

# CIVIL/STRUCTURAL TECHNICIAN CERTIFICATE

## Purpose

Graduates of this program will have developed the drafting and 3D Building Information Modeling (BIM) skills that will enable them to work as team members in consulting engineering firms, architectural firms, municipal, provincial or federal offices, as well as in private industry. Graduates will be prepared to work on a wide variety of structures, highway construction and real estate development work.

## Duration

Duration: Ten (10) months comprised of three terms.

Maximum Time for Completion: Three (3) years.

## Learning Outcomes

Upon successful completion of this program, graduates will be able to:

1. Use drawing techniques to complete projects in orthographic projection, sectioning, and dimensioning, auxiliary view and machine detailing.
2. Describe concepts in orthographic projection, sectioning, and dimensioning, auxiliary view and machine detailing.
3. Employ Computer Aided Drafting (CAD) and three dimensional modelling systems skills to produce drawings from data, designs and/or specifications.
4. Demonstrate an understanding of drafting and 3D modeling skills and conventions.
5. Develop drafting, 3D Building Information Modeling (BIM) and related trade skills and knowledge.
6. Utilize critical thinking, team building and interpersonal communication skills.
7. Apply concepts of civil technology and planning to produce drawings and three dimensional models for the development of a civil site.
8. Use structural engineering theories and BIM practices to prepare engineering drawings for three dimensional models of structures, which incorporate reinforced concrete and structural steel.
9. Prepare a comprehensive professional portfolio.
10. Prepare a résumé and letters of application and perform other related job search skills.

## Admission Requirements

- Grade 12 graduation or equivalent
- English Language Proficiency (<https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.vcc.ca%2Fapplying%2Fregistration-services%2Fenglish-language-proficiency-requirements%2F&data=05%7C01%7Cfbarillaro%40vcc.ca>)

%7C78d9b2260f924e72aaa608db66b256c0%7C9d83cfc7633047d5b18d45bafed%7CTWFpbGZsb3d8eyJWljojMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IklhaWV%7C3000%7C%7C%7C&sdata=v714NbbPWIDlhTtCnPcTt%2FFI74%2B7i7oPnr%2BJFRZaltM%3D&reserved=0) at a grade 12 level

- Knowledge of mathematics demonstrated by *one* of the following:
  - Workplace Math 11 or equivalent, *or*
  - VCC Math Assessment with 80% Basic Arithmetic and 60% Basic Algebra

Note:

- Applicants who do not meet the English language requirement may be admitted at the discretion of the Department
- Applicants who have met all the above requirements and have completed high school Drafting 11 and 12 may, with Departmental approval, apply for direct entry into Level 2 of the program.

For assistance with meeting the entrance requirements, please contact Advising Services (<https://www.vcc.ca/applying/registration-services/advising-services/>) to schedule an appointment with an Advisor.

VCC CAD Citation graduates may insert into level 2 of the program.

## Program Requirements

Term One		Credits
DRFT 1010	CAD Drafting Fundamentals	4
DRFT 1011	CAD Drafting Applied	3
DRFT 1012	Office & Construct Site Safety	1
DRFT 1013	Construction Mathematics	1
<b>Credits</b>		<b>9</b>
Term Two		Credits
DRFT 1226	Construction Drawing Reading	1
DRFT 1280	Industrial Site Layout	3
DRFT 1281	Autodesk Civil 3D	2
DRFT 1282	Road Alignment Detailing	2
DRFT 1283	Steel Structures	3
DRFT 1284	Princ for Reinforced Concrete	1
DRFT 1285	Foundation Design Concepts	1
DRFT 1286	Engineering Statics	2
<b>Credits</b>		<b>15</b>
Term Three		Credits
DRFT 1326	Job Search Skills	0.5
DRFT 1327	Revit Structures	2
DRFT 1330	Advanced Road Design	2
DRFT 1331	Civil Utility Services	2
DRFT 1370	Technical Communications	1
DRFT 1380	CAD 3D and Assemblies	2
DRFT 1381	Miscellaneous Steel	1
DRFT 1383	Quantity Take Offs	0.5
DRFT 1384	Concrete Slab on Grade Flr Sys	2
DRFT 1385	Reinforced Concret Struc Comp	3
<b>Credits</b>		<b>16</b>
<b>Total Credits</b>		<b>40</b>

## Evaluation of Student Learning

Students are evaluated by:

- Practical projects
- Exams
- Drawings
- Presentations

## Prior Learning Assessment and Recognition (PLAR)

PLAR is available for select courses. See individual Course Outlines for details.

## Transcript of Achievement

The evaluation of learning outcomes for each student is prepared by the instructor and reported to the Student Records Department at the completion of semesters.

The transcript typically shows a letter grade for each course. The grade point equivalent for a course is obtained from letter grades as follows:

## Grading Standard

Grade	Percentage	Description	Grade Point Equivalency
A+	96-100		4.33
A	91-95		4.00
A-	86-90		3.67
B+	81-85		3.33
B	76-80		3.00
B-	71-75		2.67
C+	66-70		2.33
C	61-65		2.00
C-	56-60		1.67
D	50-55	Minimum Pass	1.00
F	0-49	Failing Grade	0.00
S		Satisfactory – student has met and mastered a clearly defined body of skills and performances to required standards	N/A
U		Unsatisfactory – student has not met and mastered a clearly defined body of skills and performances to required standards	N/A
I		Incomplete	N/A
IP		Course in Progress	N/A
W		Withdrawal	N/A

## Course Standings

R	Audit. No Credit	N/A
EX	Exempt. Credit Granted	N/A
TC	Transfer Credit	N/A

## Grade Point Average (GPA)

1. The course grade points shall be calculated as the product of the course credit value and the grade value.
2. The GPA shall be calculated by dividing the total number of achieved course grade points by the total number of assigned course credit values. This cumulative GPA shall be determined and stated on the Transcript at the end of each Program level or semester.
3. Grades shall be assigned to repeated courses in the same manner as courses taken only once. For the purpose of GPA calculation of grades for repeated courses, they will be included in the calculation of the cumulative GPA.