

# 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 over two dozen active research scientists, more than forty 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. 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)
- Minor Program ERMIN2364 Biology (Science)
- Minor Program ERMIN0840 Biomedical Communications (Science)

### Check out...

Are we a pill popping or plant popping society? In BIO368H5, you will explore the role of plants in human health and medicine. Take a closer look at human reproduction and development! 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; Dietician; Occupational therapist.

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



# BIOLOGY FOR HEALTH SCIENCES

## SPECIALIST 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, 153H5; CHM110H5, 120H5; and MAT134Y5/ 135Y5/ 137Y5.</p> <p>Choose a program of study (Subject POST) once you complete 4.0 credits. Use the <b>Degree Explorer Planner</b> and the <b>Academic Calendar</b> to plan your degree.</p> <p>Start strong and get informed with <b>utmONE</b> and <b>LAUNCH</b> through the Office of Student Transition. Join a <b>RGASC Peer Facilitated Study Group</b>.</p>	<p>Enrol in courses BIO202H5, 206H5, 207H5, 210Y5, 304H5, 310H5, 380H5; and STA215H5/PSY201H5.</p> <p>Work in a foreign lab through the <b>iROP</b> program. Speak to the <b>IEC Global Mobility Coordinator</b> to learn more. Prefer staying local? Apply for <b>ROP</b> courses BIO299Y and BIO399Y. Visit the EEO website for <b>ROP Course Prerequisites</b>. Attend the RGASC's <b>P.A.R.T.</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 Experience Fair</b> through the Career Centre (CC) to learn about on- and off-campus opportunities.</p>	<p>Use the <b>Career Learning Network (CLN)</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>, or the Biology department's <b>Walk with your Professor</b>.</p> <p>Visit the UTM Library <b>Reference Desk</b>.</p>	<p>Do you have a professor you really like or 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 Office (EEO).</p>
BUILD A GLOBAL MINDSET	<p>Attend events held by the <b>International Education Centre (IEC)</b> to explore different cultures through food, music, and sport or through sight-seeing around the GTA.</p>	<p>Embark on a <b>UTM Abroad Co-Curricular Experience</b> to Peru in our <b>BIO210Y5</b> class through the IEC. Travel with a faculty member and work alongside local partners conducting research into health and hygiene.</p> <p>Prefer traveling in Canada? Check out the IEC's <b>UTM Across Canada program</b>.</p>
PLAN FOR YOUR FUTURE	<p>Attend the <b>Program Selection &amp; Career Options</b> workshop offered by the Office of the Registrar and the CC.</p> <p>Check out <b>Careers by Major</b> at the CC to see potential career options.</p>	<p>Explore careers through the CC's <b>Extern Job Shadowing Program</b>. Ask the <b>Biology Undergraduate Assistant</b> about the <b>BioPath: Professional Development Program</b>.</p> <p>Considering <b>further education</b>? Attend the CC's <b>Graduate and Professional Schools Fair</b>. Talk to professors – they are potential mentors and references for further education.</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>Attain 1.0 credits from one of the following categories: Cell, Molecular and Biotechnology Stream; Neuroscience Stream; or the Genes and Behaviour Stream. View the <b>Academic Calendar</b>.</p> <p>Throughout your undergraduate degree:</p> <ul style="list-style-type: none"> <li>use the <b>Degree Explorer</b> to ensure you complete your degree and program requirements.</li> <li>see the <b>Office of the Registrar</b> about degree requirements and the <b>Biology Undergraduate Advisor</b> about program requirements.</li> </ul>	<p>Attain 1.0 additional BIO credits. Ensure you have at least 5.0 credits at the 300/400 level, of which 1.0 must be at the 400 level.</p> <p>Conduct a research project under the supervision of a faculty member through BIO481Y5. 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>Apply to the Ontario Ministry of Natural Resources Internship Program as a recent graduate. Look at the <b>MNRF website</b> for eligibility and application details.</p> <p>Gain research skills by working one-on-one with graduate students and a professor through BIO481Y5. Speak to the <b>Biology Undergraduate Advisor</b>.</p>
<p>Establish a professional presence on social media (e.g. LinkedIn).</p>	<p>Join a professional association. Check out <b>Life Sciences Ontario</b>, the <b>Canadian Health Libraries Association</b> or the <b>University of Toronto International Health Program</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. Feel free to bring your lunch!</p>	<p>Why not work abroad? Read up on worldwide employment trends and industry outlooks through <b>GoInGlobal</b>. Attend the <b>Go Global Expo</b>. See if you are eligible for <b>International Experience Canada</b>.</p>
<p>What's your next step after undergrad?</p> <p>Entering the workforce? Evaluate your career options through a <b>CC Career Counselling appointment</b>. Create a job search strategy — book a <b>CC Employment Strategies appointment</b>.</p> <p>Considering further education? Research application requirements, prepare for admission tests (LSAT, MCAT), and research funding options (OGS, NSERC, CIHR)</p>	<p>Market your skills to employers. Get your <b>resume critiqued</b> at the CC. Attend the CC workshop <b>Now That I'm Graduating What's Next?</b></p> <p>Write a strong application for further education. Attend the CC's <b>Mastering the Personal Statement workshop</b>.</p>

Revised on: 9/12/2017

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

### Services that support you

- AccessAbility Services (AS)
- Career Centre (CC)
- Centre for Student Engagement (CSE)
- Experiential Education Office (EEO)
- Health & Counselling Centre (HCC)
- Indigenous Centre (IC)
- International Education Centre (IEC)
- Office of Student Transition (OST)
- 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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[d.matias@utoronto.ca](mailto:d.matias@utoronto.ca)

[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 BIO210Y5. Students have access to our herbarium which houses about 95,000 specimens of 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

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)

