Molecular Biology is an interdisciplinary science that draws its major themes from biochemistry, cell biology, and genetics. Its emphasis is on the structure, chemistry, and functions of nucleic acids and focuses on the biochemical basis of cellular genetics. As the cornerstone of contemporary biotechnology, molecular biology provides some of the most successful experimental tools in medicine and agriculture. Applications for molecular biology can also be seen in the fields of genetics and microbiology.

Molecular Biology at UTM provides in-depth training in critical analyses of scientific concepts and literature as well as advanced laboratory skills. Subject areas include virology, immunology, cancer biology, plant and animal developmental biology, and biotechnology.

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

Programs of Study (POST)
- Specialist Program ERSPE1237 Molecular Biology (Science)
- Minor Program ERMIN2364 Biology (Science)
- Minor Program ERMIN0840 Biomedical Communications (Science)

Check out...
What is the molecular and genetic basis of cancer building? Examine the role of oncogenes, tumor suppressor genes and cell cycle regulating proteins in the developing of this disease through BIO477HS.

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: Cytotechnologist; Bacteriologist; Microbiologist; Medical geneticist; Biological technician; Toxicologist; Veterinary technician; Zoologist; Informationist; Community health worker; Radiation therapist; Doctor; Dietician; Aquaculture technician.

Workplaces: Manufacturing and processing; Government; Scientific R&D; Conservation authorities; Hospitals and medical centres; Pharmaceutical; Academic medical centres/laboratories; Consulting firms.
MOLeCULAR BIOLOGY
SPECIALIST Program Plan

**1ST YEAR**

- Enrol in courses BIO152H5, 153H5, CHM110H5, 120H5, and MAM134Y5, 135Y5, 137H5. Attain 1.0 credit from the second list of required first year courses in the Academic Calendar.
- Choose a program of study (Subject POSI) once you complete 4.0 credits. Use the Degree Explorer Planner and the Academic Calendar to plan your degree.
- Start strong and get informed with the Academic Calendar from the second list of required first year courses in the 120H5, and MAT134Y5/135Y5/137Y5. Attain 1.0 credit from BIO202H5, 203H5 and 205H5.
- Throughout your undergraduate degree:
  - Use the Degree Explorer to ensure you complete your degree and program requirements.
  - See the Office of the Registrar about degree requirements and the Biology Undergraduate Advisor about program requirements.

**2ND YEAR**

- Enrol in courses BIO206H5, 207H5, CHM242H5, 243H5, STA121H5, plus 1.0 credit from BIO202H5, 203H5, and 205H5.
- Consider applying for the Research Opportunity Program (ROP) course BIO399Y. Visit the EEO website for ROP Course Prerequisites. Attend the RGASC’s P.A.R.T. to enhance your research skills.

**3RD YEAR**

- Consider applying for the Research Opportunity Program (ROP) course BIO399Y. Visit the EEO website for ROP Course Prerequisites. Attend the RGASC’s P.A.R.T. to enhance your research skills.

**4TH OR FINAL YEAR**

- Consider applying for the Research Opportunity Program (ROP) course BIO399Y. Visit the EEO website for ROP Course Prerequisites. Attend the RGASC’s P.A.R.T. to enhance your research skills.

---

**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.

---

**PLAN YOUR ACADEMICS**

**BUILD SKILLS**

**BUILD A NETWORK**

**BUILD A GLOBAL MINDSET**

**PLAN FOR YOUR FUTURE**

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

---

**UPDATE YOUR PLAN YEARLY.**

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

---

Revised on: 9/12/2017

Visit [www.utm.utoronto.ca/program-plans](http://www.utm.utoronto.ca/program-plans) for the online version and links.
Skills developed in Molecular 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:** conduct journal research and utilize logical reasoning to interpret results/data derived from scientific experimentation.

**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

William G. Davis Building, Rm 3056
University of Toronto Mississauga
3359 Mississauga Rd
Mississauga ON Canada L5L 1C6

Undergraduate Advisor: 905-828-3999
d.matias@utoronto.ca
[www.utm.utoronto.ca/biology](http://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](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**

What’s in your genes? Take BIO207H5 to find out about the principles of Mendelian inheritance and modern genetics. Curious about animal physiology? Discover the diversity of structure and function in animals in BIO202H5.

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)