

# CHEMICAL ENGINEERING TECHNOLOGY - LAB AND PROCESS CONTROL (CHLP)

## Embark on a journey of pioneering science and innovation, where global opportunities await

Immerse yourself in a world of discovery in the only program of its kind in Ontario that emphasizes mineral processing, pyrometallurgy, and water and wastewater treatment industries. At our cutting-edge facility, you'll receive comprehensive training beyond textbooks. You'll learn to champion chemistry by diving into analytical and organic chemistry, process control, instrumental analysis, mineral processing, pyrometallurgy, environmental sampling, and water/wastewater treatment. You'll also learn to uphold rigorous quality standards and safety protocols, shaping the future of laboratory research and production facilities.

Rise to supervisory or managerial roles, mastering technical documentation, quality control, and troubleshooting. Our program will equip you with the technical expertise needed to excel in the field and the essential communication, teamwork, leadership, and technology skills crucial for success in the laboratory and engineering industries.

Grads are prepared to work in mineral processing, geochemistry, nuclear, petroleum, pharmaceutical, manufacturing, oil and gas, and food and beverage industries. Operate at the crossroads of discovery and progress, setting up experiments, analyzing data, and maintaining cutting-edge laboratory equipment.

## Program highlights

- Two paid co-ops allow you to enhance your real-world skills and connections in the industry
- Common first and second year with Cambrian's Chemical Engineering Technician program
- Quality control practices are embedded throughout the program, ensuring you're well-prepared for roles in chemical engineering and related fields
- Gain practical experience through group work and independent studies, learning industry-standard practices in areas such as physical, analytical, organic, and pyro-chemistry
- Grads are eligible to join the Ontario Association of Certified Engineering Technicians and Technologists (OACETT) and the Canadian Technical Employment Network (CTEN)
- Unique program in Ontario that focuses on mineral processing, pyrometallurgy, and water/wastewater

## Program of study for 2025-26 Academic Year

Students are required to successfully complete an online Lab Safety course (in Moodle) when starting their program at Cambrian. This course must be completed prior to entering the labs (as identified in the table below) in the Schools of Skills Training, Engineering Technology and Environmental Studies.

Semester 1		Credits
MTH 1050	Algebra I	3
QUA 1002	Quality Assurance and Quality Control	3

CHM 1160	Occupational Health and Safety	3
CHM 1161	Introduction to Sampling Techniques	3
CHM 1162	Chemistry I	3
CHM 1163	Chemistry I Lab	3
ENG 1002	College Communications	3

**Credits** 21

Semester 2		
MTH 1250	Algebra II	3
CHM 1280	Physical Chemistry	3
CHM 1281	Physical Chemistry Lab	3
CHM 1282	Chemistry II	3
CHM 1283	Chemistry II Lab	3
CHM 1284	QA QC Data Analysis	3
ENG 1754	Technical Communication	3
One General Education Course <sup>2</sup>		3

**Credits** 24

Semester 3		
CHM 1109	Mineral Processing <sup>1</sup>	4
CHM 1300	Analytical Chemistry I	3
CHM 1301	Analytical Chemistry I Lab	3
CHM 1302	Instrumental Analysis I	3
CHM 1303	Instrumental Analysis I Lab	3
WTR 2300	Water Treatment <sup>1</sup>	3
One General Education Course <sup>2</sup>		3

**Credits** 22

Semester 4		
CHM 1420	Organic Chemistry	3
CHM 1421	Organic Chemistry Lab	3
CHM 1422	Analytical Chemistry II	3
CHM 1423	Analytical Chemistry II Lab	3
CHM 1424	Instrumental Analysis II	3
CHM 1425	Instrumental Analysis II Lab	3
CHM 1426	Pyrochemistry	4
One General Education Course <sup>2</sup>		3

**Credits** 25

Semester 5		
CHM 2500	Co-op Work Placement and Report	12

**Credits** 12

Semester 6		
CHM 3653	Inorganic Chemistry <sup>1</sup>	3
CHM 1600	Unit Operations and Calculations	4
CHM 1601	Industrial Organic Chemistry	3
CHM 1602	Industrial Organic Chemistry Lab	3
TEC 3603	Capstone Project	3
INT 1500	Lab and Process Automation	4
MTH 2332	Applied Calculus	3

**Credits** 23

**Semester 7**

CHM 3700	Co-op Work Placement and Report II	12
<b>Credits</b>		<b>12</b>
<b>Total Credits</b>		<b>139</b>

<sup>1</sup> Course with Lab Component

<sup>2</sup> For more information regarding General Education courses, click here (<https://cambriancollege.ca/general-electives/>).

**Admission requirements**

For graduates of the new curriculum (OSS): Ontario Secondary School Diploma (30 credits) or equivalent or mature student status, including:

- Any grade 12 English (C) or (U)
- Any grade 12 mathematics (C) or (U) (MCT4C) is highly recommended)
- Any grade 11 chemistry (U) or grade 12 chemistry (C) or (U)

**Additional admission requirements****Recommendations:**

- Any grade 12 physics (C) or (U)

**Program Delivery****2025-2026****Fall term start**

SEMESTER 1: Fall 2025

SEMESTER 2: Winter 2026

SEMESTER 3: Fall 2026

SEMESTER 4: Winter 2027

SEMESTER 5: Spring 2027

SEMESTER 6: Fall 2027

SEMESTER 7: Winter 2028

**Winter term start**

SEMESTER 1: Winter 2026

SEMESTER 2: Spring 2026

SEMESTER 3: Fall 2026

SEMESTER 4: Winter 2027

SEMESTER 5: Spring 2027

SEMESTER 6: Fall 2027

SEMESTER 7: Winter 2028

**Specific program pathways****College or university degree opportunities**

There are opportunities for graduates to pursue further educational or professional qualifications, and degree completion. Refer to Cambrian's college and university agreement (<https://cambriancollege.ca/supports-services/articulation-agreements/universities-in-canada/>) details for further information.

**Employment opportunities**

As a Chemical Engineering Technologist, your expertise will span diverse sectors, including mining operations, where your insights refine extraction processes; environmental science, where your vigilance safeguards our planet's delicate balance; forensic investigations, where your precision unravels mysteries; food and beverage production, where your touch enhances flavors; pharmaceuticals, where your formulations heal; oil and

gas, where your ingenuity fuels progress; and nuclear technology, where your calculations harness boundless energy.

As you ascend to supervisory or managerial roles, you become the architect of the future of laboratory research and production facilities. You'll operate at the intersection of science and innovation, performing tasks that include quality control, environmental monitoring, testing chemicals, improving chemical processes, calibrating and maintain lab equipment, and more.

Graduates are prepared for employment opportunities as:

- Lab Technologist in Mineral Processing, Geochemistry, Nuclear, Petroleum, Pharmaceutical, and Food Industries
- Water and Wastewater Analyst/Operator
- Researcher
- Chemical Process Control Operator

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**INTERNATIONAL ADMISSIONS**

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