Seneca POLYTECHNIC

2024-2025

CHEMICAL LABORATORY TECHNICIAN (CLT)

About the Program

In this two-year diploma program, you will benefit from practical training and learn the essential principles and techniques used in the biochemical sciences. You will gain hands-on experience needed to perform experiments and determinations with the precision required in a broad range of industries. That means getting hands-on training in the proper care and use of laboratory apparatus for wet and instrumental methods.

The program covers a broad range of topics, including organic and analytical chemistry, biochemistry, industrial microbiology, as well as pharmaceutical and instrumental methods.

Common First Semester

This program shares a common first year with the three-year Biotechnology Advanced (http://www.senecapolytechnic.ca/programs/fulltime/BTA.html?_gl=1*a0qi7j*_ga*MTA5Mjk2MjY2MS4xNzAxNDU5NjQz*_ga_NKW0CZJEK5*
Chemical Engineering Technology (http://www.senecapolytechnic.ca/programs/fulltime/CHY.html?_gl=1*1greenn*_ga*MTA5Mjk2MjY2MS4xNzAxNDU5NjQz*_ga_NKW0CZJEK5*MTcwMiMyNDQzNi4LjEuMTcwMiMyNTkyNy40OS4wLjA.&_ga=2.223100569.329
Chemical Laboratory Technology - Pharmaceutical (http://www.senecapolytechnic.ca/programs/fulltime/CLP.html?_gl=1*xd1t43*_ga*MTA5Mjk2MjY2MS4xNzAxNDU5NjQz*_ga_NKW0CZJEK5
You can transfer to these programs after the second semester or upon graduation.

Credential Awarded

Ontario College Diploma

Duration

4 Semesters (2 Years)

Starts

January, May, September

Program and Course Delivery

This program is offered in Seneca's hybrid delivery format with some courses available in Seneca's flexible delivery format. Some coursework is online and some must be completed in person. Students will need to come on campus to complete in-person learning requirements. For courses offered in the flexible delivery format, professors use innovative learning spaces and technology to teach students in a classroom or lab and broadcast in real time to students attending remotely. In flexible courses, students have the choice of coming on campus or learning online.

Skills

Throughout this program you will develop the following skills:

- Perform assays and determinations with speed, precision and accuracy
- Care of laboratory apparatus for wet and instrumental methods
- Physical, chemical and microbiological analysis
- Conduct basic manual analysis
- Prepare organic and inorganic compounds
- Perform instrumental chemical analysis and report results

Your Career

Graduates of the program can explore the following career options:

- Laboratory technician
- Quality control technician
- Analytical chemistry technician

Affiliations/Associations

- Canadian Society of Microbiologists
- Chemical Institute of Canada (CIC)

Program of Study

Course Code	Course Name	Weekly Hours
Semester 1		
BIO173	Biology	5
CHM173	Chemistry	5
COM101	Communicating Across Contexts	3
or COM111	Communicating Across Contexts (Enriched)	028.32910
MTH173	Mathematics	5-6
or MTH171	Mathematics	
SSA001	Science Survival	1
Semester 2		
ACA273	Advanced Computer Applications	3198.32910
BIO273	Biology	5
CHM273	Chemistry	5
MTH273	Mathematics	5
plus: General Education Course (1)		3
Semester 3		
AIC372	Applied Inorganic Chemistry	3
CHO372	Chemistry - Organic	6
MBG372	Microbiology	5
PHY453	Physics	3
SES391	Effective Technical Writing	3
plus: General Education Course (1)		3
Semester 4		
BIC472	Biochemistry	6
IMB472	Industrial Microbiology	5
or IPM472	Introduction to Pharmaceutical Manufacturing	
IOC472	Analytical Chemistry	5
ITM472	Instrumental Methods	5
plus: General Education Course (1)		3

Note: The following course will not fulfil a General Education requirement: NAT280 The Body: Bits and Bites.

Program Learning Outcomes

This Seneca program has been validated by the Credential Validation Service as an Ontario College Credential as required by the Ministry of Colleges and Universities.

As a graduate, you will be prepared to reliably demonstrate the ability to:

- Perform routine tasks and assigned procedures to support the purification, analysis and synthesis of chemical compounds and samples.
- Use prescribed laboratory procedures to conduct basic manual and instrumental quantitative analysis and report results.
- Operate and troubleshoot chemical analysis instruments and equipment to assure accurate results.
- Perform quality assurance and quality control procedures, including basic statistical analyses, in accordance with international and industry standards and government regulations.
- Complete chemical laboratory tasks and projects using computer and information technologies.
- Implement health and safety practices to ensure a safe laboratory environment for oneself and others.
- Contribute to the efficient and ethical use and promotion of chemical laboratory resources through established sustainability practices.
- Interpret and produce technical documents to communicate chemical laboratory data and results.
- Collaborate with others to contribute to effective working relationships and teamwork in chemical laboratory environments.
- Develop strategies for ongoing professional development to enhance competence as a chemical laboratory technician.

Admission Requirements

- Ontario Secondary School Diploma (OSSD), or equivalent, or a mature applicant (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/mature-applicants.html)
- English: Grade 12 C or U, or equivalent course
- Mathematics: Grade 12 C or U, or Grade 11 Functions (MCR3U), or equivalent course
- Biology: Grade 11 C or U, or equivalent course
- Chemistry: Grade 11 U or Grade 12 C or U, or equivalent course

Canadian citizens and permanent residents may satisfy the English and/or mathematics requirements for this program through successful Seneca pre-admission testing. (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/mature-applicants.html)

Recommended upgrading for applicants who do not meet academic subject requirements (https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/upgrading-options.html).

International Student Information

International admissions requirements vary by program and in addition to English requirements (https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/english-requirements.html), programs may require credits in mathematics, biology, and chemistry at a level equivalent to Ontario's curriculum, or a postsecondary degree or diploma, equivalent to an Ontario university or college. Program-specific pre-requisite courses and credentials are listed with the admission requirements on each program page. To review the academic requirements please visit: Academic Requirements - Seneca, Toronto, Canada (senecapolytechnic.ca) (https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/academic-requirements.html).

Pathways

As a leader in academic pathways, we offer a range of options that will allow you to take your credential further in another Seneca program or a program at a partner institution.

To learn more about your eligibility, visit the Academic Pathways (https://www.senecapolytechnic.ca/pathways.html) web page.

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