

# Computer Aided Design & Drafting: Diploma

<b>Faculty of Trades and Technology</b>	kpu.ca/trades
<b>Drafting / CADD Technologies</b>	kpu.ca/trades/cadd
<b>Implementation Date</b>	01-Sep-2011
<b>Start Date(s)</b>	September January May
<b>Admission Type</b>	Selective entry
<b>Enrolment Type</b>	Open enrolment Limited enrolment
<b>Program Type</b>	Undergraduate
<b>Credential Granted</b>	Diploma Certificate Citation
<b>Offered At</b>	Cloverdale
<b>Format</b>	Full-time
<b>How to Apply</b>	www.kpu.ca/admission

## DESCRIPTION

The Computer Aided Design & Drafting (CADD) Diploma program is designed to develop and enhance practical skills; increasing students' knowledge for a successful CADD career.

Throughout the program students will design and draft various projects that are produced in digital and physical models. Students will obtain extensive experience utilizing AutoCAD and BIM softwares.

This program offers students two unique ways to approach their learning. First, students may choose from several specialties including:

- Architectural
- Structural
- Mechanical

Second, the program offers students three options for their studies:

- Diploma in Computer Aided Design and Drafting
- Certificate in Computer Aided Design and Drafting
- Citation in Computer Aided Design and Drafting

The Certificate, and Citation are embedded within the diploma. They allow students who do not wish to pursue a diploma in CADD to have an optional exit point after two or one semester of coursework. Additional information is available from our program website at: [kpu.ca/trades/cadd](http://kpu.ca/trades/cadd).

## Specialties

After successful completion of the CADD Core (first semester, Citation) students will choose their Specialty. Specialties are not offered every semester, therefore students are asked to consult with the CADD Program Chair through the Specialty selection planning process.

### ARCHITECTURAL

Normally offered in the Fall semester, students prepare sets of drawings to graphically convey design and dimensional

information to meet the qualifications for a building permit in residential, commercial and institutional applications.

Architectural CADD/Drafting graduates create 3D models and 2D drawings for residential, commercial and government buildings. They may pursue an entry level position in a variety of employment situations such as an Architectural design office, a manufacturing company of prefabricated buildings or trusses, a construction company, a kitchen/cabinet design company, a municipal office, or a company that specializes in single and multi-family residential plans.

### STRUCTURAL

Normally offered in the Spring semester, students prepare sets of drawings to graphically convey design and dimensional information for concrete, steel and timber structures, site preparation and precast concrete. Structural CADD/Drafting graduates create 3D models and 2D drawings for steel, concrete, and wood structures. They also prepare site drawings. Graduates may pursue an entry level position in a variety of employment situations such as an engineering office, a municipal office, or a steel fabrication shop. Structural graduates work on structures for Architectural, Industrial, Highway, Railway and Marine facilities.

### MECHANICAL

Normally offered in the Summer semester, Mechanical CADD/Drafting graduate students create 3D models and 2D drawings that detail industrial layouts such as conveyors and process piping, and manufacturing information for component assemblies and details. Graduates may pursue entry-level positions in a variety of engineering firms, product design companies, construction companies or in fabrication shops. Graduates may work closely with machinists and fabricators to perfect the design, and to establish efficient production and installation procedures.

### MULTIPLE SPECIALTIES

Students may take more than one Specialty and obtain more than one certificate. In doing so, students should be aware of the university's policy on second credentials (Policy L.5: Requirements for Graduation). See [kpu.ca/policies](http://kpu.ca/policies).

### OTHER SPECIALTIES

The CADD Department has courses developed for Electrical, Industrial, Manufacturing and Civil. These courses may be run as Special Purpose courses when there is sufficient demand. Please contact the CADD Department Chair at 604-598-6123 for more information.

## Options

### DIPLOMA IN COMPUTER AIDED DESIGN AND DRAFTING

The Diploma enables students to acquire advanced technical writing skills, Math skills and Physics skills, and to acquire technical skills in document control, web portfolio and CADD customization, sustainable design project management, and networking. These CADD courses are offered in the evening to facilitate certificate and advanced certificate graduates who are working in their industry.

### CERTIFICATE IN COMPUTER AIDED DESIGN AND DRAFTING

The Certificate prepares students for an entry level position as a CADD Drafting technician in the chosen Specialty. Using the most advanced CADD (Computer Aided Design & Drafting) software and 3 dimensional (3D) software, students will learn to produce drawings from concept sketches, design information, codes and

specifications as per industry standards for production by builders and manufacturers.

## CITATION IN COMPUTER AIDED DESIGN AND DRAFTING

The Citation incorporates the CADD Core which prepares students for the Specialty semester.

## CAREER OPPORTUNITIES

CADD/Drafting graduates may pursue a career in a variety of employment situations in architectural, engineering, manufacturing or municipal offices, or in a production / construction setting.

After a few years in CADD/Drafting many of our graduates move on to positions in sales, customer service, production management, estimating, CADD and network management and contract services (self-employment). Responsibilities can include design team management, project management of small projects, and production scheduling.

## PROGRAM ADMISSION REQUIREMENTS

In addition to KPU's General university admission requirements including the undergraduate-level English Proficiency Requirement, the following program admission requirements apply.

- Satisfy the Math requirement with one of:
  - Principles of Mathematics 11 with a minimum grade of C (or equivalent)
  - Pre-Calculus 11 with a minimum grade of C (or equivalent)
  - Foundations of Mathematics 11 with a minimum grade of C (or equivalent)
  - KPU MATH 1093, MATH 1117 or PSPM 1082 with a minimum grade of grade of C (or equivalent)
  - KPU MATQ 0011 or MATP 1011 or MATQ 1099 with a minimum grade of C (or equivalent)
  - Appropriate placement by the CADD Math Placement Test

**Note:** Students wishing to complete the Diploma program without having to undertake any preparatory courses must enter with English 12 – B (or equivalent), and one of Pre-calculus 12 – C; Principles of Math 12 – C; Pre-calculus 11 – B; or Principles of Math 11 – B (or equivalent).

Students with mental or physical impairments, who may require program accommodations, should contact the Department Chair at 604.598.6123 to discuss required skills and competencies and a Disability Advisor at 604.599.3233 to ensure appropriate accommodations can be arranged.

## ADVANCED STANDING

Applicants with Drafting 11 and/or 12 from a BC Secondary School can challenge the CADD 1100 course by writing a Qualifying Assessment. There is a nominal fee to write the assessment. Applicants must meet the CADD Program entrance requirements to write the assessment. Contact the CADD Department Chair at 604-598-6123 or email [cadd@kpu.ca](mailto:cadd@kpu.ca) for more information.

## ADDITIONAL REQUIREMENTS

Applicants should have the ability to work well with co-workers as a member of a design team, which includes the ability to

communicate in both written and oral English. The ability to pay attention to detail and the ability to visualize in two- and three-dimensions is an asset.

Program applicants benefit from having basic computer knowledge such as E-mail, Internet, file management, working knowledge of Windows environment, basic operating system functions and text editing.

Applicants can arrange to acquire these basic computer skills ahead of time through Academic Career Preparation upgrading.

## PROGRAM REQUIREMENTS

The Diploma in CADD program consists of 63 credits, organized into four semesters. After the first semester, courses are offered as open enrolment. Courses in semesters 3 and 4 are normally in the evening at the Cloverdale campus.

### Semester 1 - CADD Core Requirements

#### All of:

CADD 1100	Drafting Fundamentals	4 credits
CADD 1110	Summative Project	4 credits
CADD 1150	Computer Aided Drafting & Design (CADD) Software	4 credits
CADD 1160	Introduction to Office Procedures and Software	3 credits

*Upon successful completion of the Semester 1 CADD Core courses, students are eligible to exit the program and receive a Citation.*

### Semester 2 - Specialty Requirements

**Note:** The Specialty schedule is subject to change based on demand and not all specialties are regularly scheduled. Please check online timetable for an up-to-date schedule.

#### ARCHITECTURAL SPECIALTY

#### All of:

CADA 1200	Architectural Fundamentals	3 credits
CADA 1210	Single Family Residential	4 credits
CADA 1220	Commercial Buildings	4 credits
CADA 1250	Introduction to Building Information Modeling (BIM) Software for Architectural	4 credits

#### MECHANICAL SPECIALTY

#### All of:

CADI 1210	Conveyor Systems	4 credits
CADI 1220	Process Piping	4 credits
CADM 1210	Component Assembly and Details	4 credits
CADM 1250	3 Dimensional (3D) Parametric Solids Modeling Software	4 credits

## STRUCTURAL SPECIALTY

### All of:

CADS 1200	Introduction to Structural Drafting and Concrete	4 credits
CADS 1210	Structural Steel	4 credits
CADS 1220	Wood Frame and Heavy Timber	4 credits
CADS 1250	Introduction to Building Information Model (BIM) Software for Structural	3 credits

*Upon successful completion of the Semester 1 CADD Core courses and one of the Specialties in Semester 2, students are eligible to exit the program and receive a Certificate in their chosen Specialty.*

## Semester 3 & 4 - Requirements

### All of:

BUSI 1210	Essentials of Management	3 credits
CADD 2100	CADD Graphics and Models: Rendering and Animation	4 credits
CADD 2110	Surveying and Site Work	4 credits
CADD 2160	Professional Practice for Design and Drafting	4 credits
CADD 2220	Sustainable Design	4 credits
CADD 2250	CADD Customization and Networks	4 credits
ENGL 1100	Introduction to University Writing	3 credits
MATH 1112	Pre-Calculus Algebra	3 credits
PHYS 1100	Introductory Physics	4 credits

## CREDENTIAL AWARDED

Upon successful completion of this program, students are eligible to receive a **Diploma in Computer Aided Design and Drafting**.

Upon successful completion of Semester 2 (the Specialty), students are eligible to receive a **Certificate in Computer Aided Design and Drafting** in their chosen specialty.

Upon successful completion of Semester 1 (CADD Core), students are eligible to receive a **Citation in Computer Aided Design and Drafting**.