



FACULTY OF SCIENCE

## BIOLOGY

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**Biology is the study of any form of life, from the DNA molecule to the interactions of organisms within the various ecosystems of the earth.**

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Biology is a broad discipline, which includes the subject areas of botany, zoology, microbiology, cell biology, ecology, and genetics. It examines all life forms from the simple to the complex, and is an ideal partner to study in chemistry, physics, and mathematics. If you have an aptitude for science and possess a keen desire to understand the living world, you will find the study of biology very rewarding.

At The University of Winnipeg, we teach a wide range of courses and offer active research programs in botany ecology, forest ecology, mosquito biology, evolutionary genetics, molecular biology, evolutionary physiology, aquatic conservation, soil microbiology and remediation, bioinformatics, genomics, dendrochronology, behavioural biology of birds, effects of UV radiation on the environment, and cell and cancer biology.

Biology can be explored in several different programs of study at The University of Winnipeg which can lead to a **Bachelor of Science degree (3-year, 4-year, or Honours)**.

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### SAMPLE CAREERS

Graduates work in government laboratories, university research laboratories, scientific consulting organizations, pharmaceutical companies, conservation and wildlife management, and the scientific publishing industry. **Graduates may apply to enter dental, medical, veterinary science, and education faculties.** Those who have obtained the 4-year B.Sc. or Honours B.Sc. are well prepared to enter graduate programs, ultimately leading to careers as scientists.

### SAMPLE COURSES

**Evolution, Ecology, and Biodiversity** is a first-year course emphasizing the evolutionary and ecological processes that underlie the relationship between an organism and its environment. Topics include natural selection and the origin of species, systematics and taxonomy, the origin of biological diversity, growth and reproductive strategies, and communities and ecosystems.

**Cells and Cellular Processes** is a first-year course introducing the cellular level of organization. It covers cytology, cell metabolism, patterns of inheritance, and mechanisms of cellular control.

**Genetics** is a second-year course dealing with the processes of heredity at all levels, from molecules to populations. It provides a basis for the evaluation of contemporary issues such as genetic engineering, environmental mutagens, and gene therapy. Topics include extensions to Mendelian analysis, mapping techniques, mutation, the genetics of bacteria and viruses, the gene, and recombinant DNA technology.

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## MORE SAMPLE COURSES

- Cell Biology
- Microorganisms and Disease
- Comparative Animal Physiology
- Parasites and Disease
- Biology of the Vertebrates
- Human Reproductive Biology
- Forest Ecology
- Urban Forestry

## SAMPLE FIRST YEAR

BIOL-1115(3) Cells and Cellular Processes  
BIOL-1116(3) Evolution, Ecology, and Biodiversity  
CHEM-1111(3) Introduction to the Chemical Properties of Matter  
CHEM-1112(3) Basic Principles of Chemical Reactivity  
STAT-1501(3) Elementary Biological Statistics I OR STAT-1301(3) Statistical Analysis I and  
STAT-1302(3) Statistical Analysis II  
RHET-1103(3) Academic Writing: Science or any other section of Academic Writing (if required)  
6 credit hours Humanities  
3 to 6 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.*

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***“I credit a lot of my success to the personal attention and research opportunities available at The University of Winnipeg. Because this is a university with an undergraduate focus, professors are very accessible to undergraduate students.”***

-- David Selchen, (B.Sc. Biology and Psychology), Rhodes Scholar

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## REQUIRED HIGH SCHOOL COURSES

In addition to meeting The University of Winnipeg’s general admission requirements, you must have standing in **Chemistry 40S** and **Pre-Calculus Mathematics 40S** or **Applied Mathematics 40S**.

## HOW TO APPLY

For details on application requirements and deadlines, and to apply online, please visit:  
[uwinnipeg.ca/apply](http://uwinnipeg.ca/apply)

For more information contact a student recruitment officer at [welcome@uwinnipeg.ca](mailto: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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