

# CHEMISTRY (HBSc)

*Department of Chemical & Physical Sciences*

**Chemistry** plays a vital and well-integrated role in many areas of scientific discovery, including the development of new drugs, materials and diagnostics. Advancements made in the field of chemistry have brought improvements to our quality of life, and will help us to control the impact we are making on our environment in order to form the basis for a strong economy. Chemistry plays a major role in solving global issues such as combating disease, feeding our growing population and providing clean energy.

Chemistry at UTM provides preparation for work in areas such as medicine, pharmaceutical and biotechnology research, materials production and quality assurance.

## 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)

- Specialist Program ERSPE1995 Biological Chemistry (Science)
- Specialist Program ERSPE1376 Chemistry (Science)
- Major Program ERMAJ1376 Chemistry (Science)
- Minor Program ERMIN1376 Chemistry (Science)

### Check out...

Curious about forensics? Learn how to analyze physical evidence — drugs and alcohol, gunshot residue, explosives and paint analysis — through FSC311H5. Interested in science education? Consider ER1398HS, Teaching Opportunities in Sciences.

### 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:** Food scientist; Microbrewery technologist; Hazardous waste management technologist; Quality controller; Pulping and bleaching manager; Biochemistry technologist; Medical lab technologist; Water purification chemist; Government affairs specialist; Forensic laboratory analyst.

**Workplaces:** Cosmetics and fragrance production; Pulp and paper; Pharmaceutical; Government; Medical organizations; Food and beverage production; Plastic manufacturing; Scientific R&D.



# CHEMISTRY

## 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	3 <sup>RD</sup> YEAR	4 <sup>TH</sup> OR FINAL YEAR
PLAN YOUR ACADEMICS*	<p>Enrol in courses 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 CHM211H5, 231H5, 242H5, 243H5 and JCP221H5.</p> <p>Consider applying for <b>Research Opportunity Program (ROP)</b> courses CHM299Y5 or CHM399Y5. Visit the EEO website for <b>ROP Course Prerequisites</b>. Attend the RGASC's <b>Program for Accessing Research Training (P.A.R.T.)</b> to enhance your research skills.</p>	<p>Attain 1.0 credits from (CHM372H5, 373H5)/ (CHM394H5, 395H5)/ (CHM396H5, 397H5) as well as 2.5 additional 300/400-level CHM/JCP credits, at least 1.5 of which must be lecture courses.</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> and the <b>CPS Academic Counsellor</b>.</li> </ul>	<p>What is <b>Experiential Education</b>? It means learn by doing! Speak to the <b>CPS Academic Counsellor</b> about opportunities such as JCB487Y5 (Advanced Interdisciplinary Research Laboratory) and CHM489Y5 (Introduction to Research in Chemistry).</p> <p>Log on to ACORN and request graduation.</p>
BUILD SKILLS	<p>Use the <b>Co-Curricular Record (CCR)</b>. Search for opportunities beyond the classroom, and keep track of your accomplishments.</p> <p>Attend the <b>Get Experience Fair</b> through the 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.</p> <p>Explore your interests! Do you want to make UTM eco-friendly? Become a <b>Green Ambassador</b> with the Environmental Affairs Office.</p>	<p>Work on-campus through the <b>Work-Study program</b>. View position descriptions on CLN.</p>	<p>Skills are transferrable to any job regardless of where you develop them. Need to strengthen your leadership skills? Consider being a UTM <b>Let's Talk Science Outreach</b> volunteer.</p>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the <b>Erindale Chemical and Physical Sciences Society (ECPS)</b>. Make sure to go to the <b>ECPS's Meet the Profs Night</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>	<p>Establish a professional presence on social media (e.g. LinkedIn).</p> <p>Attend the <b>E.A. Robinson Science Education Lecture</b> through the CPS department.</p>	<p>Join a professional association. Check out the <b>Chemical Institute of Canada</b> and the <b>Association of Professional Chemists of Ontario</b>.</p> <p>Go to the <b>Southern Ontario Undergraduate Student Chemistry Conference</b> or the <b>Canadian Society for Chemistry Conference and Exhibition</b>.</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> through the IEC. Take advantage of this opportunity to travel with a faculty member and learn about a topic of interest in a unique location.</p> <p>Prefer traveling in Canada? Check out the IEC's <b>UTM Across Canada</b> program.</p>	<p>Earn credits overseas! Study for a summer, term or year at one of 120 universities. The CPS department has identified 9 partners which are most relevant to our students. Speak to the <b>IEC</b> for details about <b>Course Based Exchange</b> and funding.</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>
PLAN FOR YOUR FUTURE	<p>Attend the <b>Program Selection &amp; Career Options</b> workshop offered by the Office of the Registrar and the Career Centre (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>.</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.</p>	<p>What's your next step after undergrad?</p> <p>Entering the workforce? Evaluate your career options through a CC <b>Career Counselling appointment</b>. Create a job search strategy - book a CC <b>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>

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

# CHEMISTRY

## Skills developed in Chemistry

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:

**Research:** conduct journal research and utilize logical reasoning to interpret results/data derived from scientific experimentation.

**Technical:** experience with state-of-the-art laboratory technology and instruments; ability to use computer programs to manipulate and display data; and comply with quality control procedures while conducting experiments.

**Quantitative:** analyze data for trends and apply statistical packages to data to test for significance.

**Communication:** organize research ideas and information into comprehensive reports; and interact professionally with a multidisciplinary team of researchers, technicians, students and professors.

## Get involved

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

- Erindale Chemical and Physical Sciences Society (ECPS)
- 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 Chemical & Physical Sciences

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

## 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. Your admission average is calculated using English plus your next best five courses. The Grade 12 prerequisites for Chemistry are Advanced Functions, Chemistry and Physics. The approximate average required for admission is mid- to high-70s. More information is available at [utm.utoronto.ca/viewbook](http://utm.utoronto.ca/viewbook).

**NOTE:** During the application process, applicants will select the Chemical & Physical 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

Support is available to first-year chemistry students through tutorial classes, office hours, Facilitated Study Groups and a 24/7 system of Virtual Office Hours. In addition, all of our students have access to new, state-of-the-art teaching laboratories.

Upper-year students can become involved in cutting-edge research projects in our research labs. We recently launched the Centre for Medicinal Chemistry, an interdisciplinary centre for the development of new drugs. It will become a research hub of leading scientists dedicated to developing innovative approaches in the fight against cancer and other diseases.

### 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)

