



FACULTY OF SCIENCE

STATISTICS

Statistics deals with the collection, analysis, presentation, and interpretation of numerical data.

Today's society is awash in information and data; the Internet has the capacity to flood us with raw information. Politicians, interest groups, and the media constantly cite numbers, ratios, and percentages to bolster points of view. Whose numbers can we believe? Does a certain pesticide cause cancer? Is the economy really up? Is that new medical treatment really effective? Statistics offers the tools to answer these kinds of questions. It has an almost limitless scope of application.

Many people use statistics poorly. Our courses in statistics and probability theory give students the background to use statistics carefully and correctly, with integrity and confidence. Theoretical courses stress the logical development of statistical methods, while our applied courses focus on the application of statistical methods to interpreting numerical data. Since computer programs are required in the analysis of large data sets, students will find it useful to study statistical computing and programming.

This program leads to either a **Bachelor of Science degree (3-year or 4-year)** or a **Bachelor of Arts degree (3-year or 4-year)** with a Major in Statistics. Students taking a degree in another Major may choose to enhance their degree by adding a **Minor** in Statistics as a secondary area of interest.

SAMPLE CAREERS

Graduates apply their expertise in agricultural research, health care research, quality control and actuarial work. They work with specialists such as economists, biologists, chemists, and doctors to assist in the design of experiments and sampling plans and the analysis of research data. The majority of statisticians find employment with private corporations or government departments and agencies. Statistics Canada representatives visit our campus regularly looking for statistics graduates to fill highly desirable jobs.

SAMPLE COURSES

Statistical Analysis I and II are first-year courses that introduce students to statistical analysis and its applications. These courses include elements of probability, discrete random variables, continuous random variables, statistical inference (hypothesis testing and confidence intervals) on one and two samples, analysis of variance, contingency tables, and regression analysis.

Survey Sampling I is a second-year course designed as a core course in a Statistics major and as a service course for Business, Economics, Psychology, and other social sciences, as well as natural resource management. It answers, among others, the following questions: How should a sample be selected? What sample size is required? How should the population characteristics be estimated?

Mathematical Statistics I and II are third-year courses that provide students with a firm foundation in probability theory, which is essential for a complete understanding of any advanced statistics. A sound theoretical basis is established for counting rules, distributions of discrete and continuous random

variables, joint and conditional distributions, and distributions of functions of random variables. Students are introduced to the theory of statistical estimation and hypothesis testing.

MORE SAMPLE COURSES

- Elementary Biological Statistics I & II
- Introduction to Statistical Computing
- Business and Management Statistics
- Statistical Quality Control
- Statistics in Research I & Analysis of Variance and Covariance
- Spatial Statistics

SAMPLE FIRST YEAR

STAT-1301(3) Statistical Analysis I and STAT-1302(3) Statistical Analysis II OR
STAT-1501(3) Elementary Biological Statistics and STAT-2001(3) Elementary Biological Statistics II
MATH-1103 (3) Introduction to Calculus I AND MATH-1104(3) Introduction to Calculus II OR the equivalent MATH-1101(6) Introduction to Calculus
MATH-1201(3) Linear Algebra I
RHET-1103(3) Academic Writing: Science or any other section of Academic Writing (if required)
12 credit hours Electives

***NOTE:** This sample first year is representative of the courses you may take. For many of our programs, you may choose another set of courses and still be well on your way to a degree. Also, for most programs you do not have to take 30 credit hours (five full courses) in your first year.*

“I’ve had so much encouragement from my professors. I think there is an effort to encourage women in mathematics and science, which is important. The message has been that I can do anything I put my mind to.”

- Erica Moodie (BA & gold medallist in Statistics at UWinnipeg) is an Associate Professor and Biostatistics Program Director with the Department of Epidemiology, Biostatistics & Occupational Health, at McGill University.

REQUIRED HIGH SCHOOL COURSES

Students must meet The University of Winnipeg’s general admission requirements, and must also have **Pre-Calculus Mathematics 40S or Applied Mathematics 40S**. Students lacking the prerequisite Pre-Calculus Mathematics 40S or Applied Mathematics 40S should enroll in MATH-0041 AND MATH 0042, Mathematical Access I and II, which together serve as a prerequisite replacement for Pre-Calculus Mathematics 40S.

HOW TO APPLY

For details on application requirements, deadlines, and to apply online, please visit:
uwinnipeg.ca/apply

For more information contact a student recruitment officer at welcome@uwinnipeg.ca or 204.786.9844. In any case where the University’s Academic Calendar and this fact sheet differ, the current Calendar takes precedence.

CONTACT US

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