

School of Public Health

Collaborative Biostatistics Program

Offered in collaboration with the Department of Community Health and Epidemiology, College of Medicine; the Department of Mathematics and Statistics, College of Arts and Science; and the School of Public Health

Biostatistics is the study of statistical techniques applied to medical, biological and agricultural data. Applications arise in areas such as public health, clinical medicine, veterinary medicine, health services, and occupational/environmental health.

Through classroom participation, laboratory sessions, research, and biostatistical consulting opportunities with faculty members, masters (MSc) and doctoral (PhD) students have the opportunity to explore developments in theoretical statistics and the application of this theory in the life sciences.

The program provides students with opportunities to study and conduct research in such areas as:

- Design and analysis of clinical trials
- Longitudinal data analysis
- Analysis of complex survey data
- Measurement error models
- Computational statistics
- Multivariate statistics



MSc Degree

The program prepares MSc graduates for positions that require expertise in data management, study design, and statistical modelling.

After completing the program, graduates will be able to:

- Demonstrate proficiency in statistical theory;
- Apply statistical theory to problems in the medical, biological, and agricultural sciences;
- Collaborate on research teams;
- Address problems involved in the collection and management of data; and
- Participate actively in the drawing of conclusions from data analysis and in the presentation and writing of research reports and papers.

MSc students enrolled in the collaborative Biostatistics Program must complete a minimum of 15 credit units of coursework (nine required credit units and six elective credit units); participate in a non-credit research ethics course and a non-credit seminar course; and complete a thesis.

PhD Degree

The program prepares PhD graduates to assume faculty or other research-oriented positions in academic institutions or to take leadership positions in organizations that conduct health-related research. After completing the program, graduates will be able to:

- Develop new statistical methods using existing theory or apply existing statistical methods to address problems in the medical, biological, and agricultural sciences;
- Collaborate on research teams;
- Take a leadership role in study design, data management, statistical analysis, and interpretation of study results; and
- Be proficient in both the oral and written presentation of research results.

Doctoral students enrolled in the collaborative Biostatistics Program must complete a minimum of 15 credits units of coursework (12 required credit units and three elective credit units); participate in a non-credit seminar course and a non-credit research ethics course; complete qualifying and comprehensive examinations; and complete a dissertation based on original research.



Program Curriculum

Required Courses

The required credit and non-credit courses for both the MSc and PhD degree in the collaborative Biostatistics Program are as follows:

MSc Degree

- **CHEP 800** - Epidemiology I
- **STAT 850** - Mathematical Statistics and Inference
- **PUBH 842** - Current Biostatistical Methods and Computer Applications
- **BIOS 990** - Seminar in Biostatistics
- **GSR 960** - Introduction to Ethics and Integrity

PhD Degree

- **CHEP 806** - Applied Statistical Methods for Follow-up Data
- **CHEP 810** - Advanced Topics in Clinical Trials OR
STAT 834 - Advanced Experimental Design
- **STAT 848** - Multivariate Data Analysis
- **STAT 841** - Probability Theory
- **BIOS 990** - Seminar in Biostatistics
- **GSR 960** - Introduction to Ethics and Integrity

Elective Courses

MSc students are required to complete a minimum of six credit units of elective courses. PhD students are required to complete a minimum of three credit units of electives.

Please visit www.usask.ca/sph for a list of suggested elective courses for both the MSc and PhD degree programs.

Application Qualifications

Students applying for the MSc degree must have completed a four-year BSc or BA degree from a recognized university in one of the following disciplines: mathematics, statistics, applied statistics, biostatistics, quantitative psychology, or any other discipline with a strong background in mathematics or statistics.

Applicants must also have completed undergraduate courses in mathematical statistics and statistical inference, and must have maintained a minimum 75% average in the last 60 credit units of their previous program. Those holding a BSc in another discipline with at least an 80% grade point average may be admitted as probationary students.

Students applying for the PhD degree must have completed a thesis-based MSc from a recognized university in one of the following: mathematics, statistics, applied statistics, biostatistics, quantitative psychology, or another discipline with a strong background in mathematics or statistics with a minimum 75% grade point average in the last two years of study. To be eligible for admission as a PhD student, an applicant must have taken the following courses (or equivalents) during his/her MSc program: CHEP 800 (Epidemiology I), STAT 850 (Mathematical Statistics and Inference), and PUBH 842 (Current Topics in Biostatistics and Statistical Applications).

Applicants without these courses may be admitted as probationary students and will be required to complete these courses with a minimum 80% grade point average before being considered fully qualified for the program.

For more information on admission requirements, please visit www.usask.ca/sph.

Funding

There are a limited number of scholarships for students enrolled in the collaborative Biostatistics Program. These scholarships are awarded on the basis of academic merit.

Through the College of Graduate Studies and Research, the University of Saskatchewan offers a wide range of awards and scholarships to help students succeed in their programs.

For information on the dean's scholarship program and other financial awards offered by the College of Graduate Studies and Research visit www.usask.ca/cgsr.

Students should also discuss with their faculty advisor(s) the opportunities that exist to apply for Tri-Council funding or other external awards.

More Information

For more information regarding our program, prerequisites, tuition and scholarships, please contact us.

Website: www.usask.ca/sph

Email: sph.admissions@usask.ca

"The Biostatistics Program provides a first-class graduate training for students who aim to develop their career as biostatisticians in academia, government and industry. The course work is designed to provide us with a solid background in statistical theory and its application to problems in biomedical sciences. I have also gained communication skills needed to present statistical results to different audiences. Being a collaborative program, faculty members have expertise in different research areas and are engaged in a wide range of research projects from which students can develop their research topics. The program provides an interdisciplinary environment which stimulates learning and collaboration with program faculty on various clinical and population health research projects. I am fascinated by the opportunity to develop leadership skills needed to be a statistical collaborator on large scale research projects in the future. I highly recommend this program to others." ~Tolulope Sajobi, PhD Biostatistics SPH Alumni

