BIOLOGY (HBSc)

Department of Biology

Biology is the study of living organisms and involves observation and analysis of the tree of life. The foundation of biology is based upon the core concepts of evolution: natural selection and speciation. The study of biology is applicable to all facets of life, helping address such major problems as conservation, overpopulation, pollution, medicine and disease.

UTM Biology is a dynamic community. With nearly 40 active research scientists, more than one hundred graduate students and many post-doctoral fellows doing state-of-the-art research using the latest techniques, our students will have the opportunity to learn from the best. Our undergraduate research projects and summer student placements in research labs will give students valuable, first-hand experience working in a laboratory environment.

MAKE THE MOST OF YOUR TIME AT UTM!

We want to help you maximize your university experience, so we’ve pulled together information and interesting suggestions to get you started, although there are many more! As you review the chart on the inside pages, note that many of the suggestions need not be restricted to the year they are mentioned. In fact, activities such as joining an academic society, engaging with faculty and seeking opportunities to gain experience should occur in each year of your study at UTM. Read through the chart and create your own plan using My Program Plan found at www.utm.utoronto.ca/program-plans

Programs of Study (POSt)

• Specialist Program ERSPE2364 Biology (Science)
• Major Program ERMAJ2364 Biology (Science)
• Minor Program ERMIN2364 Biology (Science)

Check out...

How do plants compete and defend? Learn about the population and community ecology of plants in BIO330H5. What’s the connection between animal behaviour and their physiology? In BIO380H5, learn about early embryonic development by studying how the embryo becomes organized so that all of the tissues and organs of the adult body form in the right places at the proper times.

What can I do with my degree?

The career you choose will depend on your experience and interests. Visit the Career Centre to explore your career options.

Careers for graduates: Biological technician; Environmental educator; Greenhouse grower; Paramedic; Science magazine editor/ writer; Zoology field researcher; Informationist; Doctor; Physician’s assistant; Nurse; Quality controller; Food science technologist; Aquaculture technician; Botanist; Herbarium technician; Dietitian.

Workplaces: Manufacturing and processing; Government; Industrial inspection firms; Scientific R&D; Conservation authorities; Zoos, aquariums, national/provincial parks; Pharmaceutical; Academic medical centres/laboratories; Health care.
How to Use this Program Plan

Read through each year. Investigate what appeals to you here and in any other Program Plans that apply to you.

Visit www.utm.utoronto.ca/program-plans to create your own plan using My Program Plan. Update your plan yearly.

1st Year
- Enrol in courses BIO150H5, BIO153H5, CHM110H5, CHM212H5, MAT135H5 and MAT134H5. For the Biology Specialist (ERSPE2364), attain 3.0 credit from the second list of required first year courses in the Academic Calendar.
- Choose a program of study (Subject POSt) once you complete 4.0 credits. Use the Degree Explorer and the Academic Calendar to plan your degree.
- Develop foundational academic skills and strategies by enrolling in a UTMONE course.
- Use the Co-Curricular Record (CCR). Search for opportunities beyond the class room, and keep track of your accomplishments.
- Attend the Get Hired Fair through the Career Centre (CC) to learn about on- and off-campus opportunities.
- Attend the Experiential Education Fair.
- Networking simply means talking to people and developing relationships with them. Start by joining the Erindale Biology Society (EBS). Follow them @utmEBS. Go to the EBS Meet the Prof Night, or the Biology department’s Walk a Biologist or Biology Seminar Series.
- Visit the UTM Library Reference Desk.

2nd Year
- Enrol in courses: BIO203H5, BIO205H5, BIO209Y5, BIO207H5, and BIO209H5.
- Consider applying for the Research Opportunity Program (ROP) courses BIO299Y and BIO399Y. Visit the EEU website for ROP Course Prerequisites. Attend the RGASC’s PART to enhance your research skills.
- Use the Career & Co-Curricular Learning Network (CLNuX) to find postings for on- and off-campus work and volunteer opportunities as well as Work-Study.
- Ask your professor about volunteering in their lab.
- Do you have a professor you want to connect with? Ask them a question during office hours. Discuss an assignment. Go over lecture material. Don’t be shy! Learn Tips On How to Approach a Professor available through the Experiential Education Unit (EEU).

3rd Year
- Attend the RGASC’s Research Thesis course.
- Information Session regarding BIO400Y5 Internship Course and Deck a Biologist Research Project following the completion of your degree. Speak to the Biology Undergraduate Advisor.
- Establish a professional presence on social media (e.g. LinkedIn).
- Curious about grad school? Connect with a grad student through the CSE’s Grad Connect program to get the inside scoop.
- Get a global experience though our Biology Seminar Series. Every Friday during the academic year, the Department of Biology hosts an exciting seminar given by a guest speaker. Guest speakers are from Ontario, across Canada, as well as International. Topics cover every aspect of biology. All Biology students are welcome to attend.
- Earn credits overseas! Apply to study for a summer term, or year at one of 170+ universities. Speak to the IEC for details about Global and Intercultural Fluency Training Series (GIFTS)
- Participate in International Education Week
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- Earn credits overseas! Apply to study for a summer term, or year at one of 170+ universities. Speak to the IEC for details about Course Based Exchange, funding and travel safety.
- Thinking about BIO481Y5 Research Project? Secure a supervisor well ahead of course enrolment.
- Considering further education? Research application requirements, prepare for admission tests (LSAT, MCAT), and research funding options (OGS, NSERC, CIHR).

4th or Final Year
- ATTAIN 2.0 CREDITS IN BIOLOGY FROM THE 300 OR 400 LEVEL.
- In the spring of your third year, attend the Biology Department’s Information Session regarding BIO400Y5 Internship Course and BIO481Y5 Research Thesis course.
- See the Office of the Registrar about degree requirements and the Biology Undergraduate Advisor about program requirements.
- Learn techniques biologists use in the field! Use field ornithology techniques in BIO304H5, and observe and analyze animal behaviour in BIO311Y5. Speak to the Biology Undergraduate Advisor.
- Apply to the Ontario Ministry of Natural Resources Internship Program as a recent graduate. Look at the MNRF website for eligibility and application details.
- Consider applying for a in the Summer Undergraduate Research Project following the completion of your degree. Speak the Biology Undergraduate Advisor.
- Get a global experience though our Biology Seminar Series. Every Friday during the academic year, the Department of Biology hosts an exciting seminar given by a guest speaker. Guest speakers are from Ontario, across Canada, as well as International. Topics cover every aspect of biology. All Biology students are welcome to attend.
- Consider applying for a in the Summer Undergraduate Research Project following the completion of your degree. Speak the Biology Undergraduate Advisor.
- Engage in programs like ISTEP and THRIVE to support your transition out of the University!
- Do you want to study dolphin and whale biology and conservation in tropical Asia, or the ecology of the Arctic? Enrol in BIO416H5 to choose from a variety of field courses offered through the Ontario Universities Program in Field Biology.
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- Thinking about BIO481Y5 Research Project? Secure a supervisor well ahead of course enrolment.
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Build Skills
- Use the Co-Curricular Record (CCR). Search for opportunities beyond the class room, and keep track of your accomplishments.
- Attend the Get Hired Fair through the Career Centre (CC) to learn about on- and off-campus opportunities.
- Attend the Experiential Education Fair.

Build a Network
- Networking simply means talking to people and developing relationships with them. Start by joining the Erindale Biology Society (EBS). Follow them @utmEBS. Go to the EBS Meet the Prof Night, or the Biology department’s Walk a Biologist or Biology Seminar Series.
- Visit the UTM Library Reference Desk.

Build a Global Mindset
- Engage with the many programs offered by the International Education Centre (IEC), whether you are an international or domestic student. Consider joining the Canada Eh? day trips or English Language Conversation Circles to deepen your global mindset.
- First-year international students can also take advantage of THRIVE ’IN, a one-day conference dedicated to helping you start your UTM journey successfully.
- Participate in International Education Week and engage in programs like Global and Intercultural Fluency Training Series (GIFTS) to build on your leadership and communication skills in global citizenship.
- Learn about and prepare for a future UTM Abroad Experience through the IEC to strengthen and enhance your intercultural skill set, and learn about other cultures while sharing your own!

Plan for Your Future
- Speak to the Biology Undergraduate Advisor for biology program advice and details.
- Attend the Program Selection & Career Options workshop offered by the Office of the Registrar and the CC.
- Check out Careers by Major at the CC to see potential career options.
- Explore careers through the CC’s Job Shadow Program.
- Consider further education? Attend the CC’s Graduate & Professional Schools Fair. Talk to professors – they are potential mentors and references for further education.

*Consult the Academic Calendar for greater detail on course requirements, program notes and degree requirements.
Skills developed in Biology

To be competitive in the job market, it is essential that you can explain your skills to an employer. Visit the Career Centre to learn how to articulate and market the following skills:

Communication & interpersonal: write scientific reports; present research findings; interact professionally with a multidisciplinary team of researchers, technicians, students and professors; and analyze and evaluate information.

Research: collect and preserve field organisms; dissect preserved or euthanized specimen; inspect specimens; and analyze and evaluate information.

Technical: use specialized computer programs; perform laboratory procedures; maintain laboratory equipment and instrumentation; and comply with quality control procedures.

Quantitative: analyze data for trends and apply statistical tests to data.

Critical thinking & problem-solving: logically interpret trends and results.

Services that support you

- Accessibility Services (AS)
- Career Centre (CC)
- Centre for Student Engagement (CSE)
- Equity, Diversity & Inclusion Office (EDIO)
- Experiential Education Unit (EEU)
- Health & Counselling Centre (HCC)
- Indigenous Centre (IC)
- International Education Centre (IEC)
- Office of the Registrar (OR)
- Recreation, Athletics and Wellness Centre (RAWC)
- Robert Gillespie Academic Skills Centre (RGASC)
- UTM Library, Hazel McCallion Academic Learning Centre (HMALC)

Get involved

Check out the 100+ student organizations on campus. Here are a few:

- Erindale Biology Society (EBS)
- UTM Student Union (UTMSU)
- UTM Athletics Council (UTMAC)

For a full listing of clubs on campus visit the Student Groups and Societies Directory

Department of Biology

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d.matias@utoronto.ca
www.utm.utoronto.ca/biology

FUTURE STUDENTS

Admission to UTM

All program areas require an Ontario Secondary School Diploma, or equivalent, with six Grade 12 U/M courses, or equivalent, including English. The admission average is calculated with English plus the next best five courses. The Grade 12 prerequisites for this program are Advanced Functions, Biology and Chemistry. The approximate average required for admission is low- to mid-80s. More information is available at utm.utoronto.ca/viewbook.

NOTE: During the application process, applicants will select the Life Sciences admissions category, but will not officially be admitted to a formal program of study (Specialist, Major, and/or Minor) until after first year.

Sneak Peek

What’s in your genes? Take BIO207H5 to find out about the principles of Mendelian inheritance and modern genetics. Our department also offers students access to our herbarium which houses about 95,000 specimens of vascular plants.

Effective biological training involves careful study of real organisms, both living and dead. Consequently, almost all Biology courses with laboratories involve students in one or more of the following activities with animals, plants, and/or microorganisms: collecting and preserving organisms from the field; dissecting or handling preserved or euthanized specimens (or properly anaesthetized living specimens); observing and making measurements on organisms maintained under laboratory conditions approved by the Canadian Council of Animal Care.

Student Recruitment & Admissions

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www.utm.utoronto.ca/future-students