

CIVIL ENGINEERING TECHNICIAN (CVL)

About the Program

In this two-year diploma program, you will learn the fundamentals to prepare for a career as a civil engineering technician. Your studies will include computer drafting, municipal and building practices, material testing and field surveying. At the completion of your first year, you will have the option to transfer to the Civil Engineering Technology (<https://www.senecapolytechnic.ca/programs/fulltime/CVT.html>) program (requires a grade of C or better in Strength of Materials).

The Civil Engineering Technician (CVL) program provides practical, hands-on experiential learning. In providing a real-world experience, indoor and outdoor lab-based subjects will require the use of appropriate industry health & safety equipment and personal protective equipment (PPE). There are also expectations of having to do some heavy lifting of equipment and materials and well as having to navigate outdoor terrain and conditions.

This Program is accredited by Technology Accreditation Canada (TAC).

Laptop Requirement

It is strongly recommended that you have a laptop before the first day of this program. It should include the following technical specifications:

- Windows 10 Operating System
- Intel i7 or equivalent processor
- 16 GB of RAM (32 GB of RAM is recommended)
- 256 GB Solid State Hard Drive (SSD) (512 GB SSD is recommended)
- High-end graphics video card (consider a dedicated video card with at least 2 GB of video memory)
- 13 inch or larger screen
- Three USB 3.0 ports
- Wireless 802.11ac

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:

- Building principles
- Computer-aided drafting
- Materials testing
- Field surveying techniques

Optional Co-op

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

Students who select the co-op stream will have the opportunity to participate in a co-op term(s) if eligibility requirements are maintained. Students will have the flexibility to transfer to the non co-op stream at any time. The co-op term(s) is typically a full-time paid position completed between two academic semesters. The co-op search is student-driven and participation in the co-op 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 co-op term.

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

Your Career

Graduates of the program can explore the following career options:

- Civil engineering technician
- Project co-ordinator
- AutoCAD technician
- Survey technician
- Material tester
- Lab quality control technician
- Construction specialist

Program of Study

Course Code	Course Name	Weekly Hours
Semester 1		
BEA101	CAD Fundamentals	4
COM101	Communicating Across Contexts	3
or COM111	Communicating Across Contexts (Enriched)	
ENS141	Engineering Problems and Statics	4
EVS141	Environmental Science	3
MTA100	Mathematics 100	5
Semester 2		
CRX342	Civil CAD Drafting II	3
IPS255	Interpersonal Skills in the Engineering Workplace	3
MTA002	Mathematics II	4
MTR241	Materials	5
STM241	Strength of Materials	4
SVC001	Surveying I	4
Semester 3		
BIX442	Building Inspection	4
GTQ342	Geotechniques	5
SCP342	Steel and Concrete Building Practice	5
SVC002	Surveying II	4

TEC400	Technical Communications	3
WTP100	Work Term Preparation *	1
plus: General Education Course (1)		3
Work-Integrated Learning Term		
CVL331	Civil Engineering Technician, Co-op *	30
Semester 4		
BRW442	Building Information Modelling with Revit - Wood Construction	4
CTE442	Construction Techniques	4
GIS443	Geographic Information Systems	4
HWT443	Highway Technology	5
MPP442	Municipal Practices	4
plus: General Education Course (1)		3

* Work-Integrated Learning option only

Note: The following course will not fulfil a General Education requirement: NAT260 Environmental Science.

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:

- develop and use strategies to enhance professional growth and ongoing learning in the civil engineering field.
- comply with workplace health and safety practices and procedures in accordance with current legislation and regulations.
- complete duties and assist in monitoring that work is performed in compliance with contractual obligations, applicable laws, standards, bylaws, codes and ethical practices in the civil engineering field.
- carry out sustainable practices* in accordance with contract documents, industry standards and environmental legislative requirements.
- collaborate with the project team and communicate effectively with project stakeholders* to support civil engineering projects*.
- collect, process and interpret technical data to produce written and graphical project-related documents.
- use industry-specific electronic and digital technologies to support civil engineering projects*.
- participate in the design and modelling phase of civil engineering projects* by applying engineering concepts, basic technical mathematics* and principles of science to the review and production of project plans.

- assist in the scheduling, cost estimation and monitoring of the progression of civil engineering projects* by applying principles of construction project management.
- perform quality control* testing and the monitoring of equipment, materials and methods involved in the implementation and completion of civil engineering projects*.
- apply teamwork, leadership and interpersonal skills when working individually or within multidisciplinary teams to complete civil engineering projects¹.

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

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)) (<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.