

# BIOLOGY FOR HEALTH SCIENCES (HSBc)

*Department of Biology*

**Biology for Health Sciences** focuses on areas of biological science that relate to the health of humans and will provide a strong foundation for students interested in pursuing a career in the health sciences.

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](http://www.utm.utoronto.ca/program-plans)

### Programs of Study (POSt)

- Major Program ERMAJ1149 Biology for Health Sciences (Science)

### Check out...

Interested in examining cardiovascular, renal, respiratory and muscle systems' response to challenges such as altitude and depth under water? BIO414H5 examines these responses and provides students with hands on laboratory activities measuring physiological variables in these systems. In BIO380H5 you'll see how a human 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; Health records professional; Veterinary technician; Paramedic; Chiropractor; Pharmacologist; Massage therapist; Clinical research coordinator assistant; Informationist; Community health worker; Doctor; Nurse; Physician's assistant; Health policy analyst; Patient services coordinator; Dietitian; Occupational therapist.

**Workplaces:** Scientific R&D; Conservation authorities; Pharmaceutical; Consumer health libraries; Non-profit agencies; Hospitals and medical centres.



# BIOLOGY FOR HEALTH SCIENCES

## MAJOR Program Plan

## 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](http://www.utm.utoronto.ca/program-plans) to create your own plan using [My Program Plan](#). Update your plan yearly.



	1 <sup>ST</sup> YEAR	2 <sup>ND</sup> YEAR
PLAN YOUR ACADEMICS*	<p>Enrol in courses BIO152H5, BIO153H5; CHM110H5, CHM120H5; MAT132H5 and MAT134H5.</p> <p>Choose a program of study (Subject POST) once you complete 4.0 credits. Use the <b>Degree Explorer</b> and the <b>Academic Calendar</b> to plan your degree.</p> <p>Develop foundational academic skills and strategies by enrolling in a <b>utmONE</b> course. Build community and gain academic support through <b>LAUNCH</b>. Join a RGASC <b>Peer Facilitated Study Group</b>.</p>	<p>Enrol in courses: BIO202H5, BIO206H5, BIO207H5, BIO208H5, BIO209H5, and BIO259H5.</p> <p>Attend the RGASC's <b>Program for Accessing Research Training (PART)</b> to enhance your research skills.</p>
BUILD SKILLS	<p>Use the <b>Co-Curricular Record (CCR)</b>. Search for opportunities beyond the class room, and keep track of your accomplishments.</p> <p>Attend the <b>Get Hired Fair</b> through the Career Centre (CC) to learn about on- and off-campus opportunities.</p> <p>Attend the <b>Experiential Education Fair</b>.</p>	<p>Use the <b>Career &amp; Co-Curricular Learning Network (CLNx)</b> to find postings for on- and off-campus work and volunteer opportunities as well as <b>Work-Study</b>.</p> <p>Ask your professor about volunteering in their lab.</p>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the <b>Erindale Biology Society (EBS)</b>. Follow them @utmEBS. Go to the <b>EBS Meet the Prof Night</b>.</p> <p>Visit the UTM Library <b>Reference Desk</b>.</p>	<p>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 <b>Tips On How to Approach a Professor</b> available through the Experiential Education Unit (EEU).</p>
BUILD A GLOBAL MINDSET	<p>Engage with the many programs offered by the <b>International Education Centre (IEC)</b>, whether you are an international or domestic student. Consider joining the <b>Canada Eh?</b> day trips or <b>English Language Conversation Circles</b> to deepen your global mindset.</p> <p>First-year international students can also take advantage of <b>THRIVE'IN</b>, a one-day conference dedicated to helping you start your UTM journey successfully.</p>	<p>Learn about a future <b>UTM Abroad Experience</b>. Biology for Health Sciences students can enrol in <b>BIO209H5</b> (in addition to fulfilling application requirements) and during reading week, travel with the class to Peru. Students will gain insight into the contrasts between Canadian and Peruvian healthcare systems.</p> <p>Participate in <b>International Education Week</b>.</p>
PLAN FOR YOUR FUTURE	<p>Speak to the <b>Biology Undergraduate Advisor</b> for biology program advice and details.</p> <p>Attend the <b>Program Selection &amp; Career Options workshop</b> offered by the Office of the Registrar and the CC.</p> <p>Do you have any questions? Stop by the Hello desk in the <b>Student Services Hub</b>. Our Career Centre team is ready to support you.</p>	<p>Learn how your academics and career goals work together in a <b>Career Counselling appointment</b>.</p> <p>Explore careers through the CC's <b>Job Shadow Program</b> or <b>In the Field</b>.</p> <p>Considering <b>further education</b>? Attend the CC's <b>Graduate &amp; Professional Schools Fair</b>. Research application requirements, prepare for admission tests (LSAT, GMAT) and research funding options (OGS, SSHRC).</p>

\*Consult the Academic Calendar for greater detail on course requirements, program notes and degree requirements.

3 <sup>RD</sup> YEAR	4 <sup>TH</sup> OR FINAL YEAR
<p>Enrol in: BIO304H5, BIO310H5 and BIO380H5. Attain 1.0 credit from any of the course options listed for this program in the <b>Academic Calendar</b>. They can be completed in 3rd and/or 4th year.</p> <ul style="list-style-type: none"> <li>See the <b>Office of the Registrar</b> about degree requirements and the <b>Biology Undergraduate Advisor</b> about program requirements.</li> <li>In the spring of your 3rd year, attend an information Session for <b>BIO400Y5</b> Internship course and <b>BIO481Y5</b> research thesis course.</li> </ul>	<p>Ensure you have 8.5 BIO credits and at least 2.0 credits at the 300/400 level. Speak to the <b>Biology Undergraduate Advisor</b> for advice and details.</p> <p>Log on to ACORN and request graduation.</p>
<p>Explore your interests. Why not pass on your passion for science? Be a UTM <b>Let's Talk Science Outreach</b> volunteer.</p> <p>Explore your interest. Apply to become a <b>Wellness Ambassador</b> at the <b>Health &amp; Counselling Centre</b>.</p>	<p>Apply to the Ontario Ministry of Natural Resources Internship Program as a recent graduate. Look at the <b>MNR website</b> for eligibility and application details.</p> <p>Consider applying for a <b>Summer Undergraduate Research Project</b> in the summer following the completion of your degree. Speak to the <b>Biology Undergraduate Advisor</b>.</p>
<p>Establish a professional presence on social media (e.g. LinkedIn).</p> <p>Curious about grad school? Connect with a grad student through the CSE's <b>Grad Connect</b> program to get the inside scoop.</p> <p>Participate in the <b>Community Leadership Development Program</b> as a community leader and gain skills on various competencies while giving back to the community.</p>	<p>Join a professional association. Check out <b>Life Sciences Ontario</b>, or the <b>Canadian Health Libraries Association</b>.</p> <p>Go to the <b>Canadian Undergraduate Conference on Healthcare</b> or <b>Ontario Biology Day</b>.</p>
<p>Get a global experience through our <b>Biology Seminar Series</b>. 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.</p> <p><b>Earn credits overseas!</b> Apply to study for a summer term, or year at one of 170+ universities. Speak to the IEC for details about <b>Course Based Exchange</b>, funding and travel safety.</p>	<p>Engage in programs like <b>ISTEP</b> and <b>THRIVE</b> to support your transition out of the University!</p>
<p>Attend CC workshops to learn the basics of creating a resume and cover letter, preparing for an interview, and creating a strong LinkedIn profile. To register, visit the UTM Events page on <b>CLNx</b>. You would also find exciting networking opportunities to connect with employers, industry professionals and alumni.</p> <p>Thinking about <b>BIO481Y5</b> Research Project? Secure your supervisor well ahead of course enrollment.</p>	<p>Attend the CC workshop, <b>Now That I'm Graduating What's Next</b> to learn how to develop your job search plan.</p> <p>Ready for employment? Schedule an <b>Employment Strategist Appointment</b> to review your documents and practice your skills. If you are still unsure about the next steps in your career journey, schedule a <b>Career Counsellor Appointment</b> to gain support exploring career options and establishing a career plan.</p>

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Visit [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) for the online version and links.

# BIOLOGY FOR HEALTH SCIENCES

## FUTURE STUDENTS

### 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 literacy writing.

**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.

### 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 listing of clubs on campus visit the **Student Group and Societies Directory**

### 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)**
- **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)**

### Department of Biology

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[www.utm.utoronto.ca/biology](http://www.utm.utoronto.ca/biology)

### 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](http://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

Interested in the design of the human body? Learn the fundamentals of human anatomy and physiology in BIO208H5 and BIO209H5.

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

Innovation Complex, Room 1270  
University of Toronto Mississauga  
3359 Mississauga Rd  
Mississauga ON Canada L5L 1C6

905-828-5400

[www.utm.utoronto.ca/future-students](http://www.utm.utoronto.ca/future-students)

