GEORGIAN COLLEGE

ARCHITECTURAL TECHNICIAN

Program Outline

Major: ARTC
Length: 2 Years
Delivery: 4 Semesters, plus 2 work terms
Credential: Ontario College Diploma, Co-op
Effective: 2014-2015
Location: Barrie
Start: Fall (Barrie)

Description

This two-year program, with 4 semesters and 2 co-op work experiences, prepares students to work alongside architects, designers and project managers. While developing skills in architectural drafting and design as well as an understanding of the building design and construction process, students take courses in computer-aided drafting and project design, building codes, contracts and specifications. Teamwork and project-based learning is emphasized. This program is common with the first four semesters of the Architectural Technology program and graduates may choose to continue into the third year of that program.

Career Opportunities

Graduates find work in the private sector as architectural and civil draftspersons, working in the teams that prepare design or working drawings. They may also find careers as sales representatives and technicians in building products manufacturing firms and in government departments. They may also find employment as assistants in architectural construction field offices.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

- communicate with clients, contractors, other building professionals, and approval authorities;

- assist in the preparation, reading, and interpretation of drawings, and other graphical representations used in building projects;
- read and assist in the preparation of specifications and other project documents used in design and construction;
- assist in the preparation of estimates of time, costs, and quantity;
- assist in solving technical problems related to building projects through the application of principles of building science and mathematics;
- collaborate with members of the building team;
- assist in the development of architectural designs;
- review and assist in the preparation of site planning documents;
- comply with the legal and ethical requirements of an architectural technician in the practice of building design and construction;
- assist in the assessment of buildings related to repurposing and renovation projects.
- ensure personal safety in the workplace;
- identify sustainable design and building practices;
- use current and emerging technology to support building projects;
- assist in the administration of the construction phase of building projects.

Practical Experience:
Co-operative Education is a mandatory component of all Co-op programs at Georgian College; it has been designed as a process by which students integrate their academic education with work experience related to their program of study. This integration affects much more than simply earning a salary, including the adjustment to the work environment and the development of professionalism. It also reinforces skills and theory learned during academic semesters, develops professional contacts, job knowledge and career path, improves human relations and communication skills and promotes personal maturity and financial independence.

Students are requested to register, attend and participate in their scheduled co-operative education classes. These classes are scheduled for all first year students and are expected to be completed in order to proceed successfully to their first co-op work experience. To ensure students are eligible to proceed onto any co-op work experience students should refer to Promotional Status and Eligibility for Co-op as outlined in the College Calendar. Co-op policies and procedures can be located on our website: www.georgianc.on.ca/careers/for-students/

Georgian College follows the Co-operative Education guidelines set out by the Canadian Association for Co-operative Education (CAFCE) and Education at Work Ontario (EWO) by supporting the learning outcomes designed for the program specific graduate profile and curriculum as set out by the Ministry of Training, Colleges and Universities.

The Program Progression:

Fall Intake - Barrie

Sem 1	Sem 2	Work Term 1	Sem 3	Work Term 2	Sem 4
Fall 2014	Winter 2015	Summer 2015	Fall 2015	Winter 2016	Summer 2016

Admission Requirements:

You must meet ONE of the following requirements to be eligible for admission to these programs:

Secondary school applicants:

- OSS Curriculum: OSSD or equivalent with Grade 12 English (C) or (U) (ENG4C, ENG4U); plus any Grade 12 College Mathematics (MAP4C or MCT4C), or any Grade 12 U University Mathematics. Also recommended: Grade 12 College or Grade 11 or 12 University Physics (SPH4C, SPH4U, SPH3U) or Grade 12 College or Grade 11 or 12 University Chemistry (SCH4C, SCH4U, SCH3U); Grade 11 or 12 College or University Technological Design (TDJ3M, TDJ4M); Grade 11 or 12 College Manufacturing Engineering Technology (TMJ3C, TMJ4C)

Non-Secondary school applicants (19 years or older):

- Any credit Communication course and most credit mathematics courses taken at Georgian College
- College preparatory programs including those taken at Georgian College: Technology Foundation and Technology Fundamentals*
- Equivalent courses in English and mathematics taken through secondary school or Independent Learning Centres (at the general, advanced, college or university level)
- Academic and Career Entrance Certificate (ACE) program with communications and business, apprentice or technical mathematics*
- Mature student testing in English and mathematics that meets the minimum standards for admission (available through most testing services)*
- Ontario High School Equivalency Certificate (GED)
- English, Literature or Communication credit courses and most mathematics credit courses from accredited colleges/universities

Home school applicants:

- Applicants can write the mature student testing in English and mathematics that meets the minimum standards for admission (available through testing services)*

* available from Georgian College. For a complete listing please contact the Office of the Registrar.

Non-secondary school applicants who are 19 years of age or over by the first day of classes, and who lack the academic entrance qualifications, may be considered for entrance to an appropriate post-secondary diploma or certificate program as mature applicants. Mature applicants must meet all program specific prerequisites including all selection criteria; equivalencies are stated above. Applicants who are unsure whether they meet admission requirements should contact the Office of the Registrar. In addition, those applying as mature students and having no documentation of Grade 12 education must supply, if required, proof of age, such as a copy of an official birth certificate or driver's licence. Refer to Section 2.5 and 2.6 of the Academic Calendar for further details.

Credit transfer and course exemptions:
Applicants who have taken courses from a recognized and accredited post-secondary institution and/or have relevant life/learning experience may be eligible for credit transfer/course exemptions. Courses/experience must match at least 80% of the learning outcomes of a Georgian College course with a minimum grade of 60% or C achieved in previous coursework; some program exceptions apply (see program outline). For further information please visit the Credit Transfer Centre website: georgiancollege.ca/admissions/credit-transfer/

Graduation Requirements:
27 Mandatory Courses
2 Communications Courses
3 General Education Courses
2 Co-op Work Terms

Graduation Eligibility:
To graduate from this program, the passing weighted average for promotion through each semester, from year to year and to graduate is 60%. Additionally, a student must attain a minimum of 50% or a letter grade of P (Pass) or S (Satisfactory) in each course in each semester.

Mandatory Courses
ACCT3006 Construction Accounting
ARCH1000 Architectural Design - Fundamentals
ARCH1001 Quantity Surveying 1
ARCH1002 Architectural Design - Residential
ARCH1003 Quantity Surveying 2

ARCH1005 Architectural Drafting 1
ARCH1006 Architectural Drafting 2
ARCH1007 Drawing for Architecture
ARCH2000 Archtectural Design - Commercial
ARCH2002 Architectural Codes and Standards 1
ARCH2004 Architectural Drafting 3
ARCH2005 Architectural Codes and Standards 2
ARCH2006 Sustainable Design
ARCH2007 Architectural CAD
BLDG2000 Ontario Building Code and Provincial Standards
CONS1005 Construction Technology: Structures
CONS1006 Construction Technology: Interiors
CONS2005 Construction Technology: Building Envelope
CONS2006 Building and Materials Reuse
CONS2007 Site Planning and Landscaping
ENVR1008 Architecture and the Environment
MATH1028 Mathematics for Constructions
MENG2016 Statics
MENG2017 Strength of Materials
MGMT1002 Productivity Tools
MGMT2025 Project Management
SURV1002 Surveying

Communications Courses
To be selected at time of registration from the College list, as determined by testing.

General Education Courses
To be selected from College list

Co-op Work Terms
COOP1013 Technology Work Term 1
COOP2009 Technology Work Term 2

Course Descriptions:
ACCT3006 Construction Accounting 42.0 Hours
This course provides an introduction to accounting and its applications in the construction industry. Included are financial statement presentations and preparations of the required entries.

ARCH1000 Architectural Design - Fundamentals 42.0 Hours

This course addresses architectural design and the theory supporting this activity. Its purpose is to convey the principles, logic and dependencies of the design process between project inception and completion. The course presents also the specific representations used in architectural design and various techniques for design presentation at different project development stages.

ARCH1001 Quantity Surveying 1 42.0 Hours
This course provides an overview of the role of estimating in architecture and the construction industry and a review of the various types of estimates used within the industry. Information presented in this course provides students with the skills necessary to define a complete/good estimate recognizing the standards of the industry.

ARCH1002 Architectural Design - Residential 42.0 Hours
Architectural and structural design related to residential programs is covered in this course. The student develops designs and learns to recognize and interpret a designer's intent. The student also develops knowledge of construction components, basic building code requirements, and local by-laws.
P- ARCH1000 Architectural Design - Fundamentals

ARCH1003 Quantity Surveying 2 42.0 Hours
Presented in this course are the fundamentals of quantity surveying, employing methodology from the Canadian Institute of Quantity Surveyors, (CIQS) Method of Measurement and Industry Practice. Take off procedures will be demonstrated and applied using examples from wood framed structures, concrete foundations, and simple grading exercises.
P- ARCH1001 Quantity Surveying 1

ARCH1005 Architectural Drafting 1 42.0 Hours
This course introduces the student to computer applications used in architectural design. This first level CAD course provides support to other design related courses where computerized drafting is required for completing specific assignments.

ARCH1006 Architectural Drafting 2 42.0 Hours
This course continues to elaborate the computer applications used in architectural design. This second level CAD course provides support to other design related courses where computerized drafting is required for completing specific assignments.
P- ARCH1005 Architectural Drafting 1

ARCH1007 Drawing for Architecture 42.0 Hours
This course is preparing the students to learn, practice and improve their skills in sketching, free-hand drawing and basic rendering, as these are important channels of visual communications in the industry.

ARCH2000 Archtectural Design - Commercial 42.0 Hours
In this course, students will design a medium sized commercial building using non-combustible materials. Logical progressive steps and specific design requirements will result in a complete set of construction drawings that fulfills most of the requirements of the client.
P- ARCH1002 Architectural Design - Residential

ARCH2002 Architectural Codes and Standards 1 42.0 Hours
This course starts with a basic overview of the current set-up, structure, content and application of the requirements of Ontario Building Code using both Volumes 1 and Volume 2 to assist the user with the knowledge of the necessity of the current requirements. The focus of this course will be on the current Building Code requirements dealing with houses specifically on Part 9.

ARCH2004 Architectural Drafting 3 42.0 Hours
This course approaches advanced techniques for computer applications used in architectural design. This third level CAD course provides support to other design related courses where computerized drafting is required for completing specific assignments.
P- ARCH1006 Architectural Drafting 2

ARCH2005 Architectural Codes and Standards 2 42.0 Hours
This course covers the advanced sections in Part 9 of the Ontario Building Code and other Parts of the OBC that are referenced in Part 9, including Parts 3 and Part 4, that apply to houses and small buildings. This course is also based on the Small Building requirements to prepare for the BCIN qualification exams in that category as required by the Building and Development Branch of the Ministry of Municipal Affairs and Housing.
P- ARCH2002 Architectural Codes and Standards 1

ARCH2006 Sustainable Design 42.0 Hours
This course elaborates the fundamental principles of sustainability in architectural design, discussing about materials, processes and technologies that can provide a more sustainable life of the architectural product.

ARCH2007 Architectural CAD 42.0 Hours
This course is the venue for the transition from two-dimensional drafting to three-dimensional modeling in architectural design. The concepts of modeling and simulations are presented as well.
P- ARCH2004 Architectural Drafting 3

BLDG2000 Ontario Building Code and Provincial Standards 42.0 Hours
This course provides advanced knowledge of the object, structure, contents and application of Part 3 of the Ontario Building Code, (O.B.C.), specifically as it pertains to

large buildings. Also included is exposure to the infrastructure standards and requirements of the Ontario Provincial standards and to the standards writing organizations in Canada and internationally as they impact building design and construction.

CONS1005 Construction Technology: Structures 42.0 Hours
This course studies the typical solutions, materials and methods commonly used in architectural design for structural elements and systems. Students will independently research on various topics related to structural materials.

CONS1006 Construction Technology: Interiors 42.0 Hours
This course elaborates on the architectural solutions and construction materials and processes used to design and build the interior of a building. Students will independently research on various topics related to interiors materials.

CONS2005 Construction Technology: Building Envelope 42.0 Hours
The course covers construction materials and processes used to enclose the interior space of a building. Constructive solutions, details, applications and examples are included in this subject. Students will independently research on various topics related to building envelope materials.

CONS2006 Building and Materials Reuse 42.0 Hours
The course elaborates on the options, methods and processes used to preserve, remodel, re-purpose or decommission a building. Students will be introduced to the analysis process required for LEED compliance.

CONS2007 Site Planning and Landscaping 42.0 Hours
This course introduces the students to zoning, municipal standards and site planning. Site grading, hard surfaces, landscaping, and drainage will also be investigated.

COOP1013 Technology Work Term 1 640.0 Hours
Co-operative Education will provide students with the skills to conduct a college directed and self directed job search in their chosen field of study. Students will obtain a co-op work experience with an employer for a period of 14 weeks. All students are responsible to submit a work term report indicating achievement of specific learning outcomes during their 1st co-op work term. Georgian College follows the Co-operative Education guidelines set out by the Canadian Association for Co-operative Education (CAFCE) and Education at Work Ontario (EWO) by supporting the learning outcomes designed for each program.

COOP2009 Technology Work Term 2 560.0 Hours
Co-operative Education will allow students to gain new/enhanced technical work experience. As students begin to recognize their chosen academic strengths and career direction, they will be better prepared to choose their academic courses and

professional options. All students are responsible for submitting a work term report and employer evaluation form following this work term. It is expected that a student wishing to return to their Work Term 1 employer, be asked to seek new/more in depth responsibilities so that enhancement of program specific learning outcomes be achieved.
P- COOP1013 Technology Work Term 1 or P- FLD4201 Co-Op Work Term 1 (4 Mths)

ENVR1008 Architecture and the Environment 42.0 Hours
The course presents criteria for an environmental design, relationships between the environment and buildings, the construction processes and materials, the operating aspects and the options for the end-of-life of a structure.

MATH1028 Mathematics for Constructions 42.0 Hours
This course provides a foundation in mathematics subjects related to architectural and construction applications. Students will develop skills in mathematical thinking and problem solving, by employing the use of algebra, trigonometry and two- and three-dimensional geometry.

MENG2016 Statics 42.0 Hours
This course is an introduction to the equilibrium of externally applied forces and internally developed reaction forces as applied to construction structures.
P- MATH1028 Mathematics for Constructions

MENG2017 Strength of Materials 42.0 Hours
This course is designed to familiarize the student with some basic concepts of strength of materials, particularly direct stress and strain, bending and torsional stresses.
P- MENG2016 Statics or P- EML4113 Statics or P- MENG2011 Statics and Dynamics or P- EML4237 Statics And Dynamics

MGMT1002 Productivity Tools 42.0 Hours
This course introduces strategies, methods and tools for analyzing, organizing, and presenting information in a business environment. Students will learn about research methods, data processing, document editing, time management and presentation techniques required for an efficient professional performance.

MGMT2025 Project Management 42.0 Hours
This course introduces the fundamental principles necessary for successful management of projects. Project planning, management and control techniques will be discussed and the application of computers in project management will be studied.

SURV1002 Surveying 42.0 Hours
This is an introductory course to the principles of surveying as related to the construction industry. Emphasis is placed on obtaining field skills in linear measurement and the operation of levels, transits, theodolites and electronic surveying equipment.

Basic traverse computation and other office calculations that use the collected field data are practiced.

Course Description Legend
P = Prerequisite; C = Concurrent prerequisite; CO= Corequisite

Information contained in College documents respecting programs is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs. The college reserves the right to add or delete programs, options, courses, timetables or campus locations subject to sufficient enrolment, and the availability of courses.