

# EARTH SCIENCE (HBSc)

*Department of Chemical & Physical Sciences*

**Earth Science** is the discipline that studies our planet and all of its natural environments. Our program offers training in both critical streams of Earth Science: Resources & Tectonics and Earth, and Climate & Life. Through our program, students become well equipped to understand the causes and consequences of radical shifts already underway in Earth's climate system. Addressing modern climate change requires an understanding of the underlying physics and chemistry of the earth-climate system, as well as knowledge of how climate and life have co-evolved in the past. Our ancient fossil heritage archives the response of life to global perturbations providing rigorous data with which our students can test emerging climate models.

## 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)

- Specialist Program Environmental Geosciences ERSPE1253
- Specialist Program ERSPE1465 Earth Science (Science)
- Major Program ERMAJ1465 Earth Science (Science)
- Minor Program ERMIN1465 Earth Science (Science)

### Check out...

Where in the world are minerals? Learn exploration methods and mining practices in ERS419H5. Interpret ancient geological environments! Enrol in ERS325H5, a Field Camp held on the north shore of Lake Huron.

### 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:** Mine geologist; Surveyor; Geological technician; Prospector; Technical sales representative; Minerals processing technician; Exploration geologist; Compliance officer; Survey technician; Hydrologist; Environmental technician; Cartographer; GIS Specialist; Meteorologist; Paleontologist.

**Workplaces:** Mineral and hydrocarbon sector; Environmental sector; Government; Financial institutions; Academic institutions; National/provincial parks.



# EARTH SCIENCE

## 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 ENV100Y5/ (ERS101H5,111H5); MAT134Y5/ 135Y5/ 137Y5 and (CHM110H5,120H5)/ (PHY136H5,137H5)/ (146H5,147H5).</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 Centre for Student Engagement (CSE). Join a <b>RGASC Peer Facilitated Study Group</b>.</p>	<p>Enrol in courses ERS201H5, 202H5, 203H5 and 0.5 credits from ERS211H5/ 225H5/ GGR214H5/ 217H5/ 227H5/ 272H5/ 276H5/ 278H5.</p> <p>Consider applying for <b>Research Opportunity Program (ROP)</b> courses ERS299Y, ERS399Y and ERS499Y. Visit the EEU 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 classroom, 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.</p> <p>Work on-campus through the <b>Work-Study program</b>. View position descriptions on the CLN.</p>
BUILD A NETWORK	<p>Networking simply means talking to people and developing relationships with them. Start by joining the <b>J. Tuzo Wilson Club</b> and follow the Facebook group <b>UTM Earth Science</b>. Go to the Erindale Chemical &amp; Physical Sciences Society's <b>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 Unit (EEU).</p>
BUILD A GLOBAL MINDSET	<p>Attend events held by the <b>International Education Centre (IEC)</b> whether you are an international or domestic student. Explore different cultures through food, music, and sport or through sight-seeing around the GTA.</p> <p>Start with the <b>International Education Week</b> events and learn about the diversity, culture, and international opportunities on campus!</p>	<p>Embark on a <b>UTM Abroad Glocal Impact Project</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>Interested in deepening your global perspective? Register for the <b>Global Citizenship Certificate</b> offered by the IEC.</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>.</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>

\*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 2.5 credits from courses ERS301H5/302H5/ 311H5/ 312H5/ 315H5/ 325H5/ 381H5/ 401H5/ 402H5/ 411H5/ 412H5/ 425H5/ JGE378H5/CPS400Y5.</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! Enrol in a course with hands on experience such as ERS419H5 which includes weekly field trips. Speak to the <b>CPS Academic Counsellor</b> to learn more.</p> <p>Log on to ACORN and request graduation.</p>
<p>Interpret ancient geological environments in the field. ERS325 is a Field Camp held on the north shore of Lake Huron in the summer. Speak to the <b>CPS Academic Counsellor</b> to learn more.</p>	<p>Skills are transferrable to any job regardless of where you develop them. Need to strengthen your collaboration skills? Consider a role as a <b>Green Ambassador</b> with the Environmental Affairs Office.</p>
<p>Establish a professional presence on social media (e.g., LinkedIn).</p> <p>Attend a lecture presented by the <b>E.A. Robinson Science Education Lectureship</b> through the CPS department.</p> <p>Thinking about life after UTM? Connect with a UTM alumnus through the CSE's <b>Alumni Mentorship Program!</b></p>	<p>Join a professional association. Check out the <b>Geological Association of Canada</b> or the <b>Toronto Geological Discussion Group</b>.</p> <p>Go to the <b>Prospectors &amp; Developers Association of Canada (PDAC) Convention</b>.</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>
<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, GMAT), and research funding options (OGS, NSERC).</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>

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# EARTH SCIENCE

## Skills developed in Earth Science

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:** read, critically evaluate and produce professional papers and geologic maps.

**Investigative:** knowledge of the origin, composition, and evolution of the Earth, and how the Earth system responds to internal and external forces, as well as understand spatial data and temporal geologic change.

**Technical:** identify, describe and classify earth materials and structures, as well as analyze quantitative geologic data.

**Critical thinking & problem-solving:** recognize bias and incompleteness in the geologic record; apply physics, chemistry, biology, statistics and mathematics to solve geologic problems; and apply geoscience knowledge to address problems affecting society.

## Get involved

Check out the 100+ student organizations on campus. Here are a few:

- J. Tuzo Wilson Club
- 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

- Accessibility Services (AS)
- Career Centre (CC)
- Centre for Student Engagement (CSE)
- Experiential Education Unit (EEU)
- 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 Science

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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. The admission average is calculated with English plus the next best five courses. The Grade 12 prerequisites for this program 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

As citizens of the world, we are, and will increasingly be, required to make decisions about our relation with Earth: we need to be sufficiently informed to contribute to the ongoing debates. In ERS103H5 you'll get the chance to focus on our relationship with Earth: how she supports us, how she affects us, and how we affect her. Curious about the materials that form the Earth? Get excited about ERS201H5. The course includes an optional field trip to the Algonquin-Bancroft area of eastern Ontario.

Our students have access to new, state-of-the-art teaching laboratories and are involved in cutting-edge research projects in our research labs.

### 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)

