Seneca POLYTECHNIC

2025-2026

CHEMICAL LABORATORY TECHNOLOGY – PHARMACEUTICAL (CLP)

About the Program

In this hands-on three-year advanced diploma program, you will focus on pharmaceutical analysis, product formulation and manufacturing, chemical instrumentation, biochemistry, microbiology and toxicology. You will receive the experience needed to perform experiments, manufacture tablets, ointments and creams with the precision required to meet pharmaceutical standards.

Your academic progress will be monitored during the first two semesters. Since the number of seats in the third semester is limited if you who fail to maintain a semester GPA of at least 2.5 during their first year and subsequent semesters will be transferred to an alternate program within the School of Biological Sciences and Applied Chemistry.

Common First Semester

Students enrolled in the following programs may transfer to Chemistry Laboratory Technician before second year: Biotechnology —Advanced (https://www.senecapolytechnic.ca/programs/fulltime/BTA.html), Chemical Laboratory Technician, (https://www.senecapolytechnic.ca/programs/fulltime/CLT.html)Chemical Engineering Technology (https://www.senecapolytechnic.ca/programs/fulltime/CHY.html), and Chemical Laboratory Technology — Pharmaceutical (https://www.senecapolytechnic.ca/programs/fulltime/CLP.html).

Credential Awarded

Ontario College Advanced Diploma

Duration

6 Semesters (3 Years)

Starts

January, 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 drug assays
- Manufacture tablets, ointments and creams
- Product formulation
- Statistical calculations and analysis
- Prepare organic and inorganic compounds using standard procedures
- Perform instrumental chemical analysis
- Maintain and test laboratory equipment to meet manufacture's requirements

Work Experience

Optional Work Term

This program offers the option to complete a work term, providing valuable hands-on experience in your field of study.

Students who select the work term stream will have the opportunity to participate in a work term(s) if eligibility requirements are maintained. Students will have the flexibility to transfer to the non-work term stream at any time. The work term(s) is similar in length to an academic semester and is typically a full-time position that may be paid or unpaid. The work term job search is student-driven and participation in the work term stream does not guarantee that a work position will be secured. However, students will receive guidance and support through in-class career workshops and one-on-one coaching to help prepare for the work term.

Review eligibility requirements for work-integrated learning (https://www.senecapolytechnic.ca/employers/seneca-works/work-integrated-learning/eligibility.html)

tudents interested in completing a work term should apply to the **Chemical Laboratory Technology – Pharmaceutical (Work Term) (CLPC)** program.

Your Career

Graduates of the program can explore the following career options:

- Pharmaceutical technologist
- Quality control technologist
- Production technologist

Affiliations/Associations

- Canadian Society of Microbiologists (CSM)
- Chemical Institute of Canada (CIC) through the Canadian Society for Chemical Technology (CSCT)
- Pharmaceutical Sciences Group (PSG)

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)	
MTH173	Mathematics	5-6
or MTH171	Mathematics	
SSA001	Science Survival	1
Semester 2		
ACA273	Advanced Computer Applications	3

BIO273	Biology	5
CHM273	Chemistry	5
MTH273	Mathematics	5
plus: General Education Course (1) [1]		3
Semester 3		
CHO333	Chemistry - Organic	6
CMI333	Chemical Instrumentation	5
PHA333	Pharmaceutical Analysis	6
SES391	Effective Technical Writing	3
TAC333	Techniques in Analytical Chemistry	5
WTP100	Work Term Preparation [*]	1
Work-Integrated Learning Term 1		
CLP441	Chemical Laboratory Technology, Work Term [*]	30
Semester 4		
BIC433	Biochemistry	6
CHO433	Chemistry - Organic	6
MBG353	Microbiology	5
STA453	Statistics	3
plus: General Education Course (1) [1]		3
Work-Integrated Learning Term 2		
CLP442	Chemical Laboratory Technology, Work Term II [*]	30
Semester 5		
BPH633	Biopharmaceuticals	3
PHC533	Pharmaceutical Calculations	6
PHM633	Pharmaceutical Microbiology	5
PPF633	Pharmaceutical Product Formulations	5
PYM633	Pharmaceutical Manufacturing	5
Semester 6		
CMI533	Chemical Instrumentation	5
PAC633	Organic Chemistry	6
PHA533	Pharmaceutical Analysis - Advanced	5
PHT533	Pharmacology and Applied Toxicology	6
PHY453	Physics	3
plus: General Education Course (1) [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:

- Research, determine and perform procedures related to the purification, analysis and synthesis of chemical compounds and samples.
- Perform, coordinate and implement laboratory procedures to conduct quantitative and qualitative analyses and tests.
- Select, test, calibrate, troubleshoot and evaluate chemical analysis instruments and equipment to assure accurate results.
- Implement, coordinate and evaluate quality assurance and quality control procedures, including statistical analysis, in accordance with international and industry standards and government regulations.
- Complete, monitor and manage chemical laboratory tasks and projects using computer and information technologies.
- Participate in health and safety practices and initiatives in the chemical laboratory to ensure a safe environment for oneself and others.
- Promote the efficient, sustainable and ethical use of chemical laboratory resources through the application and analysis of sustainability practices.
- Communicate laboratory data, results, analysis and recommendations through the preparation, interpretation and presentation of technical reports.
- Collaborate with others and work in chemical laboratory teams to complete laboratory tasks and projects.
- Develop strategies for ongoing professional development to enhance competence as a chemical laboratory technologist.

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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