



THE UNIVERSITY OF WINNIPEG

For more information visit www.uwinnipeg.ca or contact a student recruitment officer at welcome@uwinnipeg.ca or 204.786.9844. In any case where The University of Winnipeg Course Calendar and this fact sheet differ, the current Calendar takes precedence.

Statistics 2012 - 2013

Statistics deals with the collection, analysis, 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 sorts of questions. It has an almost limitless scope of application to business and government, as well as to physical, social, biological, and human sciences.

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.

The Statistics program focuses on a theme of rational decision-making. In keeping with this theme, we offer courses leading to either a **Bachelor of Science degree (3-year or 4-year)** or a **Bachelor of Arts degree (3-year or 4-year)**.

SAMPLE CAREERS

Our students have also applied their expertise in agricultural research, health care research, and quality control. Statistics can be applied to a broad range of areas. One obvious application is actuarial work. Statisticians also 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. Representatives of Statistics Canada visit our campus looking for Statistics graduates to fill highly desirable civil service jobs.

SAMPLE COURSES

Introduction to Statistical Analysis is a first-year course that introduces students in the natural, social, and human sciences to statistical analysis and its applications. The course includes elements of probability, discrete random variables, continuous random variables (t, F and chi-squared tests), 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 the following questions: How should a sample be selected? How large should the sample size be? How should the population characteristics be estimated? How reliable are these estimates?

Mathematical Statistics I is a third-year course that provides students with a firm foundation in probability theory, which is necessary for a complete understanding of any advanced statistics. A sound theoretical basis is established for counting rules, discrete random variables and their distributions, and joint and conditional distributions.

MORE SAMPLE COURSES

Applied Multivariate Analysis
Business and Management Statistics
Elementary Biological Statistics I and II
Intermediate Biological Statistics
Mathematical Statistics II

Operations Research
Simulation
Statistical Analysis for Chemists and Biologists
Statistical Quality Control
Statistics in Research I and II

WHAT OUR STUDENTS SAY...

"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 '00 Statistics) completed an MPhil. in Epidemiology at the University of Cambridge, and earned her PhD in Biostatistics in 2006 at the University of Washington. Currently she is an Assistant Professor at McGill University.*

DID YOU KNOW?

- Jennifer (Prokop) Asimit, a 2001 graduate with a double major in Mathematics and Statistics, obtained a M.Sc. and PhD in Biostatistics at the University of Western Ontario, while being funded by Natural Sciences and Engineering Research Council (NSERC) awards. During her graduate studies, she received the Canadian Journal of Statistics Award for the best paper of 2005.
- Zoe Moodie, graduated from UWinnipeg as a gold medallist with a B.Sc. in Statistics ('96) and is now a lead statistician with the Statistical Centre for HIV/AIDS Research and Prevention (SCHARP) in Seattle, Washington. She works on the clinical trials of HIV, smallpox, and Ebola vaccines. She is the author of 10 peer-reviewed articles in the area of HIV/AIDS and statistical methodology. She earned a PhD in Biostatistics from the University of Washington in 2001.
- Summer research employment opportunities funded by NSERC are available to students.
- 'There are lies, damn lies, and statistics.' (Take our courses and learn the difference!)

SAMPLE FIRST YEAR

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.

STAT-1201(6) Introduction to Statistical Analysis *OR the equivalent*

STAT-1501(3) Elementary Biological Statistics I *AND* STAT-1601(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-1105(3) Academic Writing (if required)

6 credit hours Humanities

6 credit hours Electives. Suggested examples are: ACS-1803(3) Introduction to Computer-Based Systems, PHYS-1101(6) Foundations of Physics I, additional courses in the Humanities

REQUIRED HIGH SCHOOL COURSES

You must meet The University of Winnipeg's general admission requirements, and you must also have **Pre-Calculus Mathematics 40S** or **Applied Mathematics 40S**. Students who are lacking the prerequisite Pre-Calculus Mathematics 40S should enroll in MATH-0040 which serves as a prerequisite replacement for Pre-Calculus Mathematics 40S.

HOW TO APPLY – Domestic Students

Apply online at uwinnipeg.ca or pick up an Application for Admission from your high school counsellor's office or the Admissions Office at The University of Winnipeg. To meet Scholarship deadline submit your application and \$75.00 application fee.

HOW TO APPLY – International Students

Apply online at uwinnipeg.ca/index/intl-apply and submit all official documents by mail. To meet Scholarship deadline submit application, fee, and documents by March 1st. International application fee is \$90, which includes a one-time courier fee.

CONTACT US

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