

MASTER OF SCIENCE BIOSCIENCE, TECHNOLOGY & PUBLIC POLICY (BIOL)

May 2024

Chair: Professor Craig Willis

Science and technology are tools that can improve the human condition but the rapid pace of change also brings unforeseen consequences and challenges. Science and technology cannot develop within a social vacuum. The objective of this program is to train students in advanced methods of Bioscience, and to place this body of knowledge in the broader context of modern society.

All areas of Biology are changing with technological advances. Our program provides students with a skill set that prepares them to work in both academia and industry at an advanced level in every area of biology including health research, genetics and genomics, molecular biology, evolution, physiology, natural resource management and conservation, environmental science, animal behaviour, cellular biology and others.

The program's specific objectives are to:

1. Provide students with breadth and depth of knowledge in their field of bioscience while providing the skills to communicate effectively and to make informed decisions and recommendations.
2. Provide an understanding of the ethical problems facing our society, and an appreciation of the full range of human, aesthetic and environmental values.
3. Train students in science and ethics, science and public policy and science in the context of global relations.

Admission (Deadline February 1)

Applicants for admission to the program must hold a recognized 4-Year Bachelor of Science or equivalent with a minimum overall GPA of 3.0 (70%) and no grade less than C+ in the last two years of full-time university study.

Further inquiries should be directed to the [Bioscience Graduate Program Chair](#). Applications are available online at the Faculty of Graduate Studies website. Before applying, prospective students should contact and secure a research supervisor from the Department of Biology or a supervisor from another department conducting research relevant to Bioscience. For example, faculty members from Chemistry, Physics, Environmental Studies and Science, Kinesiology and Applied Health, and Geography have all supervised students in the program.

REQUIREMENTS FOR AN MSc IN BIOSCIENCE, TECHNOLOGY & PUBLIC POLICY

Students are enrolled in the Masters program for a minimum of two years and take a minimum of 12 credit hours of courses. A major research project culminating in a Master of Science thesis must be completed and successfully defended to graduate from the program. As a condition of admission, each MSc student must have a supervisor who is a member of the Faculty of Graduate Studies at the University of Winnipeg and belongs to a relevant Department at the University of Winnipeg (see above) or is an adjunct professor in the Dept. of Biology at The University of Winnipeg. The supervisor provides direction to the student on the program of study, directs research, and supervises thesis work. The student must also have a thesis committee including the supervisor and at least two other faculty members to help guide and review thesis research. Course work includes three elements: core Bioscience courses; courses in BioScience & Technology and courses that place science in the broader context of society. Students are required to obtain a minimum average GPA of 3.0 and no grade less than B in all required coursework.

Courses:

Students must complete a combination of required courses (and elective courses if required). Supervisors may assign more than the minimum 12 credit hours for a student degree program. With the exception of Seminars in Biology, and at the discretion of the Bioscience Graduate Program Chair, students are allowed to substitute up to 3 credit hours with a course taken from a different Institution.

Required:

- GBIO 7101 Seminars in Biology (3 credits, continuing throughout registration period)
- GBIO 7111 Thesis course (continuing throughout registration period)
- GBIO 7103 Bioscience and Policy (3 credits)

Electives:

Minimum 3 credits from Core Bioscience Curriculum

- GBIO 7402 Current Topics in Ecology (3 credits)
- GBIO 7304 Current Topics in Genetics & Genomics (3 credits)
- GBIO 7100 Directed Studies in Life Sciences (3 credits)

Minimum 3 credits from Bioscience & Technology Curriculum

- GBIO 7201 Molecular Biotechnology (3 credits)
- GBIO 7202 Geographic Information Analysis (G.I.A.) (3 credits)
- GBIO 7102 Directed Studies in Biosciences and Technology (3 credits)

- GBIO 7104 Analysis of Biological Data (3 credits)
- GBIO 7204 Bioinformatics Biotechnology (3 credits)

Other Bioscience and Policy Curriculum courses that might be of interest

- MULTI 7219 Summer Institute - Infectious Diseases Policy (3 credits)
- ENV/GBIO 4617/7617 Ecology and management of species at risk (3 credits)
- GBIO-7614 (3) Critical Environmental Issues