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, 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 ERSPE1237 Molecular Biology (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 BIO477H5.

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; Dietitian; 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
Enroll in courses BIO155H5, 156H5, CHM110H5, 120H5; and MAT132H3, 134H5. Attain 1.0 credit from the second list of required first year courses in the Academic Calendar.

Choose a program of study (Subject POS) 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 an uOttawa course. Build community and gain academic support through LAUNCH. Join a RAGS-Peer Facilitated Study Group.

BUILD NETWORK
Networking simply means talking to people and developing relationships with them. Start by joining the Erindale Biology Society (EBS). Follow them @UottawaEBS. Go to the EBS Meet the Prof Night, or the Biology department’s Walk with your Professor.

Visit the UTM Library Reference Desk.

BUILD A GLOBAL MINDSET
Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through weekly/regular conversations, Language Conversation Circles, debates, and activities to enhance your global and intercultural mindset.

Get a global experience through 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.

2ND YEAR
Enroll in courses BIO206, 207, CHM242, 243, BIO259H5 or STA215H5** plus 1.0 CR from BIO202, 203 & 205

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.

BUILD SKILLS
Use the Co-Curricular Record (CCR). Search for opportunities throughout the first year, 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 Experimental Education Fair.

BUILD A GLOBAL MINDSET
Networking simply means talking to people and developing relationships with them. Start by joining the Erindale Biology Society (EBS). Follow them @UottawaEBS. Go to the EBS Meet the Prof Night, or the Biology department’s Walk with your Professor.

Visit the UTM Library Reference Desk.

GET A GLOBAL EXPERIENCE
Attend events held by the International Education Centre (IEC), whether you are an international or domestic student. Explore your culture and other cultures through weekly/regular conversations, Language Conversation Circles, debates, and activities to enhance your global and intercultural mindset.

Get a global experience through 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.

3RD YEAR

Attend the RGASO’s Program for Accessing Research Training (P.A.R.T.) to enhance your research skills.

Explore your interests. Why not pass on your passion for science? Be a UTM Let’s Talk Science Outreach volunteer.

Apply to become a Wellness Ambassador with the Health & Counselling Centre’s Physio Health team.

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.

Engage in programs like the Global and Intercultural Fluency Training Series (GIFTS) to strengthen and enhance your intercultural skill set, and learn about other cultures while sharing your own!

What’s your next step after undergrad?


Considering further education? Research application requirements, prepare for admission tests (LSAT, MCAT), and research funding options (OGS, NSERC, CIHR).

Market your skills to employers. Get your resume critiqued at the CC. Attend the CC workshop Now That I’m Graduating What’s Next?

Write a strong application for further education. Attend the CC’s Mastering the Personal Statement workshop.

Ready to transition from the classroom to the workplace? Check out the Recent Graduate Opportunities Program (RGOP).

4TH OR FINAL YEAR
Enroll in courses BIO477H5 or BIO419H5 plus 1.0 additional credit from the list of courses detailed in the Academic Calendar.

Gain practical collaborative research experience! Apply for JCB487YS. Speak to the Biology Undergraduate Advisor for further information and similar opportunities.

Log on to ACORN and request graduation.

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.

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

**STA215H5 will no longer be accepted as an appropriate course for this program AFTER 2022-2023 Academic year. Beginning 2023-2024 Academic year all students will be required to complete BIO259H5 as the statistics course for this program.

Visit 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.

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 listing of clubs on campus visit www.utm.utoronto.ca/clubs.

Department of Biology

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Undergraduate Advisor: 905-828-3999
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. 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