization.	3
MATH 430	Mathematical Finance.	3
MATH 463	Convex Optimization.	3

1 If chosen, students can take either MATH 317 Numerical Analysis. or COMP 350 Numerical Computing., but not both.

At least 9 credits selected from:

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Course	Title	Credits
COMP 551	Applied Machine Learning.	4
MATH 208	Introduction to Statistical Computing.	3
MATH 308	Fundamentals of Statistical Learning.	3
MATH 410	Majors Project.[1]	3
MATH 420	Independent Study.[1]	3
MATH 427	Statistical Quality Control.	3
MATH 447	Introduction to Stochastic Processes.	3
MATH 462	Machine Learning .	3
MATH 510	Quantitative Risk Management.	4
MATH 523	Generalized Linear Models.	4
MATH 524	Nonparametric Statistics.	4
MATH 525	Sampling Theory and Applications.	4
MATH 527D1	Statistical Data Science Practicum.[1]	3
MATH 527D2	Statistical Data Science Practicum.[1]	3
MATH 545	Introduction to Time Series Analysis.	4
MATH 556	Mathematical Statistics 1.	4
MATH 557	Mathematical Statistics 2.	4
MATH 558	Design of Experiments.	4
MATH 559	Bayesian Theory and Methods.	4
MATH 598	Topics in Probability and Statistics.	4
WCOM 314	Communicating Science.[1]	3

1 If chosen, students can take at most one of MATH 410 Majors Project., MATH 420 Independent Study., MATH 527D1 Statistical Data Science Practicum./MATH 527D2 Statistical Data Science Practicum., and WCOM 314 Communicating Science..