SCHOOL OF
BUILDING AND CONSTRUCTION SCIENCES
PROGRAM HANDBOOK

ARCHITECTURAL
BUILDING RENOVATION
CIVIL ENGINEERING
CONSTRUCTION ENGINEERING
PRE-TECHNOLOGY - BCS FOUNDATIONS
TRANSPORTATION ENGINEERING
URBAN & REGIONAL PLANNING - GIS

FALL 2013 INTAKE
Architectural Technician Diploma

Architectural Technology Diploma
  • Design Option
  • Construction Option

Building Renovation Technician Diploma

Civil Engineering Technician Diploma

Civil Engineering Technology Diploma

Construction Engineering Technician Diploma

Pre-Technology (BCS Foundations) Certificate

Transportation Engineering Technology Diploma

Urban & Regional Planning – GIS Technician Diploma

REVISED July 2013
This handbook is printed to provide guidance and information for students and employers. Every effort is made to keep this handbook accurate and timely. Prospective students and employers should however, check with the School of Building and Construction Sciences (905)-575-2251 for details regarding admission requirements, enrolment limitations, co-operative education, and the program of studies for the various programs offered by the School. For more information visit our website at www.mohawkcollege.ca.

**Information Contacts**

For general information about....

Mohawk College  
Admissions  
Post-Secondary ext 2415  
Continuing Education ext 2422  
Counseling Department ext 2211  
Accessible Learning Services ext 2389  
Financial Aid & Awards ext 2113  
Cooperative Education Services ext 2167  
Student & Graduate Employment Service ext 2373

For specific information about....

Apprenticeship (STARRT)  
Mr. Doug Daniels (905)-575-1212 ext 5050  
Mr. Wayne Ostermaier (905)-575-1212 ext 5249

Architectural Technician & Technology  
Mr. Gary Wignall (905)-575-2156

Building Renovation Technician  
Mr. Bradley MacDonald (905)-575-1212 ext 5280

Civil Engineering Technician & Technology  
Mr. Peter Olynyk (905)-575-1212 ext 3186

Construction Engineering Technician  
Mr. Chris Blackwood (905)-575-2142

Continuing Education  
Ms. Inaz Jenkins (905) 575-2203

Mathematics  
Ms. Karen Lawrence (905) 575-1212 ext 3614

Pre-Technology (BCS Foundations)  
Mr. Chris Blackwood (905) 575-2142

Transportation Engineering Technology  
Mr. Dan Havercroft (905) 575-2143

Urban & Regional Planning – GIS Technician  
Ms. Joan Keating (905)-575-1212 ext 3138

Cooperative Education  
Ms. Maureen Minaker (905)-575-2161  
Mr. Tony DiFrancesco (905)-575-2241
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MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY

Mohawk College has grown to be one of the great Canadian community colleges. It began with the establishment of the Provincial Institute of Textiles (PIT) in 1947, which in turn became the Hamilton Institute of Technology (HIT) in 1957. Ten years later, in 1967, the HIT was incorporated as the newly established Mohawk College of Applied Arts and Technology. The College supports campuses and education centres in Brantford, Hamilton, and Stoney Creek.

A great variety of full-time, post-secondary certificate and diploma programs together with a wide range of part-time courses and programs, leading to either a certificate or college diploma, are possible in the following areas:

- Engineering Technology
- Health Sciences
- Skilled Trades and Apprenticeships
- Business
- Continuing Education
- Human Services
- Interdisciplinary Studies

Many of the programs are co-operative in nature, offering students the opportunity to experience the real workplace environment and gain valuable on-the-job training. The college also has many partnerships in training and technology to make us more valuable to the students and the community at large.

Mohawk College serves the communities throughout Southern Ontario, offering over 100 full-time programs and more than 1,000 Continuing Education courses. There are currently 10,000 full-time, post-secondary students enrolled at Mohawk College and 40,000 continuing education students. Mohawk College is the largest in-school apprenticeship trainer in the province, with more than 3,000 apprentices registered in skilled trades programs. There are close to 800 full-time employees, including over 400 full-time faculty, and an alumni association of more than 72,000 members. There is also a 342 bed on-campus student residence.

The Accessible Learning Services staff develops ways to eliminate barriers and facilitates access for students at all campuses that may have learning or physical disability, visual or hearing impairment, mobility impairment, or other disability. Student self-identification well in advance of course or program start-up is required to effectively evaluate, plan, co-ordinate, and implement support services. For more information please contact the Accessible Learning Services.

Make Mohawk College your choice…and if you’re not sure, ask a graduate!

Visit the College’s website at www.mohawkcollege.ca.
The School of Building and Construction Sciences (BCS) is a part of the Faculty of Engineering Technology at Mohawk College. We offer full-time post-secondary diploma and certificate programs in various disciplines.

**ARCHITECTURAL** technology combines art, science, and the environmental factors required to design, build, renovate and maintain residential, commercial, institutional, and industrial buildings.

**CIVIL** engineering technology includes the design, construction, and maintenance of public and private facilities. Some examples of these facilities are: treatment and distribution plants that provide potable water; transportation facilities that ensure safe travel; and waste treatment systems that maintain a safe and clean environment.

**CONSTRUCTION** engineering is an important branch of both the civil and architectural technologies. It focuses on the problems and solutions encountered during the construction of roads, buildings, sewers, and other public and private facilities.

**TRANSPORTATION** engineering technology is a highly specialized field concerned with the safe and efficient movement of people and goods. The planning, design, and operation of new and existing transportation facilities are part of this discipline.

**URBAN PLANNING** combines planning principles, legislation and geographical information management with the art of urban and subdivision design. The creation of a well-balanced municipal environment that benefits all its inhabitants is a primary goal of this discipline.

In conjunction with the Faculty of Skilled Trades and Apprenticeship at the STARRT (Stoney Creek) campus, BCS offers its students in the Construction Engineering Technician and Building Renovation Technician programs, comparable apprenticeship skills training. **APPRENTICESHIP** training is a partnership between an employer, a person who desires training in a particular trade, and government. Skilled workers called journeypersons or tradespersons are in high demand in a wide variety of occupations. To become a journeyperson in a particular occupation you must be employed in the trade and require a combination of on-the-job experience and in-school training called apprenticeship. For more information on apprenticeship please contact the STARRT campus at (905)-575-5060 or contact the local MTCU apprenticeship branch office (Hamilton 905-521-7764)

Men and women working as trades-people, technicians, and technologists in these related disciplines have a great influence on the health, safety, and standard of living that we all enjoy. Through their efforts, a unique blend of art, science, and technology is used to service the many needs of society.
ADMINISTRATION, FACULTY & SUPPORT STAFF

DEAN
Tony Thoma, B.Sc., BBA, MBA, P.Eng.

ASSOCIATE DEAN
Chris Blackwood, B.A., B.Sc., Dipl.T. (Transportation), C.E.T.

ADMIN ASST
Donna Ruhloff

TECHNOLOGISTS
Mario Rojas, Dipl.T. (Civil)
Matt Shelley, Dipl.T. (Civil)

FT FACULTY
Rocco Carbone, B. Eng & Mgmt, P.Eng,
Darota Goede, B.Arch., Dipl.T. (Arch)
Kevin Haluik, Dipl. T. (Arch), CEC
Dan Havercroft, B.A.Sc., P.Eng.
Joan Keating, B.Env.Sc., C.P.T.
Shannon Kyles, Dipl., B.A., M.A.
Peter Marzynski, M.Arch., Ph.D.
Bradley MacDonald, C of Q (Carpentry)
Madaniyo Mutabazi, Ph.D.
Peter Olynyk, B.A.Sc., M.A.Sc., P.Eng.
Sean O’Neill, C of Q (Plumber/Steamfitter)
Steven Pudsey, Dipl. (Urban), C.P.T.
Stan Riewald, C of Q (Carpentry)
Dan Robichaud, Dipl.T. (Arch)
Lewis (Ted) Wertz, B.A.Sc., P.E.
Gary Wignall, Dipl. T. (Arch)
Dave Wrobel, Dipl. (Business), C of Q (Carpentry)
George Ziotek, Dipl.T. (Arch), M.A.A.T.O.

PT FACULTY
Irene Amog, Dipl.T. (Civil)
Amanda Antler, Dipl. T. (Arch)
Michael Easton, Dipl. (Civil)
Shannah Evans, Dipl. (Urban)
Ward Houghton, B.A., OLS
James Ip, Dipl.T. (Civil)
Stephan Namisniak, Architect
Kevin Nicol, Dipl.T. (Transportation)
Vicky Pellerin, Dipl.T. (Arch), LeedAP

STUDENT SUCCESS ADVISOR
Lorraine Skuse, Dipl. (OfficeAdminExec)

COOPERATIVE EDUCATION
Jim Vanderveken, Dean of Interdisciplinary Studies
Maureen Minaker, Co-op Specialist (Civil, Transportation)
Tony Difrancesco, Co-op Specialist (Architectural)
POST-SECONDARY DIPLOMA AND CERTIFICATE PROGRAMS

BCS offers two-year programs (Technician) and three-year programs (Technology) leading to a Diploma. Graduates from the Technician Programs are entitled to use the DIPL. designation. Students who have completed the requirements of the Technology Advanced Diplomas are entitled to use the DIPL.T. Designation.

The Technician programs offered by BCS Department include:

- Architectural Technician
- Civil Engineering Technician
- Construction Engineering Technician
- Construction Engineering Technician – Building Renovation
- Urban & Regional Planning Technician – GIS

These programs do not have a co-operative education component. The curriculum is however structured to include significant laboratory and practical applications. The Urban & Regional Planning Technician – GIS program has a field placement for students. Students in these programs are encouraged to seek out summer and part-time job opportunities within their field.

The Technology programs offered by the BCS Department include:

- Architectural Technology - Design Option
- Architectural Technology - Construction Option
- Civil Engineering Technology
- Transportation Engineering Technology

All the technology programs are co-operative in nature. Students must meet the minimum requirement of eight months work experience on co-op in order to graduate with a Co-op Diploma. Students within each discipline must compete for the available co-op jobs, and go through an interview and selection process. There is a service fee for co-operative education. The department is assisted by the Job Centre and Co-operative Education whose sole purpose is to seek out positions, assist the students in getting placed, and evaluate their performance in the field. For more information on co-op please see the Co-operative Education section in this handbook or see Cooperative Education on the college website.

Starting in Fall 2012, BCS offers a customized Pre-Technology Certificate program (1 year) intended to allow students who do not meet the admission criteria to still come to College and experience the College environment. This Certificate contains course credits that are transferable to the diploma programs, and provides the academic upgrading required to subsequently apply for the diploma programs.

In conjunction with Continuing Education, BCS assists with the delivery of several locally – developed certificate programs that include AutoCAD Design, Residential Design and Drafting, Estimating and Construction Management.

AWARDS, SCHOLARSHIPS, AND BURSARIES

A variety of awards, scholarships, and bursaries are available every year through the Mohawk College Foundation. Each award has criteria written by the donor. Some awards are open to all Mohawk College students, while others are only open to specific Faculties within the College. Shown below is a partial list of awards from previous years that were available to students in the Building and Construction Sciences Department. These awards are dependent upon the donors and we cannot guarantee that these awards will be offered every year.
AWARDS FOR BUILDING AND CONSTRUCTION SCIENCES STUDENTS

Association of Architectural Technologists of Ontario Award
Dufferin Construction Company Award
Ontario Good Roads Association Award
McNally Construction Inc. Award
Stantec Consultant Group Limited Award
Johns & Khes Planning Solutions Planning Graphics Award
Ken Dakin Planning Consultant Technical Merit Award
Bryan Prince Bookseller Ltd. Planning Principles Award
Canadian Association of Certified Planning Technicians Planning Graphics Award
B.L.S. Planning Consultants Planning Principles Award
Harold P. Langer Urban Design Award
Hamilton, Burlington and District Real Estate Board Outstanding Student Award (2)
Hatch Associates Ltd. Award
International Municipal Signal Association Award
James G. LeSarge Memorial Award
ITE Hamilton Section Bursary
iTrans Consulting Award
Terrance Webster Architects
Tradeport International Corporation Award
Sewer and Watermain Construction Award

A variety of bursaries are also available to students through the Financial Aid and Awards Office (905)-575-2133.

TECHNICIAN or TECHNOLOGIST: WHAT’S THE DIFFERENCE?

The difference between technicians and technologists is a difficult concept to describe. There are people who may be classified as technicians in the workplace but perform the work of a technologist, and the reverse also applies.

A technician is normally someone who is skilled in handling instruments and performs tasks that require specialized skills, training, and knowledge. Technicians will choose from several available methods to solve problems where measurable variables are involved and information is readily obtainable. Technicians will use basic algebra, geometry, trigonometry, and standard software packages to mathematically analyse conditions. They will troubleshoot systems to locate and repair faulty components. Technicians will perform repetitive design tasks and sometimes make site-specific and minor changes to existing plans, layouts and calculated values.

A technologist goes beyond the repetitive application of process. Technologists deal more with abstract concepts that are not readily demonstrated, but proven by means of indirect measurement and inference. They deal with complex, integrated systems of equipment, structures and processes. Technologists will develop methods of data collection and analysis, often leading to solutions which are complex. They troubleshoot problems and develop design improvements or alternative product applications. Technologists are adaptive individuals and will be looking for new and better ways to apply current technologies to their jobs.

Does that help?
Let's look at a practical example using the civil engineering technician and technology programs.

A civil engineering technician on a construction site could have the responsibility for ensuring that the concrete used to construct a foundation conforms to stringent requirements. That technician would have the skills necessary to test and analyse the concrete and determine if it meets the standards called for in the contract. A civil engineering technologist, in addition to performing the technician's duties, would also have the skills to analyse and determine exactly what the standards for that concrete should be, the strength of concrete, the specifications, and the consequences of not conforming to the specifications. The technologist may also have supervisory responsibilities on the job site.

In more general terms, technologists will normally have more responsibility and decision-making in their jobs than technicians. As a consequence of this the technologist requires more training and will normally have greater career opportunities and higher salary expectations.

No matter what program a student graduates from however, success is largely dependent on the student, and the goals that he/she sets for him/herself. Further information about technicians and technologists can be discovered at www.oacett.org. OACETT is one of the provincial bodies that certifies technicians and technologists in Ontario.
THE BCS CLUSTER SYSTEM

Students that are accepted into the Architectural, Civil and Transportation Engineering programs are accepted into the "BCS Cluster" (Building and Construction Sciences) and take a common first semester.

### ACADEMIC SEMESTER 1

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADM CV203</td>
<td>CAD A</td>
<td>3</td>
</tr>
<tr>
<td>COMP CO001</td>
<td>Generic Computer Training</td>
<td>2</td>
</tr>
<tr>
<td>ENVR EA204</td>
<td>Environmental Technology</td>
<td>3</td>
</tr>
<tr>
<td>MATH MS171</td>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>SURV EA141</td>
<td>Surveying 1</td>
<td>4</td>
</tr>
<tr>
<td>TDRW EA106</td>
<td>Drafting Fundamentals &amp; Standards</td>
<td>3</td>
</tr>
</tbody>
</table>

Options: Select 1 based on results of Language Assessment

| COMM 11040 | Communications D                    | 4          |
| COMM LL041 | Communication                        | 3          |

**Total Hours/Week** 22

Following the first semester, students in the two-year Technician Programs (Architectural, Civil Engineering) will take the following courses in the second semester:

### ACADEMIC SEMESTER 2 (TECHNICIAN)

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG EA202</td>
<td>Estimating 1</td>
<td>3</td>
</tr>
<tr>
<td>CADM CV206</td>
<td>CAD B</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 10032</td>
<td>Green Building Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>LAWS CN240</td>
<td>Ontario Building Code</td>
<td>4</td>
</tr>
<tr>
<td>MATH MS248</td>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATL EA102</td>
<td>Construction Materials 1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Hours/Week** 21
Students in the three-year **Technology Programs** (Architectural, Civil Engineering, and Transportation Engineering) will take the following courses in the second semester:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG EA202</td>
<td>Estimating 1</td>
<td>3</td>
</tr>
<tr>
<td>CADM CV206</td>
<td>CAD B</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 10032</td>
<td>Green Building Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MATH MS271</td>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATL EA102</td>
<td>Construction Materials 1</td>
<td>4</td>
</tr>
<tr>
<td>PHYS EA201</td>
<td>Applied Mechanics 1</td>
<td>4</td>
</tr>
<tr>
<td>TRAN EA105</td>
<td>Transportation Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours/Week** 24

Note that four courses in semester two are common to both Technician and Technology.

- BLDGEA202
- CADMCV206
- ENVR10032
- MATLEA102

This is to facilitate a Technician student the opportunity to transfer to semester three of Technology after completing three spring/summer courses:

- MATH MS271
- TRAN EA105
- PHYS EA201

Promotion within the BCS cluster is governed by the College’s Policy AC700 Grading and Promotion, and by BCS promotion requirements. Students will be asked to complete a Program Choice Form at the end of each semester.
THE BCS CLUSTER SYSTEM

Promotion from one semester to the next requires certain levels of academic performance. There is great demand for several of our programs and the School uses student choice of program, grades, and academic success as the criteria for promotion and program selection. Students enrolled in the BCS Cluster have the opportunity to move from one program to another at the end of the first semester. Every attempt is made to give students their first choice of program (see the Program Selection Forms in the Promotion Requirements section of this handbook).

Students may also change programs at the end of the second semester. Students in the technician stream can change to a different technician program. Technology students can switch between the various technology programs. The better a student performs academically, the more likely the chance that he/she will get into the program of his/her choice. It is this competition for positions in the various programs that has made our graduates extremely valuable to both co-op and full time employers.

Figure 1 illustrates how students start in the first semester BCS Cluster classes, and then move into their respective Technician and Technology programs. For more details on the promotion and program selection requirements see the section covering BCS Promotion Requirements in this handbook.

Another added benefit to the cluster system is that a Technician graduate can return for a third year to complete the second technician diploma. Students in any technology program need only start in Semester 3 to switch to or add a different program.
Architectural Technician
A Two-Year Diploma Program
OCAS Code: MOHA 420 F
Fennell Campus
Start date: September

The ability to create structures of all sizes, shapes and uses is one of the defining characteristics of our civilization. The conception, design, construction and on-going maintenance of such structures requires the joining together of a variety of technical and artistic abilities.

The Program

Architectural Technician is a two-year diploma program that provides specialized training in the following areas:

- residential design and construction
- commercial design and construction
- building materials
- sustainability concepts in architecture
- engineering and construction surveys
- building services
- CAD drafting and detailing
- estimating
- building codes

A “Hands-On” Education

The Architectural Technician program consists of four in-school semesters. The curriculum is heavily lab and applications oriented to prepare the graduate for the working world. The architectural technician is a vital and respected participant in the design, construction, and inspection component of any building construction project.

The Career Opportunities

Graduates from this program are working across Canada in both the private and public sectors. They are involved in every aspect of the architectural and building industry including planning, design and drafting, estimating, construction, inspection and sales. Be a vital team member and use your highly developed CAD skills to prepare detailed construction plans and specifications for buildings and other construction projects. Participate in inspection and supervision of building construction projects. Ensure that building materials and techniques are sustainable and match the industry standards. Get involved in building design and drafting, contract and estimate preparation, site supervision and building inspection. Work as a member of a team that includes architects, engineers, and technologists. Start your own residential renovation business. A career as an architectural technician is waiting for you!

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:

- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent *
- Grade 11 Physics and Grade 10, 11 or 12 Design Technology recommended

Options are available for mature applicants. Please contact Admissions for more information.

* Applicants that do not satisfy minimum requirements will be provided an alternate offer to Pre-Technology (BCS Foundations) Program #341 as a pathway to their desired program. Successful graduates from this program will be considered for credit transfer into their original program choice. Applicants that would like to challenge the math requirements may do so by writing a Pre-admission assessment test for a fee (certain conditions apply).

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca.
Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s office at (905)-575-2251 for more information about advanced standing. Graduates from this program may be permitted direct entry into third semester of the Architectural Technology program (See BCS Promotion Requirements 400).

**Professional Affiliations**
Ontario Association of Certified Technicians and Technologists (OACETT)
Association of Architectural Technologists of Ontario (AATO)
Canadian Construction Association (CCA)
Ontario Institute of Quality Surveyors (OIQS)

**The Program of Studies**

The following details the existing program of studies (POS) for the Architectural Technician Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook.

### ACADEMIC SEMESTER 1

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADM</td>
<td>CV203 CAD A</td>
<td>3</td>
</tr>
<tr>
<td>COMP</td>
<td>CO001 Generic Computer Training</td>
<td>2</td>
</tr>
<tr>
<td>ENVR</td>
<td>EA204 Environmental Technology</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>MS171 Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>SURV</td>
<td>EA141 Surveying 1</td>
<td>4</td>
</tr>
<tr>
<td>TDRW</td>
<td>EA106 Drafting Fundamentals &amp; Standards</td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td>11040 Communications D</td>
<td>4</td>
</tr>
<tr>
<td>COMM</td>
<td>LL041 Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours/Week: 22**

### ACADEMIC SEMESTER 2

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG</td>
<td>EA202 Estimating 1</td>
<td>3</td>
</tr>
<tr>
<td>CADM</td>
<td>CV206 CAD B</td>
<td>3</td>
</tr>
<tr>
<td>ENVR</td>
<td>10032 Green Building Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>LAWS</td>
<td>CN240 Ontario Building Code</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>MS248 Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATL</td>
<td>EA102 Construction Materials 1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Hours/Week: 21**
### ACADEMIC SEMESTER 3

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG 10043</td>
<td>History of Ontario Architecture</td>
<td>3</td>
</tr>
<tr>
<td>BLDG AR356</td>
<td>Residential Construction</td>
<td>4</td>
</tr>
<tr>
<td>BLDG AR385</td>
<td>Residential Building Services</td>
<td>3</td>
</tr>
<tr>
<td>BLDG CV342</td>
<td>Estimating 2</td>
<td>3</td>
</tr>
<tr>
<td>CADM AR304</td>
<td>CAD 2</td>
<td>4</td>
</tr>
<tr>
<td>TDRW CV306</td>
<td>Structural Detailing 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours/Week 20

### ACADEMIC SEMESTER 4

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tr>
<td>BLDG AR485</td>
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<td>BLDG AR492</td>
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<td>CADM CV406</td>
<td>Structural Detailing 2</td>
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<td>COMM 10265</td>
<td>Critical &amp; Innovative Thinking</td>
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<td>MATL AR448</td>
<td>Methods &amp; Materials 2</td>
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<td>MGMT CN340</td>
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<tr>
<td>OPEL XXXXX</td>
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Total Hours/Week 22

Many courses in Architectural Technician have equivalent courses offered through Continuing Education (CE). For more information about completing part of the program of studies on a part time basis through CE please contact the BCS School for an appointment 905-575-2251. Students wishing to complete both the Architectural and Civil Technician diplomas should first complete one diploma and then apply for direct entry into semester 3 of the second diploma.

**Architectural Technician Provincial MTCU Vocational Standards**

1. Assist in the collection and application of information from past building projects including graphics, reports, and other documents.
2. Assist in the preparation of accurate estimates of time, cost, quality, quantity with relation to tenders and bids.
3. Assist in the collection, processing, interpretation, and application of survey and layout information related to building projects.
4. Communicate building-project related information by producing data in graphic, oral, and written formats.
5. Recognize the need to work according to contractual obligations, the project documents, and applicable laws, standards, bylaws, and codes.
6. Recognize current principles and practices of the building industry.
7. Assist in the coordination of time, cost, quantity, and quality assurance of the building projects.
8. Contribute to the evaluation of building materials, and of the methods employed to implement and complete building projects.
9. Assist in solving technical problems related to building projects by applying the principles of building science.
10. Contribute to project design team activities by using principles of structural, mechanical, electrical, and civil engineering, and related disciplines.
Architectural Technology

A Three-Year Co-operative Education Diploma Program

OCAS Code: MOHA 531 F

Fennell Campus

Start date: September

The ability to create structures of all sizes, shapes and uses is one of the defining characteristics of our civilization. The conception, design, construction and on-going maintenance of such structures requires the joining together of a variety of technical and artistic abilities.

The Program

Architectural Technology is a three-year co-operative education diploma program that provides specialized training in the following areas:

- residential design and construction
- commercial design and construction
- building materials
- sustainability concepts in architecture
- structural design
- building services
- CAD drafting
- estimating and contracts
- construction management
- building codes

The Options

In the third year of the program, Architectural Technology students choose between the Design Option and the Construction Option. The Design Option focuses on building design and the skills necessary to produce working drawings and contracts. The Construction Option is for students who are seeking a career in construction supervision and/or facilities management.

Co-operative Education

In addition to the six in-school semesters, this program includes up to 12 months of paid work term opportunities. Co-operative education means that graduates have real life work experience in the architectural field. Co-operative Services works with each student to develop program related work opportunities; however, co-op jobs cannot be guaranteed and are subject to labour market conditions.

The Career Opportunities

Graduates from this program are working across Canada in both the private and public sectors. In the private sector, graduates have found employment with architectural firms, construction management companies, engineering firms, design/build contractors, building products manufacturers and retailers. Some graduates create their own company. In the public sector, graduates are working for municipal, provincial and federal governments and agencies.

Work as part of a design team to produce building plans and specifications. Assist architects and engineers to turn design sketches and structural calculations into workable plans and construction drawings. Combine technology, building science, construction techniques and building materials to create structures that define our society. Manage human, material and financial resources on construction sites to meet strict project schedules and cost estimates. A career in architectural technology is waiting for you!

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:

- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent*
- Grade 11 Physics and Grade 10, 11 or 12 Design Technology recommended

Options are available for mature applicants. Please contact Admissions for more information.
* Applicants that do not satisfy minimum requirements will be provided an alternate offer to Pre-Technology (BCS Foundations) as a pathway to their desired program. Successful graduates from this program will be considered for transfer credits into their original program choice. Applicants that would like to challenge the math requirements may do so by writing a Pre-admission assessment test for a fee. Some conditions apply.

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis.

**Professional Affiliation**
Ontario Association of Certified Technicians and Technologists (OACETT)
Association of Architectural Technologists of Ontario (AATO)
Ontario Association of Applied Architectural Sciences (OAAAS)
Ontario Institute of Quantity Surveyors (OIQS)
Canadian Construction Association (CCA)

**Degree Completion and Articulation Agreements**
Athabasca University, Alberta, Canada (B.A.)
University of Western Sydney, Nepean, Australia (B.A., B.Sc.)
Carleton University, Ottawa, Canada (B.Arch)
McMaster University, Hamilton, Canada (B. Technology – Civil Engineering Infrastructure)

For others please see http://www.mohawkcollege.ca/Discover/choose/degreeOpportunities.html

**The Program of Studies**
The following details the existing program of studies (POS) for the Architectural Technology Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. Note that there is co-op opportunity for those students who meet the academic requirements of Co-operative Education. For the co-op rotation refer to the Co-operative Education section of this handbook.

<table>
<thead>
<tr>
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<tr>
<td>CADM</td>
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<td>ENVR</td>
<td>EA204 Environmental Technology</td>
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<td>MS171 Mathematics</td>
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<td>SURV</td>
<td>EA141 Surveying 1</td>
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<td>TDRW</td>
<td>EA106 Drafting Fundamentals &amp; Standards</td>
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<td>11040 Communications D</td>
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**Total Hours/Week** 22
### ACADEMIC SEMESTER 2

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<tr>
<td>CADM</td>
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<td>MATH</td>
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<td>PHYS</td>
<td>EA201</td>
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Total Hours/Week: 24

### ACADEMIC SEMESTER 3

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<td>BLDG</td>
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<td>AR363</td>
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<td>BLDG</td>
<td>AR435</td>
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<td>BLDG</td>
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<tr>
<td>LAWS</td>
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Total Hours/Week: 22

### ACADEMIC SEMESTER 4

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<tr>
<td>BLDG</td>
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<tr>
<td>BLDG</td>
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<td>BLDG</td>
<td>AR535</td>
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<tr>
<td>BLDG</td>
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<tr>
<td>LAWS</td>
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Total Hours/Week: 22
### 3rd Year DESIGN OPTION

#### ACADEMIC SEMESTER 5

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<tbody>
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<td>BLDG AR525</td>
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<tr>
<td>BLDG AR545</td>
<td>Commercial Construction (Design)</td>
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<tr>
<td>BLDG AR562</td>
<td>Architectural Design</td>
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<tr>
<td>BLDG AR635</td>
<td>Commercial Bldg. Systems Design</td>
<td>3</td>
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<tr>
<td>BLDG AR700</td>
<td>Architectural Computer Visualization</td>
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<td>OPEL XXXXX</td>
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<tr>
<td>SSCI MP125</td>
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**Total Hours/Week** 21

#### ACADEMIC SEMESTER 6

<table>
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<tr>
<td>BLDG AR625</td>
<td>Structural Design 4</td>
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<tr>
<td>BLDG AR645</td>
<td>Interior Construction &amp; Finishes</td>
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<td>BLDG EA635</td>
<td>Commercial Bldg. Systems</td>
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<td>BUSN BA107</td>
<td>Entrepreneurial Training</td>
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<tr>
<td>LAWS AR675</td>
<td>Contracts &amp; Economics 3</td>
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<tr>
<td>TDRW AR662</td>
<td>Contract Doc Prep &amp; Presentation</td>
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**Total Hours/Week** 20

### 3rd Year CONSTRUCTION OPTION

#### ACADEMIC SEMESTER 5

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<tr>
<td>BLDG EA501</td>
<td>Structural Design 3</td>
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<tr>
<td>BLDG EA521</td>
<td>Sustainable Design &amp; Bldg. Practice</td>
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<tr>
<td>BLDG EA545</td>
<td>Commercial Construction</td>
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<tr>
<td>CADM EA531</td>
<td>Construction Comp. Applications</td>
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<td>MGMT EA541</td>
<td>Construction Management 1</td>
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<td>OPEL XXXXX</td>
<td>General Education (Elective)</td>
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<tr>
<td>SSCI MP125</td>
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**Total Hours/Week** 23
### ACADEMIC SEMESTER 6

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<tr>
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<td>BLDG</td>
<td>Interior Construction &amp; Finishes</td>
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<td>BUSN</td>
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<td>LABR</td>
<td>Canadian Human &amp; Labour Relations</td>
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Total Hours/Week: 18

Many courses in Architectural Technology have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through CE please contact the BCS department for an appointment 905-575-2251.

**Architectural Technology Provincial MTCU Vocational Standards**

1. communicate with clients, contractors, other building professionals, and approval authorities.
2. prepare, read, interpret, and revise drawings, and other graphical representations used in building projects.
3. obtain, analyze, prepare, and revise specifications* and other project documents used in design* and construction.
4. prepare estimates of time, costs, and quantity, and participate in the tendering process.
5. solve technical problems related to building projects through the application of principles of building science* and mathematics.
6. collaborate with and coordinate information from structural, mechanical, and electrical building systems professionals.
7. contribute to the design* of architectural projects.
8. contribute to the analysis, planning, and preparation of site planning documents.
9. comply with the legal and ethical requirements of an architectural technologist in the practice of building design* and construction.
10. assess buildings and their interiors, and make recommendations for their repurposing and renovation.
11. ensure personal safety and contribute to the safety of others in the workplace.
12. participate in sustainable design* and building practices.
13. use and evaluate current and emerging technology to support building projects.
14. assist in the planning, scheduling, and monitoring of building projects.
15. apply business principles to design* and building practices.
Building Renovation Technician
A Two-Year Diploma Program
OCAS Code: MOHA 462
STARRT Institute and Fennell Campus
Start Date: September

Men and women working as technicians and skilled workers in the construction sector have a great influence on the health, safety, mobility, and standard of living that we enjoy. Through their efforts a unique blend of art, science and technology is used to service the many needs of society.

The Program

Building Renovation Technician is a two-year diploma program that provides specialized training in the following areas:

- structural renovations
- interior and exterior finishes
- cabinetry and millwork
- commercial construction and renovation
- building materials, and codes
- hand and power tools
- plan reading and design
- project management and sustainable construction
- entrepreneurship

Graduates from this program will receive a diploma entitled “Construction Engineering Technician – Building Renovation”.

A “Hands-On” Education

The Building Renovation Technician program consists of four in-school semesters. The curriculum is heavily lab and applications oriented to prepare the graduate for the working world. The Building Renovation Technician is designed to prepare you to venture into this exciting and entrepreneurial career path. Graduates may choose to work for an existing company, start their own business or continue to upgrade their skills by seeking an apprenticeship or continuing in a second diploma program. Participate in a community project funded by the Ontario Trillium Foundation in the winter semester involving the renovation of a local building.

The Career Opportunities

- Develop skills and training required to join the entrepreneurial trend of do-it-yourself (DIY) home and commercial renovation.
- Acquire specialized training in carpentry hand and power tools, construction materials, wood and wood products, interior and exterior finishes, and workplace safety.
- Apply construction and project management principles to renovation projects including project scheduling, materials resourcing, cost estimating, risk analysis, sub-contracting, cost control strategies and project closeout.
- Understand the importance of integrated waste management and incorporate the 3R’s (reduce, reuse, recycle) into renovation projects.
- Explore design styles, architectural history, interior finishes, and cabinetry, millwork and lighting systems.
- Acquire practical knowledge and skills needed to operate a small business.

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:

- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, C (MCT4C recommended) or U
• Grade 10, 11 or 12 Construction and Design Technology courses recommended

Options are available for mature applicants. Please contact Admissions for more information. Applicants who do not meet the admission requirements may be made an offer for PreTechnology (BCS Foundations). Upon successful completion of the PreTechnology program, applicants may then reapply for Building Renovation.

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s office at (905) 575-2251 for more information about advanced standing.

**Professional Affiliations**

Ontario Association of Certified Technicians and Technologists (OACETT)
Canadian Construction Association (CCA)

**The Program of Studies**

The following details the existing program of studies (POS) for the Building Renovation Technician Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. Graduates from this program will receive a college diploma entitled “Construction Engineering Technician – Building Renovation”.

Courses for this program require facilities and classrooms at both the Fennell and STARRT campuses, and student must be able to attend both sites.

<table>
<thead>
<tr>
<th>ACADEMIC SEMESTER 1</th>
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<tbody>
<tr>
<td><strong>Course #</strong></td>
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<tr>
<td>BLDG 10025</td>
<td>Structural Renovations – Practical</td>
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<td>BLDG 10026</td>
<td>Structural Renovations – Theory</td>
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<td>MATH MS144</td>
<td>Math for Construction Technician</td>
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<td>SAFE 10037</td>
<td>Health &amp; Safety in our Environment</td>
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<td>COMM 11040</td>
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<td><strong>Course #</strong></td>
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<tr>
<td>BLDG 10032</td>
<td>Building &amp; Renovation Practical 2</td>
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<td>BLDG 10033</td>
<td>Building &amp; Renovation Theory 2</td>
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<td>Building &amp; Renovation Practical 3</td>
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<td>BLDG 10029</td>
<td>Building &amp; Renovation Theory 3</td>
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<td>BLDG 10030</td>
<td>Sustainable Construction</td>
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<td>BLDG 10031</td>
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<td>COMM 10265</td>
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<td>MGMT CN340</td>
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**Total Hours/Week**: 22

### ACADEMIC SEMESTER 4

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<td>Design Styles</td>
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<td>BLDG 10034</td>
<td>Building &amp; Renovation Theory 4</td>
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**Total Hours/Week**: 20

Some courses in Building Renovation Technician have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through CE please contact the BCS School for an appointment 905-575-2251. Applicants who are interested in completing both the Construction Engineering Technician and Building Renovation Technician diplomas should first take the Building Renovation Technician program. They are then granted direct entry into semester 3 of Construction Engineering Technician.

**Building Renovation Technician Provincial MTCU Vocational Standards**

1. collect, interpret, and appropriately apply information from past construction projects including graphics, reports, performance and productivity analyses, and other documents.
2. assist in the preparation of accurate estimates of time, cost, quality and quantity; tenders; and bids.
3. contribute to the collecting, processing, interpreting, and applying of survey and layout information related to construction projects.
4. communicate construction project-related information effectively and accurately by interpreting and producing data in graphic, oral, and written formats.
5. work according to contractual obligations; the project manual; and applicable law, standards, bylaws, and codes.
6. work in compliance with the theory and the accepted principles and practices of the construction industry.
7. assist in the coordination of time, cost, quantity, and quality performance for construction projects.
8. contribute to the evaluation of equipment use, materials, and of the methods employed to implement and complete construction projects.
9. contribute to the maintenance of project records, logs, and inventories.
10. apply the principles of building science and construction engineering to assist in solving technical problems related to construction projects.
11. recognize the interdependence of disciplines including architectural, structural, mechanical, electrical, and civil engineering, and others relating to construction projects. cooperate with the project stakeholders involved in the design, implementation, and evaluation of construction projects.
12. contribute to the human resource management of construction projects.
13. use electronic technology to support construction projects.
Civil Engineering Technician
A Two-Year Diploma Program
OCAS Code: MOHA 421
Fennell Campus
Start date: September

Men and women working as technicians in the civil engineering field have a great influence on the health, safety, mobility and standard of living that we enjoy. Through their efforts a unique blend of art, science and technology is used to service the many needs of society.

The Program

Civil Engineering Technician is a two-year diploma program that provides specialized training in the following areas:
- municipal services
- engineering and construction surveys
- roadway design and construction
- construction and building materials
- sustainability concepts in civil engineering
- CAD drafting and detailing
- soils, concrete, and asphalt

A “Hands-On” Education

The Civil Engineering Technician program consists of four in-school semesters. The curriculum is heavily lab and applications oriented to prepare the graduate for the working world. The civil engineering technician is a vital and respected participant in the design, drafting, construction and inspection components of any civil engineering project.

The Career Opportunities

Graduates from this program are working across Canada in both the private and public sectors. They are involved in every aspect of the civil engineering and construction industry including planning, design, estimating, construction, inspection and quality control management, purchasing and sales. In the private sector use your CAD skills to prepare detailed construction plans and specifications for concrete and steel works, roadways, buildings, water supply systems, storm and sanitary sewers. Participate in inspection and supervision of construction projects. Ensure that construction materials and techniques match the industry standards. Become involved in total station surveying and building layout.

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:
- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent*
- Grade 10, 11 or 12 Design Technology recommended

Options are available for mature applicants. Please contact Admissions for more information.

*Applicants that do not satisfy minimum requirements will be provided an alternate offer to Pre-technology (BCS Foundations) Certificate program as a pathway to desired program. Successful graduates from this program will be considered for transfer credits into their original program choice. Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean's office at (905) 575-2251 for more information about advanced standing.

Professional Affiliations
Ontario Association of Certified Technicians and Technologists (OACETT)
Ontario Good Roads Association (OGRA)
The Program of Studies

The following details the existing program of studies (POS) for the Civil Engineering Technician Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook.

**ACADEMIC SEMESTER 1**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADM</td>
<td>CV203</td>
<td>3</td>
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<tr>
<td>COMP</td>
<td>CO001</td>
<td>2</td>
</tr>
<tr>
<td>ENVR</td>
<td>EA204</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>MS171</td>
<td>4</td>
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<tr>
<td>SURV</td>
<td>EA141</td>
<td>4</td>
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<tr>
<td>TDRW</td>
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<td>COMM</td>
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<td>COMM</td>
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*Options: Select 1*

**Total Hours/Week**

22

**ACADEMIC SEMESTER 2**

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<th>Course Title</th>
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<td>BLDG</td>
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<tr>
<td>CADM</td>
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<td>ENVR</td>
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<tr>
<td>LAWS</td>
<td>CN240</td>
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<td>MATH</td>
<td>MS248</td>
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<tr>
<td>MATL</td>
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**Total Hours/Week**

21

**ACADEMIC SEMESTER 3**

<table>
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<tr>
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<th>Course Title</th>
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**Total Hours/Week**

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ACADEMIC SEMESTER 4

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<tbody>
<tr>
<td>CADM</td>
<td>CV406 Structural Detailing 2</td>
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<tr>
<td>CADM</td>
<td>CV414 Highway Technology 2</td>
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<td>COMM</td>
<td>10265 Critical &amp; Innovative Thinking</td>
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<td>ENVR</td>
<td>CV420 Municipal Services 2</td>
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<td>MGMT</td>
<td>CN340 Construction Management A</td>
<td>4</td>
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Many courses in Civil Engineering Technician have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through CE please contact the BCS School for an appointment 905-575-2251. Students wishing to complete both the Civil and Architectural Technician diplomas should first complete one program and then apply for direct entry into semester 3 of the second diploma.

Civil Engineering Technician Provincial MTCU Vocational Standards

1. Collect and appropriately apply civil engineering data from existing graphics, reports, and other documents.
2. Contribute to the collection, processing, and interpretation of technical data related to civil engineering projects.
3. Communicate information effectively and accurately by interpreting, translating, and producing civil engineering documents.
4. Complete all work in compliance with the rights and conditions of contractual obligations; applicable law, standards, bylaws, and codes; and the accepted principles and practices of civil engineering.
5. Monitor the quality and quantity of work for civil engineering projects.
6. Contribute to the evaluation of equipment, materials, and methods employed in the implementation and completion of civil engineering projects.
7. Contribute to the evaluation of equipment, materials, and methods employed in the implementation and completion of civil engineering projects.
8. Use electronic technology to support civil engineering projects.
9. Apply the principles of mathematics and science to analyze and solve technical problems related to civil engineering projects.
10. Maintain civil engineering project records, logs, and inventories.
11. Contribute to the assessment of the political, social, and environmental impacts of civil engineering projects.
12. Recognize the interdependence of the architectural, structural, mechanical, and electrical disciplines relating to civil engineering projects.
13. Facilitate communication among project stakeholders involved in the design and implementation of civil engineering projects.
14. Develop and use personal and professional strategies and plans to enhance professional growth and competence.
Civil Engineering Technology
A Three-Year Co-operative Education Diploma Program
OCAS Code: MOHA 534
Fennell Campus
Start date: September

Men and women working as technologists in the civil engineering field have a great influence on the health, safety, mobility and standard of living that we enjoy. Through their efforts a unique blend of art, science and technology is used to service the many needs of society.

The Program
Civil Engineering Technology is a three-year co-operative education diploma program that provides specialized training in the following areas:

- municipal services: water; storm water; wastewater
- engineering and construction surveys
- roadway design, construction and inspection
- structural design
- construction and building materials
- sustainable concepts in civil engineering
- CAD drafting
- geotechnical services
- construction and law management

Co-operative Education
In addition to the six in-school semesters, this program includes up to 12 months of paid work term opportunities. Co-operative education means that graduates have real life work experience in the civil field. Co-op Services works with each student to develop program related work opportunities; however, co-op jobs cannot be guaranteed and are subject to labour market conditions.

The Career Opportunities
Graduates from this program are working across Canada in both the private and public sectors. In the private sector, graduates have found employment with general contractors, engineering firms, architectural firms, construction management companies, construction and building product manufacturers and retailers. In the public sector, graduates are working for municipal, provincial and federal governments and agencies.

Civil engineering is considered by many to be the root of all the various engineering specialties. Learn how to survey using the most up-to-date total station and Global Positioning Systems survey equipment. Design crucial environmental services such as water supply systems, stormwater sewers, and sanitary sewers. Be involved in the structural design of bridges, buildings, roadways, culverts and other structures. Examine construction materials including concrete, steel, wood, asphalt and aggregates to ensure they meet specifications. Get involved in construction management and inspection. Design roadways and other structures using appropriate standards and software. A career as a Civil Engineering Technologist is waiting for you!

Admission to the Program
OSSD or equivalent (GED, College and Career Preparation) including:
- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent*
- Grade 10, 11 or 12 Design Technology recommended
Options are available for mature applicants. Please contact Admissions for more information.
Applicants that do not satisfy minimum requirements will be provided an alternate offer to Pre-technology (BCS Foundations) Certificate program as a pathway to their desired program. Successful graduates from this program will be considered for transfer credit into their original program choice.

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s office at (905) 575-2251 for more information about advanced standing.

**Professional Affiliations**

Ontario Association of Certified Technicians and Technologists (OACETT)
Transportation Association of Canada (TAC)
Ontario Good Roads Association (OGRA)
Canadian Construction Association (CCA)

**Degree Completion and Articulation Agreements**

Lakehead University, Ontario, Canada (B.Eng.)
Athabasca University, Alberta, Canada (B.A.)
University of Western Sydney, Nepean, Australia (B.A., B.Sc.)
McMaster University, Hamilton, Canada (B.Technology – Civil Engineering Infrastructure)

**The Program of Studies**

The following details the existing program of studies (POS) for the Civil Engineering Technology Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. Note that there is co-op opportunity for those students who meet the academic requirements of Co-operative Education. For the co-op rotation refer to the Co-operative Education section of this handbook.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
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</thead>
<tbody>
<tr>
<td>CADM</td>
<td>CV203</td>
<td>CAD A</td>
</tr>
<tr>
<td>COMP</td>
<td>CO001</td>
<td>Generic Computer Training</td>
</tr>
<tr>
<td>ENVR</td>
<td>EA204</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td>MATH</td>
<td>MS171</td>
<td>Mathematics</td>
</tr>
<tr>
<td>SURV</td>
<td>EA141</td>
<td>Surveying 1</td>
</tr>
<tr>
<td>TDRW</td>
<td>EA106</td>
<td>Drafting Fundamentals &amp; Standards</td>
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<tr>
<td>COMM</td>
<td>11040</td>
<td>Communications D</td>
</tr>
<tr>
<td>COMM</td>
<td>LL041</td>
<td>Communication</td>
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Total Hours/Week: 22

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BLDG</td>
<td>EA202</td>
<td>Estimating 1</td>
</tr>
<tr>
<td>CADM</td>
<td>CV206</td>
<td>CAD B</td>
</tr>
<tr>
<td>ENVR</td>
<td>10032</td>
<td>Green Building Fundamentals</td>
</tr>
<tr>
<td>MATH</td>
<td>MS271</td>
<td>Mathematics</td>
</tr>
<tr>
<td>MATL</td>
<td>EA102</td>
<td>Construction Materials 1</td>
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<tr>
<td>PHYS</td>
<td>EA201</td>
<td>Applied Mechanics 1</td>
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<tr>
<td>TRAN</td>
<td>EA105</td>
<td>Transportation Technology</td>
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### ACADEMIC SEMESTER 3

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<tbody>
<tr>
<td>BLDG</td>
<td>EA301 Structural Design 1</td>
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<tr>
<td>ENVR</td>
<td>CV303 Municipal 1</td>
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<tr>
<td>LAWS</td>
<td>CV304 Engineering Law</td>
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<td>MATL</td>
<td>CV301 Materials 2</td>
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<tr>
<td>SURV</td>
<td>CV346 Surveying 2</td>
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Total Hours/Week: 21

### ACADEMIC SEMESTER 4

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<tr>
<td>BLDG</td>
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<tr>
<td>CADM</td>
<td>CV401 CAD for Civil Engineering</td>
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<tr>
<td>ENVR</td>
<td>CV403 Municipal 2</td>
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<tr>
<td>MATH</td>
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<tr>
<td>MATL</td>
<td>CV404 Geotech 1</td>
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<tr>
<td>TRAN</td>
<td>CV571 Highway Technology A</td>
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Total Hours/Week: 22

### ACADEMIC SEMESTER 5

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<th>Course Title</th>
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<tbody>
<tr>
<td>BLDG</td>
<td>EA501 Structural Design 3</td>
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<td>COMM</td>
<td>10265 Critical &amp; Innovative Thinking</td>
<td>2</td>
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<tr>
<td>ENVR</td>
<td>CV503 Municipal 3</td>
<td>4</td>
</tr>
<tr>
<td>INFO</td>
<td>CVA03 Introduction to GIS</td>
<td>3</td>
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<tr>
<td>MATL</td>
<td>CV504 Geotech 2</td>
<td>4</td>
</tr>
<tr>
<td>OPEL</td>
<td>XXXXX General Education (Elective)</td>
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</tbody>
</table>

Total Hours/Week: 19
Many courses in Civil Engineering Technology have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through CE please contact the BCS School for an appointment 905-575-2251.

**Civil Engineering Technology Provincial MTCU Vocational Standards**

1. Assemble, analyze, and appropriately apply civil engineering data from existing graphics, reports, and other documents.
2. Coordinate and facilitate in collection, processing, and interpretation of technical data related to civil engineering projects.
3. Communicate information effectively and accurately by analyzing, translating, and producing civil engineering documents.
4. Monitor that all work is completed in compliance with the rights and obligations; applicable law, standards, bylaws, and codes; and the accepted principles and practices of civil engineering.
5. Schedule and coordinate civil engineering projects and monitor the quality and quantity of work.
6. Assist in planning, designing, inspecting, supervising, and constructing civil engineering projects.
7. Evaluate the methods employed and the use of equipment and materials involved in the implementation and completion of civil engineering projects.
8. Use electronic technology to support civil engineering projects.
9. Apply the principles of mathematics and science to analyze and solve technical problems related to civil engineering projects.
10. Manage and maintain systems for civil engineering project records, logs, and inventories.
11. Assist in the assessment of the political, social, and environmental impacts of civil engineering projects.
12. Take into account the interdependence of the architectural, structural, mechanical, and electrical disciplines relating to civil engineering projects.
13. Facilitate liaison among project stakeholders involved in the design and implementation of civil engineering projects.
14. Develop and use personal and professional strategies and plans to enhance professional growth and competence.
Construction Engineering Technician

A Two-Year Diploma Program
OCAS Code: MOHA 451
STARRT Institute and Fennell Campus
Start date: September

Men and women working as technicians and skilled workers in the construction sector have a great influence on the health, safety, mobility, and standard of living that we enjoy. Through their efforts a unique blend of art, science and technology is used to service the many needs of society.

The Program

Construction Engineering Technician is a two-year diploma program that provides specialized training in the following areas:

- construction and building materials
- hand and power tools
- basic carpentry and plumbing skills
- estimating and project management
- building codes
- engineering and construction surveys
- residential and commercial construction
- CAD drafting and plan reading
- aggregates, concrete and asphalt

A “Hands-On” Education

The Construction Engineering Technician program consists of four in-school semesters. The curriculum is heavily lab and practically oriented to prepare the graduate for the working world. The program includes basic carpentry and plumbing apprenticeship skills, enabling a graduate to seek an apprenticeship in the carpentry or plumbing trade. Graduates choosing this career path will can challenge the exemption test for the basic in-school curriculum portion of their apprenticeship training.

The Career Opportunities

The construction engineering technician is a vital and respected member of the construction team. Graduates from this program are working across Canada in both the private and public sectors. They are involved in every aspect of the construction industry including planning, design, estimating, construction, inspection and sales. Assist in the preparation of contract documents and estimates. Use your CAD skills to prepare and read detailed construction plans and schedules. Participate in inspection and supervision of large and small construction projects. Ensure that construction materials and techniques match the industry standards. Monitor the costs and schedules of projects. Become involved in surveying and construction layout, sewer and water systems, road and building construction, and quality control of construction projects.

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:
- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, C (MCT4C recommended) or U
- Grade 10, 11 or 12 Construction Technology courses recommended

Options are available for mature applicants. Please contact Admissions for more information. Applicants who do not meet the admission requirements may be made an offer for PreTechnology (BCS Foundations). Upon successful completion of the PreTechnology program, applicants may then reapply for Construction Engineering Technician.
Application deadlines for first year applicants may be found on the OCAS website www.ontarioccolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s office at (905) 575-2251 for more information about advanced standing.

Professional Affiliations

Ontario Association of Certified Technicians and Technologists (OACETT)
Canadian Construction Association (CCA)
Canadian Institute of Quantity Surveyors (CIQS)

The Program of Studies

The following details the existing program of studies (POS) for the Construction Engineering Technician Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. Courses for this program require facilities and classrooms at both the Fennell and STARRT campuses, so student must be able to attend both sites.

<table>
<thead>
<tr>
<th>ACADEMIC SEMESTER 1</th>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
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<tr>
<td>BLDG CN120</td>
<td>Technical Skills Theory 1</td>
<td>3</td>
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<td>BLDG CN130</td>
<td>Technician Skills Lab 1</td>
<td>6</td>
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<tr>
<td>BLDG CN210</td>
<td>Plan Reading</td>
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<tr>
<td>COMP CO001</td>
<td>Generic Computer Training</td>
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<tr>
<td>MATH MS144</td>
<td>Math for Construction Technicians</td>
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<td>MATL CN110</td>
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<td>CADM CV203</td>
<td>CAD A</td>
<td>3</td>
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<td>ENVR CN230</td>
<td>Municipal Government Services</td>
<td>3</td>
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<td>LAWS CN240</td>
<td>Ontario Building Code</td>
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<td>MATH MS244</td>
<td>Math 2 – Construction Technician</td>
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<td>BLDG CN310</td>
<td>Technician Skills Theory 2</td>
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<td>BLDG CN320</td>
<td>Technician Skills Lab 2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>BLDG CN330</td>
<td>Construction &amp; Est 1 – Residential</td>
<td>3</td>
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<tr>
<td>MGMT CN340</td>
<td>Construction Management A</td>
<td>4</td>
<td></td>
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<tr>
<td>SURV CN350</td>
<td>Surveying and Layout</td>
<td>4</td>
<td></td>
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<tr>
<td><strong>Total Hours/Week</strong></td>
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<td><strong>23</strong></td>
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</table>
Many courses in Construction Engineering Technician have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through CE please contact the BCS School for an appointment 905-575-2251. Students wishing to complete both the Construction Engineering Technician and the Building Renovation Technician diploma should first complete the Building Renovation Technician and then apply for direct entry into semester 3 of the Construction Engineering Technician diploma.

### Construction Engineering Technician Provincial MTCU Vocational Standard

1. Collect, interpret, and appropriately apply information from past construction projects including graphics, reports, performance and productivity analyses, and other documents.
2. Assist in the preparation of accurate estimates of time, cost, quality and quantity, tenders, and bids.
3. Contribute to the collecting processing, interpreting, and applying of survey and layout information related to construction projects.
4. Communicate construction project-related information effectively and accurately by interpreting and producing data in graphic, oral, and written formats.
5. Working according to contractual obligations, the project manual, and applicable law, standards, bylaws and codes.
6. Work in compliance with the theory and the accepted principles and practices of the construction industry.
7. Assist in the coordination of time, cost, quality or performance for construction projects.
8. Contribute to the evaluation of equipment use, materials and methods employed to implement and complete construction projects.
9. Contribute to maintenance of project records, logs, and inventories.
10. Apply the principles of building science and construction engineering to assist in solving technical problems related to construction projects.
11. Recognize the interdependence of disciplines including architectural, structural, mechanical, electrical, and civil engineering, and others relating to construction projects.
12. Cooperate with the project stakeholders involved in the design, implementation, and evaluation of construction projects.
13. Contribute to the human resource management of construction projects.
14. Use electronic technology to support construction projects.
Pre-Technology (BCS Foundations)
A One-Year College Certificate
OCAS CODE: MOHA 341 F
Fennell Campus
Start date: September

Students in this program will explore a variety of engineering and technology specialties at the college level. This program is designed for Secondary School graduates who have not completed the Science or Mathematics requirements for technician/technology diploma programs; or for those applicants who are looking to explore the many career pathways that are available in the infrastructure industry and the built environment.

The Program

Students in the program will improve their Math, Science, Computer and Communication skills prior to entering a technician or technology diploma program.

Diploma Specific Pre-Technology Certificate Programs

The Pre-Technology program offers customized course deliveries suited to prepare students for success in the BCS Diploma programs. This unique program offering allows students to complete core courses from a variety of Engineering Technology diploma programs while enhancing their math, science, computer and communication skills. This certificate program is ideally suited for students who have not completed a Grade 12 technical math course as required for admission to many diploma programs. In most cases graduates of the Pre-Technology certificate program will carry transfer credits to the following year and lessen their workload in future semesters.

Further Diploma Opportunities

- Architectural Technician Diploma Program
- Architectural Technology Advanced Diploma Program
- Civil Engineering Technician Diploma Program
- Civil Engineering Technology Advanced Diploma Program
- Transportation Engineering Technology Advanced Diploma Program
- Urban & Regional Planning Technician
- Construction Engineering Technician
- Construction Engineering Technician – Building Renovations

Admission to the Program

Ontario Secondary School Diploma (or equivalent) with the following specific minimum requirements:

- Grade 12 English, C or U equivalent
- Grade 11 Mathematics, C,M or U level or equivalent

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s office at (905) 575-2251 for more information about advanced standing.

The Program of Studies

The following details the existing program of studies (POS) for the Pre-Technology Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this
<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
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<tbody>
<tr>
<td>CHEM PE106</td>
<td>Preparatory Chemistry</td>
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<tr>
<td>COMP 10098</td>
<td>Fundamental Computer Skills 1</td>
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<td>CRED 10019</td>
<td>Career Education – Pre-Technology</td>
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<tr>
<td>ENVR EA204</td>
<td>Environmental Technology</td>
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<tr>
<td>MATH MA006</td>
<td>Mathematics 1</td>
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Total Hours/Week 17

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<td>COMP 10099</td>
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<td>ENVR 10032</td>
<td>Green Building Fundamentals</td>
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<tr>
<td>MATH MA018</td>
<td>Mathematics 2</td>
<td>3</td>
</tr>
<tr>
<td>PHYS PE108</td>
<td>Preparatory Physics (GAS)</td>
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<tr>
<td>TDRW EA107</td>
<td>Engineering Graphics</td>
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<tr>
<td>TRAN EA105</td>
<td>Transportation Technology</td>
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</table>

Total Hours/Week 19

For more information about completing part of the program of studies on a part time basis through Continuing Education please contact the BCS School for an appointment 905-575-2251.
Transportation Engineering Technology
A Three-Year Co-operative Education Diploma Program
OCAS Code: MOHA 543
Fennell Campus
Start Date: September

The movement of people and goods in a safe, efficient, sustainable and convenient manner is one of the most significant challenges our society faces. The professionals who are responsible for the planning, design and operation of our modern day transportation systems are constantly working towards the major goals of safety, efficient mobility, and sustainability.

The Program

Transportation Engineering Technology is a unique three-year co-operative education diploma program that provides specialized training in the following areas:

- transportation network and site planning
- roadway and intersection design
- public transportation systems
- traffic engineering and operations
- sustainability concepts in transportation engineering
- CAD drafting
- traffic studies and data collection
- traffic control devices
- traffic management strategies

Co-operative Education

In addition to the six in-school semesters, this program includes up to 12 months of paid work term opportunities. Co-operative education means that graduates have real life work experience in the transportation engineering field. Co-op Services works with each student to develop program related work opportunities; however, co-op jobs cannot be guaranteed due to labour market conditions.

The Career Opportunities

Graduates from this program are working across Canada in both the private and public sectors. In the private sector, graduates are working for engineering consulting firms, land developers, general contractors, product manufacturers and retailers. In the public sector, graduates are working for municipal, provincial and federal governments and agencies.

Examine trends in land use, population growth and traffic movement to determine where new roadways and transportation facilities are required now and in the future. Develop a transportation network that combines cars, trucks, bikes, buses, streetcars, subways, and trains into a multi-modal system. Design streets and highways to handle traffic demands in both rural and urban settings. Ensure the safe and efficient flow of traffic and pedestrians. Analyze traffic operations on roadways to identify problems and recommend solutions. Examine motor vehicle collisions to determine the causes and implement solutions. Use signs, pavement markings, and signals to control vehicles and pedestrian traffic. Investigate and respond to public and political inquiries about traffic operations on proposed and existing transportation systems.

Admission to the Program

OSSD or equivalent (GED, College and Career Preparation) including:
- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent*
Grade 11 Physics and Grade 10, 11 or 12 Design Technology recommended

Options are available for mature applicants. Please contact Admissions for more information.

* Applicants that do not satisfy minimum requirements will be provided an alternate offer to Mohawk’s Pre-technology (BCS Foundations) Certificate Program as a pathway to their desired program. Successful graduates from this program will be considered for transfer credits into their original program choice.

Applicants that would like to challenge the math requirements may do so by writing a Pre-admission assessment test for a fee. Some conditions apply.

Application deadlines for first year applicants may be found on the OCAS website www.ontariocollege.ca. Applicants with applicable work experience and/or post-secondary education will be considered for advanced standing on an individual basis. Contact the Associate Dean’s (905) 575-2251 for more information about advanced standing.

Professional Affiliations

Ontario Association of Certified Technicians and Technologists (OACETT)
Transportation Association of Canada (TAC)
Canadian Institute of Transportation Engineers (CITE)
Canadian Urban Transit Association (CUTA)

Degree Completion and Articulation Agreements

Athabasca University, Alberta, Canada (B.A.)
University of Western Sydney, Nepean, Australia (B.A., B.Sc.)
Graduates may be considered for the McMaster-Mohawk B. Tech Degree completion in Civil Engineering Infrastructure. See the Associate Dean for details.

The Program of Studies

The following details the existing program of studies (POS) for the Transportation Engineering Technology Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. Note that there is co-op opportunity for those students who meet the academic requirements of Co-operative Education. For the co-op rotation refer to the Co-operative Education section of this handbook.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Hours/Week</th>
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<tr>
<td>CADM</td>
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<td>CAD A</td>
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<td>COMP</td>
<td>CO001</td>
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<td>ENNR</td>
<td>EA204</td>
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<td>MATH</td>
<td>MS171</td>
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<td>SURV</td>
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<td>EA106</td>
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<td>COMM</td>
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<td>COMM</td>
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<td>Communication</td>
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Total Hours/Week: 22
## ACADEMIC SEMESTER 2

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<tr>
<td>BLDG</td>
<td>EA202 Estimating 1</td>
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<tr>
<td>CADM</td>
<td>CV206 CAD B</td>
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<tr>
<td>ENVR</td>
<td>10032 Green Building Fundamentals</td>
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<tr>
<td>MATH</td>
<td>MS271 Mathematics</td>
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<tr>
<td>MATL</td>
<td>EA102 Construction Materials</td>
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<tr>
<td>PHYS</td>
<td>EA201 Applied Mechanics</td>
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<td>TRAN</td>
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**Total Hours/Week**: 24

## ACADEMIC SEMESTER 3

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<tr>
<td>COMP</td>
<td>CO318 Spreadsheets for Transportation</td>
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<tr>
<td>MATH</td>
<td>MS474 Statistics</td>
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<td>TRAN</td>
<td>TR151 Transportation Planning 1</td>
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<tr>
<td>TRAN</td>
<td>TR301 Traffic Engineering 1</td>
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<tr>
<td>TRAN</td>
<td>TR310 Traffic Studies</td>
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<tr>
<td>TRAN</td>
<td>TR462 Transportation Design 1</td>
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**Total Hours/Week**: 21

## ACADEMIC SEMESTER 4

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<td>COMM</td>
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<td>MATH</td>
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<td>TRAN</td>
<td>TR251 Transportation Planning 2</td>
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<tr>
<td>TRAN</td>
<td>TR401 Traffic Engineering 2</td>
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<tr>
<td>TRAN</td>
<td>TR593 Public Transportation</td>
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**Total Hours/Week**: 21
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<th>Course #</th>
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<tbody>
<tr>
<td>INFO</td>
<td>CVA03 Introduction to Geo Info Systems</td>
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<tr>
<td>TRAN</td>
<td>TR503 Traffic Engineering 3</td>
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<td>TRAN</td>
<td>TR552 Transportation Planning 3</td>
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<tr>
<td>TRAN</td>
<td>TR562 Transportation Design 2</td>
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<td>TRAN</td>
<td>TR592 Transportation Project 1</td>
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<tr>
<td>UPLN</td>
<td>MP126 Intro to Land Use Planning</td>
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**Total Hours/Week: 21**

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<th>Course #</th>
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<tr>
<td>COMM</td>
<td>LL571 Speech Presentations Skills</td>
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<tr>
<td>MATL</td>
<td>CV301 Materials 2</td>
<td>4</td>
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<tr>
<td>TRAN</td>
<td>10000 Traffic Engineering 4</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>TR692 Transportation Project 2</td>
<td>4</td>
</tr>
<tr>
<td>TRAN</td>
<td>10001 Active Transportation</td>
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</table>

**Total Hours/Week: 19**

Many courses in Transportation Engineering Technology have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through Cont Ed please contact the BCS School for an appointment 905-575-2251.

**Transportation Engineering Technology Vocational Standards**

1. Utilize a project management process to undertake transportation planning, design, engineering and operational projects.
2. Assemble, analyze, and appropriately apply transportation engineering data from existing graphics, reports, and other documents.
3. Coordinate and facilitate the collection, processing and interpretation of technical data related to transportation engineering projects.
4. Apply the principles and characteristics of human and vehicular traffic to the planning, design, construction, operation, analysis of transportation facilities.
5. Evaluate and develop transportation planning and management strategies for improvements to transportation facilities.
6. Apply knowledge of current legislation, technical and industry standards and the accepted principles and practices of transportation engineering to ensure all work is in compliance.
7. Communicate information effectively and accurately by analyzing, translating, and producing transportation engineering reports and presentations.
8. Apply the principles of mathematics and science to analyse and solve technical problems related to transportation engineering projects.
9. Manage and maintain systems for transportation engineering facility and project records, logs and inventories.
10. Use electronic technology to support the planning, design, operation and management of transportation facilities and projects.
11. Assess the impact of political, social, economic and environmental factors on transportation engineering facilities and projects.
12. Take into account the interdependence of urban planning, civil engineering, construction engineering, architectural and other engineering disciplines that will impact or be impacted by transportation engineering projects and facilities.
13. Facilitate liaison among the project stakeholders involved in the planning, design, implementation and operation of transportation engineering projects and facilities.
14. Develop and use personal and professional strategies and plans to enhance professional growth and competence.
Urban & Regional Planning - GIS Technician
A Two-Year Diploma Program
OCAS Code: MOHA 406
Fennell Campus
Start Date : September

Towns, cities and regions in Canada are required to be purposeful, sustainable and strategic in their management of land and population growth. The application of sound planning principles and the implementation of a recognized land development process are necessary to ensure a sustainable mix of residential, commercial, industrial and institutional land uses.

The Program
Urban & Regional Planning - GIS Technician is a two-year diploma program that provides specialized training in the following areas:

- Sustainable land use planning principles
- Planning law, process and documentation
- Geographic information systems (GIS) applications
- Subdivision design and development
- Site planning and design
- CAD drafting and presentation graphics
- Official plans and zoning bylaws
- Planning reports and public presentations

The Field Internship
The Urban & Regional Planning – GIS Technician program consists of four in-school semesters. The curriculum is applications oriented to prepare the graduate for the working world. The program also includes a three-week placement in a planning related position in the fourth semester.

The Career Opportunities
Graduates from this program are working across Canada in both the private and public sectors. In the private sector, graduates are working for planning consultants, land development companies, law offices, real estate companies and utility companies. In the public sector, graduates are working for conservation authorities, school boards, municipal, provincial and federal governments and agencies.

Get involved in the ever-changing landscape of the communities in which we live. Learn about the principles, legislation and procedures needed to take an empty parcel of land and turn it into a vibrant, sustainable and active community. Apply the latest CAD and Geographic Information Systems (GIS) software tools as you participate in the land use planning process. Be a member of the team responsible for subdivision and site design. Analyze and process applications for official plan and zoning amendments. Make a technical planning presentation on behalf of a developer to the local politicians and the public.

Admission to the Program
OSSD or equivalent (GED, College and Career Preparation) including:
- Grade 12 English, C or U or equivalent
- Grade 11 Mathematics C or U
- Grade 10, 11 or 12 Design Technology courses recommended

Options are available for mature applicants. Please contact Admissions for more information.

Application deadlines for first year applicants may be found on the OCAS website www.ontariocolleges.ca. Applicants with a university degree in a related field (i.e. geography, planning, environmental) will be considered for direct entry into second year. Direct entry students may be required to attend an assessment interview and
complete a seven-week Drafting and Planning Principles course in May/June. Contact the Program Coordinator (905) 575-1212 ext 3138 for more information about advanced standing.

**Professional Affiliations**

Canadian Association of Certified Planning Technicians (CACPT)

**Degree Completion Agreements**

Ryerson University, Toronto, Canada (B. Urban & Regional Planning)

**The Program of Studies**

The following details the existing program of studies (POS) for the Urban & Regional Planning - GIS Technician Program. This POS is reviewed on an annual basis and reflects the status of the program as of the revised date shown on the inside cover of this handbook. There is a three-week field internship in the fourth semester.

### ACADEMIC SEMESTER 1

<table>
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<tr>
<th>Course #</th>
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<th>Hours/Week</th>
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<td>BLDG UP122</td>
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<td>CADM CV203</td>
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<td>COMP CO002</td>
<td>Computer Skills for College</td>
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<tr>
<td>ENVR UP100</td>
<td>Infrastructure Systems</td>
<td>2</td>
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<tr>
<td>MATH MS122</td>
<td>Mathematics</td>
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</tr>
<tr>
<td>SSCI UP111</td>
<td>Introduction to Planning &amp; Government</td>
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</tr>
<tr>
<td>UPLN UP110</td>
<td>Data Collection and Researching</td>
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### ACADEMIC SEMESTER 2

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<tr>
<td>BLDG UP200</td>
<td>Land Registry Systems</td>
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</tr>
<tr>
<td>CADM UP222</td>
<td>Computer Graphics</td>
<td>2</td>
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<tr>
<td>INFO CVA03</td>
<td>Introduction to Geo Info Systems</td>
<td>3</td>
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<tr>
<td>LAWS UP211</td>
<td>Planning Law 1</td>
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<td>OPEL XXXXX</td>
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<td>SURV 10000</td>
<td>Geomatics</td>
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<td>UPLN UP221</td>
<td>Mapping &amp; Subdivision Design</td>
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<th>Hours/Week</th>
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<tbody>
<tr>
<td>BLDG UP321</td>
<td>Fundamentals of Urban Design</td>
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<tr>
<td>CADM UP330</td>
<td>Advanced CAD &amp; Customization</td>
<td>3</td>
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<tr>
<td>INFO UP340</td>
<td>GIS – Arcview</td>
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<td>LAWS UP311</td>
<td>Planning Law 2</td>
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<tr>
<td>UPLN UP322</td>
<td>Applied Site Planning</td>
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Total Hours/Week 23

### ACADEMIC SEMESTER 4

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<td>GIS – AutoCad Map</td>
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<td>COMM 10265</td>
<td>Critical &amp; Innovative Thinking</td>
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<td>UPLN UP411</td>
<td>Applied Planning Law</td>
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<td>UPLN UP421</td>
<td>Community Planning Design</td>
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<tr>
<td>UPLN UP422</td>
<td>Commercial Site &amp; Landscape Design</td>
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<tr>
<td>WORK UP400</td>
<td>Field Internship (3 weeks)</td>
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Total Hours/Week 18

+ The hours per week shown are for 11 weeks in the semester. Three (3) weeks of the semester are spent in the field internship, working approximately 35 hours a week.

Many courses in Urban & Regional Planning have equivalent courses offered through Continuing Education. For more information about completing part of the program of studies on a part time basis through Cont Ed please contact the BCS School for an appointment 905-575-2251.

**Urban & Regional Planning Technician Vocational Standards**

1. Utilize design and GIS software to support the development of land use plans
2. Use computer software and the internet in support of the planning environment.
3. Utilize oral, graphics and written communication skills appropriate to the profession.
4. Utilize research skills to facilitate the planning process.
5. Utilize planning legislation and processes to address planning process.
6. Create a design proposal for a functioning community.
7. Apply knowledge of land law standards to property.
8. Make conclusions and recommendations in the context of a variety of complex and technical variables.
9. Assist with client consultation in support if the planning process.
10. Conduct oneself in a professional and ethical manner.
11. Function effectively in an integrated planning environment.
ADMISSION REQUIREMENTS AND PROCEDURES

Applications for programs beginning in September must be submitted to the Ontario College Application System (OCAS) www.ontariocolleges.ca beginning on November 1. All applications received on or before February 1 are considered equally. After February 1, applications are processed on a first-come, first-serve basis. Mature applicants and direct entry applicants are considered on an individual basis.

Applicants to the majority of BCS’s diploma programs require an Ontario Secondary School Diploma or equivalent (GED, College and Career Preparation) including:

- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, U or MCT4C or MAP4C ≥ 80% or equivalent*
- Grade 11 Physics and Grade 10, 11 or 12 Design Technology recommended

Applicants to the Urban & Regional Planning - GIS Technician program require an Ontario Secondary School Diploma or equivalent with the following specific requirements:

- Grade 12 English, C or U or equivalent
- Grade 11 Mathematics C or U
- Grade 10, 11 or 12 Design Technology courses recommended

Applicants to the Construction Engineering and Building Renovation Technician program require an Ontario Secondary School Diploma or equivalent with the following specific requirements:

- Grade 12 English, C or U or equivalent
- Grade 12 Mathematics, C (MCT4C recommended) or U
- Grade 10, 11 or 12 Construction and Design Technology courses recommended

If the number of applicants for any program or program cluster exceeds the enrolment quota, the College and BCS will select applicants using secondary school Mathematics and English grades as the primary criteria for admission. Following screening for academic requirements, selected applicants will be offered admission as early as February 1.

For all of its programs, applicants with appropriate post-secondary studies and/or work experience will be considered for advanced standing on an individual basis. The College maintains a Prior Learning Assessment and Recognition Office (905) 575-2395 that assists students who want credit for experiential learning. Mature applicants will take admission tests and preparatory courses, where applicable. For more information on admissions to our full-time diploma programs, contact the Admissions Office at (905)-575-2000.
STUDENT EVALUATION AND GRADING

Mohawk College uses a credit value system that supports the calculation of a weighted grade point average. Courses are assigned a number of credits based on their total course hours and these credits are multiplied by the grade obtained in the course when calculating a grade point average. In order to receive their diploma students must complete the entire program of studies and achieve a weighted GPA of at least 60%.

The grading system establishes one common passing grade level of 50% for all courses. Other grade designations which the student might encounter include the following:

- AC Attendance Complete
- AN Attendance Not Met
- AU Course Audit
- CR Credit Granted (Prior Learning Assessment)
- E Exemption Granted
- I Incomplete
- R Requirements Complete
- UW Unofficial Withdrawal

It is the responsibility of the student to be aware of various policies and procedures governing the School of Engineering Technology.

HONOURS SYSTEM

There are two separate honours designations used by the College. A Dean’s Honours list is published at the end of each semester and contains the names of full-time students who have achieved an overall standing of at least 85.0% with no failing grades at the end of each academic semester. A congratulatory letter is sent to the student from the Dean and Associate Dean in each semester in which the student qualifies.

At the completion of a program of study, students who have an overall standing of at least 85% with no failing grades will qualify for Honours Graduate status. Honours Graduates are announced at Convocation and they will receive a congratulatory letter from the College along with an attachment for the diploma.

For further information on the Honours System and Student Evaluation and Grading please contact the Registration Centre at (905) 575-2364.

STUDENT AND GRADUATE EMPLOYMENT SERVICES

Student and Graduate Employment Services provides assistance to students, employers and college personnel on a year round basis. The Office acts as an employment resource link between education and industry. Employment officers provide job referral services, pertinent labour market information, career advisement, and job search presentations. For information about BCS graduate placements please call Ms. Christine Boucher (905) 575-2167.

FIELD PLACEMENTS

Students in the Urban & Regional Planning Technician – GIS program participate in a field placement in the fourth semester. They will spend three weeks in a planning work environment to gain exposure to: planning office practice; technical skills; technical and political meetings; and to apply classroom training in a real-life setting. These placements are facilitated by the Program Coordinator.
CO-OPERATIVE EDUCATION

Co-operative Education (Co-op) extends the academic learning process into the workplace through on-the-job learning experiences. Co-op integrates the learning objectives contained in the program of studies with real life applications in the work force. These learning experiences enhance the student’s vocational maturation and personal development.

The Co-operative Education Department is responsible for:

- Providing opportunities for paid, supervised off-campus work terms in co-operating business, industry, and government agencies.
- Providing comprehensive career development services for co-op students within the academic curriculum.
- Enhancing the potential for graduate employment through industry contacts and career development in jobs that match the student’s aspirations and training.

The Co-op Specialists works closely with BCS to ensure the job selection process produces jobs closely related to the academic program content. This close communication also provides feedback to the Program Co-ordinators and Advisory Committees, that the most appropriate skill sets are being developed to enable student success in Canadian business and industry.

The benefits to the students who participate in co-op are numerous:

- Experiencing practical applications of academic knowledge
- Acquiring career information for future decision-making
- Developing human relations and communications skills
- Earning money and managing finances
- Developing contacts for graduate employment
- Enhancing job search and interview skills
- Developing workplace learning objectives and career goals

Co-op employers have called the work term a “four month interview” during which they can evaluate potential employees. The benefits to the co-op employer include:

- Better opportunity to evaluate potential employees
- Provision of motivated, well-educated, and capable employees
- Increased visibility in attracting qualified personnel
- Opportunity to become a “corporate citizen” by contributing to the education process
- Reduction of recruiting costs and improved retention by ensuring a better match of individual and position

In order to gain the most benefit from co-op an employer should develop a co-op plan with definite policies, procedures and goals. Points to be considered in this plan should include:

- Accurate, informative job descriptions to stimulate student interest
- An orientation to familiarize the incoming student with the employer’s situation and expectations
- Supervision of students by individuals who understand and are interested in co-op
- Increasing responsibilities in successive work semesters for returning students
- An exit interview to discuss the student’s performance and future plans
- Specific goals and objectives for the work experience
Special Notes

The Co-op Program is available to students in the Technology programs. Students who enter a Co-op Program are expected to assume several responsibilities. They must compete for and obtain one of the available jobs or find acceptable alternative employment for the work semester. They are required to fulfill their agreements with employers and abide by the rules governing Co-operative Education. Failure to do so could result in suspension from the program and a failing grade in a work term. The format for co-op in the various Technology programs is shown below. Note that not all programs have the same co-op/academic semester sequence.

A student who declines to accept two job offers without just cause after interviews provided by the co-op staff may be prevented from taking further interviews. The student will then be required to find his/her own job.

International (VISA) students are eligible to participate in co-op if it is part of their program of studies. Students are required to provide Co-op Services with a copy of a valid work visa prior to each work term. Contact International Education for instructions on obtaining a work visa.

Students participating in co-operative education will be assessed a co-op service fee per academic semester beginning with semester one.

Students enrolled in Transportation and Civil Engineering Technology are advised that a driver’s licence and personal transportation are crucial to accessing the co-op work term opportunities.

Full guidelines for co-operative education may be obtained from the Co-op Services.

Job Services staff attempts to provide work opportunities related to the students’ career interests and program of studies. This is not a guarantee. Work term success is largely the responsibility of the student.

**SEASON and COOP WORK TERM ROTATIONS FOR PROGRAMS**

**Architectural Technology – Design Option (3 four-month co-ops)**

**Architectural Technology – Construction Option (3 four-month co-ops)**

**Semester 1**

**Semester 2**

**Vacation**

**Semester 3**

**Work Term 1**

**Semester 4**

**Semester 5**

**Work Term 2**

**Semester 6**

**Semester 3**

**Work Term 1**

**Semester 4**

**Semester 5**

**Work Term 3**

**Semester 6**

Note: Co-op and semester rotations for Architectural Technology programs are based on the intake year. Therefore if you started semester 1 in September of 2011, you would be considered Odd Year Rotation.
Transportation Engineering Technology (3 four-month co-ops)

<table>
<thead>
<tr>
<th>Sept – Dec</th>
<th>Jan – Apr</th>
<th>May – Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>Semester 2</td>
<td>Vacation</td>
</tr>
<tr>
<td>Semester 3</td>
<td>Work Term 1</td>
<td>Semester 4</td>
</tr>
<tr>
<td>Work Term 2</td>
<td>Semester 5</td>
<td>Work Term 3</td>
</tr>
<tr>
<td>Semester 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Civil Engineering Technology (3 four-month co-ops)

<table>
<thead>
<tr>
<th>Sept – Dec</th>
<th>Jan – Apr</th>
<th>May – Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>Semester 2</td>
<td>Vacation</td>
</tr>
<tr>
<td>Semester 3</td>
<td>Semester 4</td>
<td>Work Term 1</td>
</tr>
<tr>
<td>Work Term 2</td>
<td>Semester 5</td>
<td>Work Term 3</td>
</tr>
<tr>
<td>Semester 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Success in securing work placement for your co-op work terms is normally reliant on academic performance, covering letters and resumes, and job interview performance, availability of a driver's licence and a safe driving record.

Architectural Technician
Building Renovation Technician
Civil Engineering Technician
Construction Engineering Technician
Urban & Regional Planning - GIS Technician

<table>
<thead>
<tr>
<th>Sept – Dec</th>
<th>Jan – Apr</th>
<th>May – Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>Semester 2</td>
<td>Vacation</td>
</tr>
<tr>
<td>Semester 3</td>
<td>Semester 4</td>
<td></td>
</tr>
</tbody>
</table>

**BCS SCHOOL REQUIREMENTS**

At the time of publication of this handbook, the Building Renovation Technician, Construction Engineering Technician Program, and the Urban & Regional Planning - GIS Technician Program are stand-alone programs. The following policies are intended primarily for the BCS Cluster Technician and Technology programs. Promotion from one semester to the next for all programs is largely dependent on a student's academic success and available seats in the program, and is ultimately governed by the College's Grading and Promotion Policy. The department does allow students to pursue diplomas and certificates on a part-time basis, but this requires a special arrangement between the student and the Program Co-ordinator or Associate Dean.

ENROLMENT REQUIREMENTS – B.C.S. 100
PROGRAM SELECTION REQUIREMENTS – B.C.S. 200
PROMOTION REQUIREMENTS – B.C.S. 300
GRADUATE TRANSFER REQUIREMENTS – B.C.S. 400
EVALUATION AND ATTENDANCE REQUIREMENTS – B.C.S. 500
LITERACY REQUIREMENTS – B.C.S. 600
ENROLMENT REQUIREMENTS – B.C.S. 100

100.1 First Semester

The College Registrar will normally admit up to 280 students in seven common classes in the BCS Cluster

100.2 Second Semester

BCS School will allocate program seats in the second semester based on first semester academic performance and each student’s program selection form. The following numbers indicate the maximum program seats available.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Cluster</td>
<td>200</td>
</tr>
<tr>
<td>Technician Cluster</td>
<td>80</td>
</tr>
<tr>
<td>Total Second Semester</td>
<td>280</td>
</tr>
</tbody>
</table>

100.3 Third Semester

The BCS will allocate program seats in the third semester based on second semester academic performance and each student’s program selection form. The following numbers indicate the maximum program seats normally available:

<table>
<thead>
<tr>
<th>Program</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Technology (531)</td>
<td>80</td>
</tr>
<tr>
<td>Civil Engineering Technology (534)</td>
<td>80</td>
</tr>
<tr>
<td>Transportation Technology (543)</td>
<td>40</td>
</tr>
<tr>
<td>Architectural Technician</td>
<td>35</td>
</tr>
<tr>
<td>Civil Engineering Technician</td>
<td>35</td>
</tr>
<tr>
<td>Total Third Semester</td>
<td>270</td>
</tr>
</tbody>
</table>
PROGRAM SELECTION REQUIREMENTS – B.C.S. 200

200.1 Students in first semester

The students in first semester have joined Building & Construction Sciences with a stated preference for their field of studies. Students should note that all technician programs have a common first and second semester. Following the first and second semester, students will indicate their preference(s) for programs by completing a Program Selection Form. The technology programs have a common first and second semester, allowing students the opportunity to move from one technology to another with no academic penalty.

200.2 Promotion to second semester

Each student’s progress in the first semester will be carefully monitored and promotion to second semester will depend upon his/her performance in the first semester, as per the Promotion Requirements B.C.S. 300.

200.3 Students requesting program change within the BCS Department

At the end of the first and second semester, a student may request a change in his/her field of study (within the BCS cluster). These requests will be considered and permission for the change will be based on the following:

- Seats available in the target program of study
- Academic performance

Program choice should be finalized by the end of the second semester.

200.4 BCS guidelines for allocation of seats

If a particular program is oversubscribed, the BCS School may request students to change programs on a voluntary basis. If it is necessary to make any further changes in the number of students in a program, the decision will be based on the student’s academic performance as measured by his/her overall average grade.

Where student demand dictates, the BCS School may create a second or third section of a program to accommodate the number of students eligible for a particular program and semester.
PROMOTION REQUIREMENTS - B.C.S. 300

300.1 Promotion to next semester

Students should have passing grades in all courses and a GPA of at least 60% to proceed to the following semester. If a student's record contains one or more failing grades, or one or more missing courses, he/she may be allowed to continue with permission from the Program Coordinator and/or Associate Dean. If a student's record contains three or more failing/missing grades, he/she will be asked to withdraw from the Program, or transfer to another program within the College such as the Pretechnology program. A student may be permitted to continue with failing grades on a probationary status (see item 300.3 below).

300.2 Re-applying after withdrawal

Students who have been asked to withdraw may apply to re-enter the program (usually after a period of 1 year) or may be allowed to continue on a part-time basis after a meeting with the Student Success Advisor and the Program Coordinator. The student should be prepared to discuss the reasons for his/her academic failures. The application will be carefully considered and if successful, probationary conditions will be applied (see 300.3 below).

300.3 Continuing on Probationary Status

In order to be considered for probationary status, the student will be required to submit a letter and meet with the Student Success Advisor and Program Co-ordinator and/or Associate Dean addressing the following:

(i) Why a reasonable performance level was not achieved during the original term?

(ii) Why the student is now confident of success in the chosen program?

(iii) What activities have been undertaken in the year's absence to improve his/her chances of success?

300.4 Enrolment in Third Year Technology

Technology students should note that they must obtain all first year credits before permission is granted to enrol in any third year course.

300.5 Graduation and Course Exemptions

Upon completion of the program of studies, the student must apply to graduate by completing an Application to Graduate form, which may be obtained on-line through MoCoMotion and submit the form to the Square – Student Services, Room C102.

If you are missing courses from the program of studies, but have taken courses that are deemed equivalent, you must complete an on-line Application for Course Exemption for each missing course. Failure to acquire an exemption or failure to complete the program of studies will delay graduation.
Students who have successfully completed either the Architectural Technician Diploma or the Civil Engineering Technician Diploma may apply to complete the other Technician diploma. At the discretion of the Associate Dean the student may be allowed to enrol in the remaining courses required to complete their second Technician Diploma.

Students who have completed the Architectural Technician program would take the following 3rd and 4th semester courses to complete the Civil Engineering Technician Diploma;

3rd Semester Courses; SURV CVA38, TRAN CV314, ENVR CV320, MATL EA448
4th Semester Courses; CADM CV414, ENVR CV420

Students who have completed the Civil Engineering Technician program would take the following 3rd and 4th semester courses to complete the Architectural Technician Diploma;

3rd Semester Courses; BLDG AR173, BLDG AR356, CADM AR304, BLDG AR385, MATL AR448
4th Semester Courses; BLDG AR485, BLDG AR492

This dual credential option also exists for Construction Engineering and Building Renovation Technician graduates to complete the Civil Engineering or Architectural Technician Diplomas. For more information on this option please contact the BCS School at (905) 575-2251 for an appointment.

Transfer credits from Building Renovation/Construction Engineering Technician include:

- MATHMS144
- TDRWEA106
- COMMMLL041/11040
- CADMCV203
- BLDG10070
- BLDG10043
- BLDG10030
- COMM10265
- MGMTCN340
- MGMTCN440
- COMPCO001
- BLDG10065
- ENVRCN320
- LAWSCN240
- BLDGNCN330
- SURVCN350
- BLDGNCN340
- CADMCV206
- MATLCN110
- OPELGE100
DIRECT ENTRY REQUIREMENTS - B.C.S. 400

400.1 Technician Graduates Applying to Technology Programs

Graduates of a BCS Technician program may apply for direct entry into a BCS Technology program. Technician graduates may apply through the Associate Dean’s office to enrol into the second year of a Technology program provided they have a 75% average in their final semester. Entry to the program is conditional on the availability of space in a class and will require the completion of the following additional courses through Continuing Education:

- PHYS EA201  Applied Mechanics
- TRAN EA105  Transportation Technology
- MATH MS271  Mathematics *

400.2 Architectural Technician to Architectural Technology

Architectural Technician graduates who have met the requirements of BCS 400.1 will be authorized for entry into 3rd semester Architectural Technology the following exemptions towards their Technology diploma:

- COMM 10265  Critical & Innovative Thinking
- OPEL GE100  General Elective Selection
- BLDG AR345  Residential Construction
- BLDG AR385  Residential Building Services
- BLDG AR363  Ontario Building Code 1
- BLDG AR173  History of Architecture

400.3 Civil Engineering Technician to Civil Engineering Technology

Civil Engineering Technician graduates who have met the requirements of BCS 400.1 will be authorized for entry into 3rd Semester Technology. Students will be granted the following exemptions towards their Technology diploma:

- MATL CV301  Materials 2
- SURV CV346  Surveying 2
- TRAN CV571  Highway Technology A
- CADM CV691  Highway Technology B
- MGMT CV687  Construction Management
- COMM 10265  Critical & Innovative Thinking
- OPEL GE100  General Education Selection
500.1 Grading System

In accordance with College Requirements all courses in BCS Post Secondary Programs will be evaluated using percent grades:

**Range of Excellent**
85-100%

**Range of Good**
70-84%

**Range of Acceptable**
60-69%

**Range of Pass**
50-59%

**Range of Unacceptable**
0-49% (Failing Grade)

This grading system establishes one common passing grade level of 50% for all courses. However students must achieve a weighted GPA of 60% to receive their diploma.

500.2 Attendance Requirements

It is assumed that all students will carry out their studies in a mature and responsible fashion. It is also expected that all students should attend their classes barring extenuating circumstances. In accordance with the Faculty of Engineering Technology practices the following statements are intended to encourage the development of good attendance habits for students commencing their college studies.

- Attendance in Semesters 1 and 2 of the BCS Cluster will be taken by all BCS instructors where it is feasible to do so.
- Attendance may be considered by the instructor in determining a student's final grade. Students are referred to the course outlines for more information.
- If an instructor intends to assign a specific weight or penalty pertaining to attendance, this shall be clearly indicated in the course outline and/or announced to the class at the beginning of the semester.
LITERACY REQUIREMENTS - B.C.S. 600

600.1 Literacy Requirements

Students and graduates of BCS programs must communicate with professional competence. To be successful in the program (and later in the work force), all students must demonstrate communication competence on all written and oral assignments, tests, and examinations.

Exclusive of technical content the following descriptions are given to indicate the difference between various levels of acceptable writing and their appropriate use, versus work that is completely unacceptable.

- Written and oral work with inadequate grammar, punctuation, spelling, syntax, and organization shall receive a failing grade.
- Written and oral work which is reasonably clear and free of major grammatical errors shall receive a passing grade (50% – 69%). Such communication may be acceptable if sent to one's peers, but supervisors would regard it as draft quality.
- Written and oral work which contains grammar, punctuation, and spelling of professional quality, but lacks coherence and organization, shall be graded as good (70% - 84%). This work could be delivered to an immediate supervisor or equivalent personnel within a firm, but not to senior officers or clients.
- Written and oral work which displays grammar, punctuation, spelling, and syntax of professional quality, and whose organization is logical, complete, and concise, shall receive a grade of excellent (85% - 100%). Such communication could be delivered to any level inside or outside of an organization.

600.2 Literacy Requirements for English as Second Language Students

BCS post-secondary programs are delivered at a level requiring English as Second Language (ESL) students to achieve a score of 7 on the Canadian Language Benchmark Test, in the absence of a Canadian grade 12, College/University English (or equivalent). The department may require ESL/International/Direct-Entry students to complete language upgrading (speaking, reading, writing, and listening) prior to enrolment in a program. These students may be allowed to take some technical courses while doing their language upgrading courses, at the discretion of the Program Co-ordinator and/or Associate Dean.
NAME: (Print) __________________________ CLASS: 1DT ______________

STUDENT NUMBER: __________________________

Please rank (1, 2, 3, etc) the programs that you prefer for semester 2.

ARCHITECTURAL TECHNOLOGY __________

ARCHITECTURAL TECHNICIAN __________

CIVIL ENGINEERING TECHNOLOGY __________

CIVIL ENGINEERING TECHNICIAN __________

TRANSPORTATION ENGINEERING TECHNOLOGY __________

The BCS Department Program Selection Requirements – B.C.S. 200 will be used to determine the students’ placement.

Please return the form to the Engineering Technology Office – Room E112 by the end of Week 13 in the semester.

If you would like more information about any of the following, please speak to your Program Coordinator or the Admin Assistant in room E112 when submitting this form.

Building Renovation Technician
Construction Engineering Technician
Urban & Regional Planning - GIS Technician
PreTechnology (BCS Foundations) Certificate

Student Signature ___________________________ Date ________________________
NAME: (Print) ________________________ CLASS: 1CA ________ 1NV ________

STUDENT NUMBER: ____________________

Please rank (1, 2, 3, etc) the programs that you prefer for semester 3.

ARCHITECTURAL TECHNOLOGY ________

ARCHITECTURAL TECHNICIAN ________

CIVIL ENGINEERING TECHNOLOGY ________

CIVIL ENGINEERING TECHNICIAN ________

TRANSPORTATION ENGINEERING TECHNOLOGY ________

The BCS Department Program Selection Requirements – B.C.S. 200 will be used to determine the students’ placement.

Please return the form to the Engineering Technology Office – Room E112 by the end of Week 13 in the semester.

If you would like more information about any of the following, please speak to your Program Coordinator or the Admin Assistant in room E112 when submitting this form.

Building Renovation Technician
Construction Engineering Technician
Urban & Regional Planning - GIS Technician
PreTechnology (BCS Foundations) Certificate

_________________________________________  ________________________________
Student Signature                                      Date
BCS STUDENT RULES OF CONDUCT FOR TESTS AND EXAMS

In this document the term "test" is intended to include both "tests" and "examinations". The term "Invigilator" is meant to include any person authorized to supervise or conduct tests, that is, proctors, professors, and support staff, etc.

1. Students must be aware of the College's Requirements on Academic Honesty.
2. It is the responsibility of the student to be aware of the place, starting time, and duration of all tests as well as the rules of conduct which govern them.
3. Only eligible students and authorized invigilators are allowed access to the testing facility.
4. Students must bring their student identification cards and place them in a conspicuous place on their test station or desk. Students without a valid student identification card may not be permitted to write the test. Students may be required to sign an attendance record during a test.
5. Invigilators are authorized to assign specific seats to students.
6. Students are expected to arrive at the testing facility at least five (5) minutes before the scheduled commencement of the test. Students will not normally enter the testing facility until permitted to do so by the invigilator.
7. No materials and equipment, including calculators, may be taken into the testing facility except those authorized by the invigilator and/or specified by the test paper. It is the responsibility of the student to be aware of the type and nature of resources which are allowed inside the testing facility. Invigilators are authorized to inspect all equipment and materials used inside a testing facility and, if deemed appropriate, reset calculators.
8. Students who bring unauthorized resources into a testing facility, or who assist other students, or who obtain assistance from other students or any other unauthorized source, may not be permitted to complete the test. They may also be subject to further disciplinary action under the College's Academic Honesty Requirements.

Students must not communicate in any way with one another during tests. Students must turn off any and all communication devices during tests.

9. Students will not be permitted access to a testing facility if a) the test has been in progress for more than thirty (30) minutes, or b) if one or more students have already left the testing facility. (Under special circumstances, the invigilator may waive this condition).
Students are not permitted to leave the testing facility during the first thirty (30) minutes of a test.
In the event of students being late for a test, they must complete their test in the remaining designated time, unless the invigilator authorizes an extension.
10. In cases of emergency, students leaving and returning to a testing facility must be accompanied by an invigilator unless this requirement is waived by the invigilator.
11. Student must enter and leave a testing facility QUIETLY.
After leaving the testing facility, students must not remain in the immediate vicinity of the exit.
12. It is the student's responsibility to ensure that he/she has received the correct test paper and that the document contains the correct number of pages and questions.
Students must follow all instructions as contained in the test paper. Any changes to such instructions, if required, will be communicated by the invigilator.
13. At the conclusion of a test, all testing activity must cease. In the event that this requirement is not observed, the invigilator may refuse to accept a student's test results.
A student must ensure that all test materials to be graded are, in fact, submitted at the conclusion of the test and contain the student's name. An examiner has no obligation to grade materials submitted by a student after that student has left the testing facility.
Tests and testing materials specifically provided by the invigilator must not be removed from the testing facility unless the appropriate authorization is given by the invigilator.
14. Alternative testing provides students who are disabled with the opportunity to meet regular academic requirements while preserving the integrity of the testing process. Accessible Learning Services is governed by regular college policies and the Alternative Testing service will operate in accordance with BCS Student Rules of Conduct for Tests and Exams and the College's Academic Honesty Requirements. Students with disabilities are required to identify themselves to Accessible Learning Services where the Special Needs Consultant will recommend alternative testing where appropriate. Please refer to the alternative Test/Examination procedure for students with disabilities.
COURSE DESCRIPTIONS

BLDG AR173 - HISTORY OF ARCHITECTURE
The historical influences of western civilization on North American architecture. The study of local architectural heritage and historical building and design technology.

BLDG AR345 - RESIDENTIAL CONSTRUCTION
Foundations, load bearing masonry and wood construction, exterior cladding and roofing as applied to residential and small buildings.
Prerequisite: MATL EA102 Construction Materials 1

BLDG AR356 - RESIDENTIAL CONSTRUCTION
Prerequisite: MATL EA102 Construction Materials 1

BLDG AR345 - RESIDENTIAL CONSTRUCTION
This course is an introduction to Ontario Building Code and related legislations. Focus on part 9 of the code which covers buildings between 10 and 600 square metres and less than 3 stories. Applications of the code and regulations to the design of a residential building are covered.

BLDG AR385 - RESIDENTIAL BUILDING SERVICES
Study of principles and development of mechanical and electrical drawings related to residential and light industrial construction.

BLDG AR356 - RESIDENTIAL CONSTRUCTION
Foundations, concrete and steel framing, cladding and glazing and roofing as applied to small commercial and industrial buildings. Requirements of the Building Code. Related topics.
Prerequisite: BLDG AR345 Residential Construction

BLDG AR363 - ONTARIO BUILDING CODE 1
Introduction to Ontario Building Code and related legislation. Focus on part 9 of the code which covers buildings greater than 600 square metres and more than 3 stories. Applications of the code and regulations to the design of an ICI building are covered.
Prerequisite: BLDG AR363 Ontario Building Code 1

BLDG AR385 - RESIDENTIAL BUILDING SERVICES
Development of mechanical and electrical drawings for related project using computer aided drafting techniques.
Prerequisite: BLDG AR385 Residential Building Services

BLDG AR452 - ARCHITECTURAL PROJECT
A course to provide architectural technicians with the opportunity to develop their presentation and oral skills. Students will work in small teams to complete a project of the instructor's choosing.

BLDG AR452 - STRUCTURAL DESIGN 3
Prerequisite: BLDG EA401 Structural Design 2

BLDG AR435 - LIGHT COMMERCIAL CONSTRUCTION
Environmental factors affecting residential construction. Plumbing, lighting, power, heating, ventilating, code requirements and cost considerations. Service recommendations for related projects.
Prerequisite: BLDG AR385 Residential Building Services

BLDG AR445 - LIGHT COMMERCIAL CONSTRUCTION (Design)
Vertical transportation (stairs and elevators). Floor, wall and ceiling finishes. Acoustics and noise control; Fire and smoke control; Regulatory ordinances; service life criteria; renovation.
Prerequisite: BLDG AR445 Light Commercial Construction or BLDG AR356 Residential Construction

BLDG AR525 - ARCHITECTURAL DESIGN
Development of design for a low-rise building. Research and feasibility studies will lead to a final presentation package. This course includes freehand drawing techniques.
Prerequisite: TDRW AR462 Commercial Design & CAD

BLDG AR525 - STRUCTURAL DESIGN 4
Design of composite beams and columns, wall footings and isolated column foundations. Production of calculations and drawings for the structural design of a major drafting and design project. Computer assisted design and drawings.
Prerequisite: BLDG AR525 Structural Design 3

BLDG AR545 - COMMERCIAL BUILDING SYSTEMS DESIGN
Research and analysis of mechanical and electrical systems and components. Load estimates and code requirements for related projects.
Prerequisite: BLDG AR535 Light Commercial Bldg. Serv. or BLDG AR435 Residential Services

BLDG AR545 - INTERIOR CONSTRUCTION & FINISHES
Exterior and interior finishes; Equipment and cabinetry; focus on material selection and application. Course will be coordinated with building under study for jury critique.
Prerequisite: BLDG AR545 Commercial Construction (Design)
BLDG AR700 - ARCHITECTURAL COMPUTER VISUALIZATION
Introduction to the use of 3D software programs for Architectural rendering through a series of topic specific projects including: modelling; lighting design; materials and finishes; and animation.
Prerequisite: CADM CV206 CAD B; TDRW AR462 Commercial Design & CAD

BLDG CN120 - TECHNICIAN SKILLS THEORY 1
This course introduces the student to commonly-used hand tools in the field of carpentry. Students will be able to identify carpentry-based hand tools, portable and stationary power tools; state their use and care, and identify the health and safety hazards associated with them. The objectives of this course will be reinforced by the practical use of carpentry tools in BLDG CN130 Technician Skills Lab 1.

BLDG CN130 - TECHNICIAN SKILLS LAB 1
This course introduces the student to commonly-used hand tools in the field of carpentry. Students will be able to identify and demonstrate the proper use and care of carpentry-based hand tools, portable and stationary power tools; and identify the health and safety hazards associated with them. Students will undertake several projects to gain practical, hands-on experience with these tools using wood and wood products. The objectives of this course will be supplemented by the carpentry tool theory acquired in BLDG CN120 Technician Skills Theory 1.

BLDG CN210 - PLAN READING
Students will develop the ability to read and interpret construction drawings, and to identify the various drawing styles and construction views used in plans. They will demonstrate the ability to utilize construction blueprints for basic trade-related material take-off and calculations.
Prerequisite: TDRW EA106 Drafting Fundamentals & Standards

BLDG CN300 - TECHNICIAN SKILLS THEORY 2
In this course the student will be introduced to drainage-waste-venting (DWV) and water distribution systems. They will gain an understanding and develop the ability to apply codes, specifications and plumbing theory to the proper design and installation of plumbing and piping systems.
Prerequisite: MATL CN110 Construction Materials A; MATH MS144 Math 1 for Construction Technicians

BLDG CN320 - TECHNICIAN SKILLS LAB 2
This course introduces the student to common hand and power tools and piping used in the field of plumbing. Students will be able to identify and demonstrate the proper use and care of plumbing hand tools, portable and stationary power tools; and identify the health and safety hazards associated with them. Students will undertake several projects to gain practical, hands-on experience with these tools using different types of piping. The objectives of this course will be complemented by the plumbing theory acquired in BLDG CN310 Technician Skills Theory 2.
Prerequisite: MATL CN110 Construction Materials A; SAFE CN220 Workplace Safety

BLDG CN330 - CONSTRUCTION AND ESTIMATING 1 – RESIDENTIAL
This course introduces the student to residential construction, codes and quantity surveying. The student will learn to take-off quantities and estimate costs for excavation, foundations, framing, building services, interior and exterior finishes for various residential construction applications.
Prerequisite: BLDG CN210 Plan Reading; LAWS CN240 Ontario Building Code; MATH MS144 Math 1 for Construction Technicians

BLDG CN340 - CONSTRUCTION AND ESTIMATING 2 – COMMERCIAL
This course introduces the student to commercial construction, codes and quantity surveying. The student will learn to take-off quantities and estimate costs for excavation, foundations, framing, building services, interior and exterior finishes for various commercial construction applications.
Prerequisite: BLDG CN210 Plan Reading; LAWS CN240 Ontario Building Code; MATH MS144 Math 1 for Construction Technicians

BLDG CV342 - ESTIMATING 2
Quantity measurement of building materials (wood, steel, masonry, concrete) necessary for residential and commercial projects.
Prerequisite: BLDG EA202 Estimating 1

BLDG EA202 - ESTIMATING 1
An introduction to measurement of quantities of wood, concrete, earthwork, structural steel, reinforcing steel, masonry, and subdivision services.

BLDG EA301 - STRUCTURAL DESIGN 1
Prerequisite: MATH MS271 Mathematics; PHYS EA201 Applied Mechanics

BLDG EA401 - STRUCTURAL DESIGN 2
Prerequisite: BLDG EA301 Structural Design 1

BLDG EA401 - STRUCTURAL DESIGN 3
Prerequisite: BLDG EA401 Structural Design 2

BLDG 10078 – STRUCTURAL DESIGN 4
Calculate climatic loads as required by OBC. Design bolted and welded connections. Design flooring systems including

**Prerequisite:** BLDG EA501 or BLDG AR525 Structural Design 3

**BLDG EA521 - SUSTAINABLE DESIGN & BUILDING PRACTICE**
Research and analysis of building mechanical and electrical service systems. Standards and codes and energy saving techniques related to heating, lighting and ventilation.

**BLDG EA455 - COMMERCIAL CONSTRUCTION (Construction)**
The study and research of interior and exterior finishes, building equipment, vertical transportation systems, acoustics and noise control and fire and smoke control.

**Prerequisite:** BLDG AR455 Light Commercial Const. or BLDG AR356 Residential Construction

**BLDG EA635 - COMMERCIAL BUILDING SYSTEMS**
Calculations and development of mechanical and electrical contract documents for a project.

**Prerequisite:** BLDG AR635 Building Services 3

**BLDG EA441 - CONSTRUCTION MANAGEMENT 2**
Study of a design/built project from feasibility study to substantial performance. This includes contract documents, project administration, cost control, site supervision and labour relations.

**Prerequisite:** MGMT EA451 Construction Management 1

**BLDG EA454 - INTERIOR CONSTRUCTION & FINISHES**
The course will deal with interior and exterior finishing materials, cabinetry, millwork, and selected equipment. Acoustics, fire and smoke control, regulatory ordinances, service life and selection criteria will also be included.

**Prerequisite:** BLDG EA45 Commercial Construction (Construction)

**BLDG UP222 - GRAPHIC PRESENTATION**
This course will provide the students with an introduction to basic drafting and graphic techniques and tools while developing an understanding of three-dimensional drawing. Orthographic, isometric and oblique drawings will be covered.

**BLDG UP200 - LAND REGISTRY SYSTEMS**
This course examines the legal basis of land ownership in Ontario including the operation of the Registry and Land Title systems. Students will become familiar with the requirements for legal descriptions of land and how to use them.

**BLDG UP212 - FUNDAMENTALS OF URBAN DESIGN**
In this course students will utilize design and graphic skills and design principals to undertake the preparation of a development proposal. Students will develop skill in the design and preparation of draft plan of subdivision submissions.

**Prerequisite:** CADMUP222 Computer Graphics

**BLDG 10025 - STRUCTURAL RENOVATIONS-PRACTICAL**
Learners practice safe construction skills required of residential structural renovations. Learners frame residential floor systems, construct model load bearing and partition walls, and varied ceilings and roof systems. Practice methods of modifying and tying into existing structures. Perform costing and project management methodology and practices relative to the structural renovations.

**BLDG 10026 - STRUCTURAL RENOVATIONS–THEORY**
Learners determine theory design and code knowledge for residential structural renovation. Establish building code specifications, hand and power tool safety, footing structure, types, and foundation design, and framing requirements for floors, walls and roofs. Compare and contrast construction materials, particularly wood and alternative materials. Evaluate methods of modifying and tying into existing structures. Determine costing and project management skills relative to the structural renovations.

**BLDG 10027 - DESIGN STYLES**
Determine the fundamentals of architectural design through contemporary and milestone developments in the fields of architectural and interior design. Establish the factors that affect the lifetime of a building to its use, re-use and demolition. Colour, themes and motifs are examined. Assess the historic development of architectural style to design and the environment to recommend plausible space, lighting, colour, layout, and finishes and texture options for healthy and sustainable homes.

**BLDG 10028 - BUILDING & RENOVATION 3 – PRACTICAL**
Create practical projects that maximize the safe and correct use of tools and equipment required of renovation detail finishes. Construct model built in cabinets with appropriate and varied detail finishes and to code stair building using safely and correctly the appropriate portable hand and power tools, stationary power tools and equipment supervised in a lab setting. Perform costing and project management methodology and practices relative to renovation detail finishes.

**BLDG 10029 - BUILDING & RENOVATION 3 – THEORY**
Determine theories and methodology required to install and construct interior finishes for trim, cabinet fabrication and installation. Determine calculations and construction methods necessary in millwork and for stair layout and construction. Determine applicable building codes, the correct and safe use of tools and equipment. Establish use of construction materials to interior finishes. Evaluate costing and project management methodology and practices relative to renovation detail finishes.

**BLDG 10030 - SUSTAINABLE CONSTRUCTION**
Create a waste-management success-measurement report that contains a summary of the weight and volume of the materials generated throughout a renovation project as reduced, reused, and recycled with the costs and savings related to the waste management project including added labour costs and shipping and disposal costs and savings. Examine in an integrated system, building practices and materials that impact on the environment. Assess internal and external factors to conclude best practices in material sourcing.

**BLDG 10031: BUILDING LAYOUT**
Determine the fundamentals, basic principles and methodology of building layout in different leveling, setbacks, and property limits. Calculate areas employing horizontal, slope and angular measurements and relative to surveying and building layout. Field work develops practical skills in learners regarding differential leveling, blueprint reading, distance measurements, note keeping and site layout techniques.

**BLDG 10032 - BUILDING & RENOVATION 2 – PRACTICAL**

Create practical projects in a supervised shop environment that maximize the safe and correct use of tools and equipment required of removal and refinishing quality renovations. Develop construction skills focusing on interior and exterior finishes through costing and project management techniques. In particular, remove, install, refinish and/or restore wall finishes, ceiling floor finishes, trim and millwork, cladding, soffit, fascia, eaves-trough and roofing work in a supervised shop environment.

**BLDG 10033 - BUILDING & RENOVATION 2 – THEORY**

Determine the theories and knowledge necessary to remove and/or refinish existing interior and exterior finishes. Determine applicable building codes and methods required to remove, install, refinish or restore walls, ceilings, floors for interior applications including trim and millwork; and cladding and roofing for exterior work. Evaluate costing and project management methodology and practices relative to removal of and refinishing in renovations.

**BLDG 10034 - BUILDING & RENOVATION THEORY 4 – THEORY**

Develop theories and knowledge of commercial construction and renovations and an understanding of applicable code requirements. Evaluate materials and construction methods particular to commercial applications. Ascertain the purpose and function of the sub-trades involved in a renovation process. Determine costing and project management skills relative to the commercial construction and renovation field.

**BLDG 10035 - BUILDING & RENOVATIONS 4 – PRACTICAL**

Construct shop projects related to commercial renovations in a supervised environment. Determine best practices for materials, safe methods and the skills necessary for formwork, metal studs, partition walls, raised access flooring, and basic plumbing, electrical and sheet metal projects. Perform costing and project management relative to the commercial construction and renovation field in total project form.

**BLDG 10043 - HISTORY OF ONTARIO ARCHITECTURE**

You are introduced to the evolution of Western architecture from ancient times to modern day. Study the development of design, construction techniques, and ideas in both individual pieces of architecture and town planning.

**BLDG 10051 - SUSTAINABLE CONSTRUCTION TECHNIQUES**

Evaluate Sustainable Construction Techniques such as energy management, day lighting, and efficient water usage. Apply the selected techniques to the building being considered for the Jury project. Defend the selected methods using Life Cycle Assessment.

**BLDG 10061 - FACILITIES MANAGEMENT**

Practical applications of commercial software in facilities management and related subject areas.

**Prerequisite: CADM EA531 Construction Computer Applications**

**BUSN BA107 - ENTREPRENEURIAL TRAINING**

The course will offer a careful examination of the process of entrepreneurship, concentrating on both theoretical styles and practical approaches. The course will address the following topics: business trends and entrepreneurship, the market and the target customer, competition, promotion, location analysis, management and personnel, financial requirements, preparing a business plan, buying a business and buying a franchise.

**CADM AR304 - CAD 2**

This course is an intermediate AutoCAD course aimed at fine tuning 2D skills. The student will become proficient in paper space, attributes, graphic transfers, blocking, Xrefs and file management.

**Prerequisite: CADM CV203 CAD A**

An introductory course in computer aided drafting. This course is designed to take a person with little familiarity with computers or computer aided drafting to the point where they can generate, edit and display drawings using the AutoCAD system.

**CADM CV206 - CAD B**

A continuation of CAD A, this course will present more advanced features of CAD as well as cover examples which are specific to the architectural, civil and transportation fields.

**Prerequisite: CADM CV203 CAD A**

**CADM CV401 - CAD FOR CIVIL ENGINEERING**

Topics include an introduction to 3D CAD, digital terrain modelling and Land Development Desktop software.

**Prerequisite: CADM CV206 CAD B; TDRW EA206 Drafting & Construction Techniques**

**CADM CV406 - STRUCTURAL DETAILING 2**

Structural steel detailing and connections, beams, columns, and trusses using Microstation. Architectural and Structural detailing.

**Prerequisite: CADM CV206 CAD B; TDRW EA206 Drafting & Construction Techniques**

**CADM CV414 - HIGHWAY TECHNOLOGY II**

The principles of highway geometric design are further developed through the use of design projects. Use of field notes, earthwork estimation, and engineering drawings.

**Prerequisite: TRAN CV314 Highway Technology 1**

**CADM CV691 - HIGHWAY TECHNOLOGY B**

At-grade intersection project using design standards for intersection and interchanges. Pavement management and low-volume roads. Road design project completed both manually and with computer software.

**Prerequisite: TRAN CV571 Highway Technology A**
or environmental quality and learn about innovative strategies to changing consumption. Discover how to improve indoor environmental quality and learn about innovative strategies to changing consumption. Evaluate the social, political, economic, and ecological consequences of adapting our built environment. 

Cadm 1031 - Construction Computer Applications
Practical applications of commercial software in the preparation of estimates, project scheduling, and accounting.

Cadm UP222 - Computer Graphics
This course introduces students to more complex graphic problems. Topics covered include presentation of statistical data, preparation of public meeting material, applied shadow presentation and an introduction to applied raster and vector information.
Prerequisite: Bldg UP122 Graphic Presentation

Cadm UP331 - Advanced Cad & Customization
This course introduces students to more complex AutoCad graphics problems. The focus will be placed on customisation, advanced tools, advanced dimensioning, using attributes and the best way to execute a command.

Cadm UP440 - GIS - AutoCad Map
In this course students will produce and apply GIS to drawings using AutoCad Map. Topics include, digitizing and adding data, verifying and cleaning data, creating topology, importing data, setting up coordinate systems, associating and analysing data and thematic maps.

Chem PE106 - Preparatory Chemistry (Gas)
An introductory level course presenting selected topics in chemistry.

Comm 1096 - Technical Report
The technical report (TR) is based on the planning, design, construction, operation, and maintenance of the civil engineering works throughout a co-operative work term. The purpose of the report is to further develop the students’ ability to prepare and present a technical report on an engineering topic.

Comm 10365 - Critical & Innovative Thinking
This course will explore the growing influence of innovation and critical thinking on a global basis in the 21st century. Students will develop an advanced understanding of their individual role in the workplace through critical thinking and innovative ideas. Students will collaborate in the exploration of roles, responsibilities and issues relevant to the workplace through critical thinking and social innovation. Students will develop advanced communications skills applied to employment-related contexts and successfully complete an e-portfolio for their future employment.

Comm 11040 - Communication D
Communication is an introductory college level English course. Through a variety of assignments, successful students in Communication 040 develop the reading, writing, critical and analytical skills essential to them as communicators in college and upon graduation. This course teaches writing through the critical reading of various fiction and non-fiction material and brings students with basic skills to college level foundational skills.

Comm LL041 - Communications
Communication is an introductory college level English course. Students exiting this course will demonstrate competence in grammar, sentence structure, and writing skills. Successful students in Communication 041 develop the reading, writing, critical and analytical skills essential to them as communicators in college and upon graduation. This course teaches writing through the critical reading of various fiction and non-fiction material and brings students to college level foundational skills.

Comm LL071 - Speech Presentation Skills
This course combines the basics of effective speech with a study of the use of visual aids to enhance an oral presentation.

Comp Co001 - Generic Computer Training
This course assesses students’ computer skills and provides a means of upgrading their skills as required. The major application areas are the Windows operating system, Microsoft Word and Excel and the Internet.

Comp Co002 - Microcomputer Skills for College
This course introduces students to microcomputers and their major application areas: Windows ’98; Word Processing; Electronic Spreadsheets; File Processing; File Manipulation. Students will gain this knowledge through directed reading, lectures and extensive hands-on experience in labs equipped with IBM microcomputers or compatibles.

Comp Co316 - Spreadsheets for Transportation
This course is designed to teach the student how to use spreadsheets for transportation applications. Using EXCEL the student will generate spreadsheets to perform a variety of traffic engineering calculations.
Prerequisite: Comp Co001 Generic Computer Training

Comp Co418 - Databases for Transportation
The course is designed to teach the student how to use databases for transportation applications. Using ACCESS the student will focus on database structures, report preparation and doing analysis of various traffic engineering scenarios.
Prerequisite: Comp Co001 Generic Computer Training

Comp 1098 – Fundamentals Computer Skills 1
This independent study course conducted through the Generic Computer Training Lab is designed to provide the student with an overview of Microsoft Windows and Microsoft Word. Topics include file management, and formatting a Word Document.

Cred 10019 – Career Education – Pre-Technology
Students will explore various career paths and program choices in the Technology area via self assessments, guest speakers, personal interviews and assignments. Students will explore their own strengths and areas of for improvement in the areas of goal setting, critical thinking and time management. Study skills such as learning strategies, improving memory and test taking will be practiced.

Envr 10032 - Green Building Fundamentals
Explore green building strategies designed to mitigate climate change by reducing the environmental impacts of structures. Learn about sustainable site development reduction of building greenhouse gas emissions, energy, water, and material consumption. Discover how to improve indoor environmental quality and learn about innovative and regional solutions. Evaluate the social, political, economic, and ecological consequences of adapting our built environments to changing
conditions. Apply modern learning tools and engage in best project practices required for LEED building certifications. Prepare for the LEED Green Associate Exam with the GBCI.

**ENVR EA204 - ENVIRONMENTAL TECHNOLOGY**
Overview of the planning, design, operation, and maintenance of water supply systems, flood control works, water and wastewater treatment systems, solid waste management, and noise pollution and control.

**ENVR CN230 - MUNICIPAL GOVERNMENT SERVICES**
Students will develop an understanding of the function and operation of municipal government structure and services. They will be provided an overview of the planning, design and operation of potable water systems, storm water management systems, and wastewater management systems.

**ENVR CV303 - MUNICIPAL 1**
Fluid properties, pressure, forces on plane and curved surfaces, buoyancy, steady flow in closed conduits.
Prerequisite: MATH MS271 Mathematics

**ENVR CV320 - MUNICIPAL SERVICES 1**
Water supply systems: transmission, distribution, installation, field testing, inspection, manual and AutoCAD drafting.
Prerequisite: MATH MS171 Mathematics; CADM CV206 CAD B

**ENVR CV403 - MUNICIPAL 2**
Prerequisite: ENVR CV303 Municipal 1 co-requisite: MATH MS477 Mathematics

**ENVR CV420 - MUNICIPAL SERVICES 2**
Drainage and sewerage systems: hydraulic and structural design of storm and sanitary sewers, lot and pavement drainage, installation, field testing, inspection, AutoCAD drafting.
Prerequisite: MATH MS171 Mathematics; CADM CV206 CAD B

**ENVR CV503 - MUNICIPAL 3**
Planning, design, construction, operation and maintenance of water supply systems.
Prerequisite: ENVR CV303 Municipal 1; ENVR CV403 Municipal 2

**ENVR CV603 - MUNICIPAL 4**
Planning, design, construction and operation and maintenance of sewage, drainage, and waste water treatment systems.
Prerequisite: ENVR CV303 Municipal 1; ENVR CV403 Municipal 2

**ENVR UP100 - INFRASTRUCTURE SYSTEMS**
This course will provide students with an understanding of the planning, design, operation, and maintenance of water supply, sanitary sewer, storm drainage, and waste management systems and their relationship to urban planning.

**INFO CVA03 - INTRODUCTION TO GEOGRAPHICAL INFORMATION SYSTEMS**
An overview of the fundamental concepts and terminology, the role of GIS in spatial data management and digital mapping, the multipurpose cadastral and resource GIS, methods of data collection and input, data modelling and representation, storage and retrieval of spatial data, concepts of database systems, manipulation and analysis features of GIS.

**INFO UP340 - GIS - ARCVIEW**
The focus of this course is on the tools and functions of ArcView document types. Students will learn how to view, query, analyse, chart and map geographical data using ArcView. Customisation for specific needs will also be explored.

**LABR EA643 - CANADIAN HUMAN & LABOUR RELATIONS**
A course in basic human and construction labour-union relations at the workplace with emphasis on basic labour-union relations.

**LAWS AR375 - CONTRACTS & ECONOMICS 1**
Prerequisite: BLDG EA202 Estimating 1

**LAWS AR475 - CONTRACTS & ECONOMICS 2**
Contractual obligations; contract administration; bidding procedures; insurance and bonding; CCDC documents. Designer's approach to project estimating of commercial building. Elemental Cost Analysis; computer applications.
Prerequisite: LAWS AR375 Contracts & Economics 1

**LAWS AR675 - CONTRACTS & ECONOMICS 3**
Prerequisite: LAWS AR475 Contracts & Economics 2

**LAWS CN240 - ONTARIO BUILDING CODE**
Students will develop an understanding of the purpose and structure of the Ontario Building Code. Through various class projects and demonstrations, they will learn to investigate, research, interpret and apply the OBC to a variety of residential and commercial structures.

**LAWS CV304 - ENGINEERING LAW**
This course will focus on tort law and contract law pertaining to the construction industry. The course will also deal with construction contracts, arbitration and construction safety legislation.

**LAWS UP211 - PLANNING LAW 1**
This course involves a study of both urban and rural planning principles in Ontario. An examination of provincial government policy on rural planning will be undertaken. In addition provincial land use plans such as the Niagara Escarpment and Parkway Belt West will be examined. Official plan implementation, regional planning and community improvement programs will also be covered.
**Prerequisite:** UPLN UP110 Data Collection & Researching

**LAW 1531 - PLANNING LAW 2**
This course develops the student’s ability to interpret and use the primary implementation tools of planning in Ontario. Topics include: the planning act, official plans, plans of sub-division, consents, zoning bylaws and minor variances. Legislation, process, documentation and participants are all studied.

**MATH MA008 - MATHEMATICS 1 - GAS**
This course is intended to develop basic mathematics and algebraic skills as preparation for college level math courses in the Business and Technology Programs. These skills include basic numeric skills and problem solving abilities. Modules covered are: Integers, Exponents and Order of Operations, Solving First Degree Equations, Simplifying Polynomial Expressions, Factoring, Ratio and Proportions, Percents, and Unit Conversions.

**MATH MA381 - MATHEMATICS OF FINANCE**
Topics include: Simple and Compound Interest, Equations of Equivalence, Simple and General Annuities, Amortization, Capital Budgeting and Depreciation.

**Prerequisite:** MATH MS171 Mathematics

**MATH MS222 - MATHEMATICS**
This course includes algebra, equations, graphing and systems of equations, percents, unit conversions, and mensuration.

**MATH MS144 - MATH FOR CONSTRUCTION TECHNICIANS**
This course provides the student with the skills required to perform basic construction-related calculations in both SI and Imperial Units. Fundamental arithmetic operations in whole numbers, fractions and decimals will be followed by essential concepts of ratios, proportions and percents, measurement, geometry and trigonometry. The course will end with an introduction to algebra and formula manipulation.

**MATH MS171 - MATHEMATICS**
This course includes: Technical Computation, Trigonometry, Unit Conversions, Geometry and Mensuration, Basic Algebra, Linear Equations and Formula Manipulation.

**MATH MS244 - MATH 2 FOR CONSTRUCTION TECHNICIANS**
This course is designed to further the student’s ability to apply mathematical concepts and analysis to construction-related problems. Students will expand their algebraic skills, construct graphs and understand linear equations, solve simple quadratics and polynomials. The course will also include analytical geometry and basic statistics as it applies to the construction field.

**Prerequisite:** MATH MS144 Math for Construction Technicians

**MATH MS248 - MATHEMATICS**
This course includes: Quadratics, Systems of Linear Equations, Analytic Geometry (straight line, and conics), and Descriptive Statistics. **Prerequisite:** MATH MS171 Mathematics

**MATH MS271 - MATHEMATICS**
This course includes: Quadratics, Systems of Equations, Trigonometric Equations, Analytical Geometry, Logarithms and Linear Empirical Curve Fitting.

**Prerequisite:** MATH MS171 Mathematics

**MATH MS377 - MATHEMATICS**
This calculus course covers: Logarithms, Empirical Equations, Differential Calculus and Applications including Linear Motion, Tangents and Normals, Curve Sketching, Max/Min, Related Rates, and Differentiation of Transcendental Functions.

**Prerequisite:** MATH MS271 Mathematics

**MATH MS474 – STATISTICS**
Collection, organization and presentation of data; Descriptive measures; Probability; Discrete and continuous probability distributions; Sampling distribution of the mean and confidence intervals of one mean; Hypothesis Testing; Regression and Correlation. The statistics package MINITAB will be used and MyMathLab.

**MATH MS477 - MATHEMATICS**
This course covers: MacLaurin Series, Integral Calculus with Applications including volumes, centroids of areas and volumes, Moment of Inertia, Radius of Gyration, Work, Fluid Pressure and Force, Polynomial and Transcendental Equations.

**Prerequisite:** MATH MS377 Mathematics

**MATL AR448 - METHODS & MATERIALS 2**
Interior finishes and fire proofing, Stair design, elevators, development of wall sections and the details needed for a building.

**Prerequisite:** MATL EA102 Construction Materials 1

**MATL CN110 - CONSTRUCTION MATERIALS A**
This course provides the student with a broad knowledge of commonly-used construction materials including wood and wood products, piping, concrete and concrete products. Students will be able to identify these materials, state their properties, identify methods of joining and fastening, methods of support, and common applications in the construction industry.

**MATL CN410 - CONSTRUCTION MATERIALS B**
This course teaches the student commonly used field and laboratory tests for aggregates, soils, concrete and asphalt. Students will be able to identify material specifications and properties, and perform the standard quality control tests used in the construction industry.

**MATL CV501 - MATERIALS 2**
The properties of Portland cement and asphalt concrete, together with their mix design and the properties of their constituents will be studied.

**Prerequisite:** MATL EA102 Construction Materials 1

**MATL CV404 - GEO TECH 1**
An introduction to engineering geology and the classification of soils will be treated together with a description of the soil
interaction process.

**MATL CV504 - GEOTECH 2**

Interaction between water and soil, effective stresses, shear strength, stress distribution and consolidation.

**Prerequisite:** MATL CV404 Geotech 1

**MATL CV604 - GEOTECH 3**

The emphasis will be on the geotechnical aspects of foundation design.

**Prerequisite:** MATL CV504 Geotech 2

**MATLA EA102 - CONSTRUCTION MATERIALS 1**

A lab-based introduction to the properties and uses in construction of Portland cement concrete, steel, wood, and masonry.

**MATLA EA448 - HIGHWAY MATERIALS**

This course will provide the technician student with an understanding of the tests and requirements for sub grade soil preparation prior to paving. The student will also have an opportunity to design a hot mix asphalt concrete mixture using the Marshall Method. The emphasis will be placed on the laboratory work and the associated calculations.

**MGMT CN340 - CONSTRUCTION MANAGEMENT A**

This course introduces the student to the principles of critical-path project scheduling. The student will also become familiar with the provincial and municipal acts, regulations, and permit processes associated with the building industry.

**Prerequisite:** LAWS CN240 Ontario Building Code

**MGMT CN440 - CONSTRUCTION MANAGEMENT B**

The student will learn to apply the theory of critical-path project scheduling through practical applications. The student will also be introduced to the principles of construction law, and demonstrate an understanding of bidding and tendering, divisions, contracts and site supervision.

**Prerequisite:** BLDG CN340 Construction Management A

**MGMT CV607 - CONSTRUCTION MANAGEMENT**

The practical application of construction management principles to estimating and project scheduling.

**MGMT EA541 - CONSTRUCTION MANAGEMENT 1**


**Prerequisite:** LAWS AR475 Contracts & Economics 2 or LAWS EA304 Construction Law

**OPLEX XXXX - GENERAL EDUCATION**

General Education courses are chosen from a list of courses designed to broaden the student's academic base, extending education beyond the main focus of the program of study. The General Education Elective courses offered are designed to meet the themes of General Education as defined by the Ministry of Training Colleges and Universities. These themes are: Arts in Society, Civic Life, Social and Cultural Understanding, Personal Understanding, Understanding Sciences and Technology. Students will find general education courses in the Continuing Education catalogues marked with "(E)"

**PHYS EA201 - APPLIED MECHANICS**


**Prerequisite:** MATH MS171 Mathematics

**SAFE CN220 - WORKPLACE SAFETY**

Students will develop a full and practical understanding of construction workplace safety. This will include an introduction to the Occupational Health and Safety Act, Level 1 WHMIS, hoisting and rigging, fire safety, ladders and working platforms, trenching and shoring.

**SAFE 10037 - HEALTH AND SAFETY IN OUR ENVIRONMENT**

Occupational hygiene and safety in the workplace is a social and personal issue as well as a business issue. Examine how industrial hygiene, control of hazards, confined space entry, and safety for environmental process operations affects people, both physiologically and psychologically and the environment exponentially. Analyze what this means to the fully functioning person in the community and to advocacy issues.

**SSCI MP125 - INTRODUCTION TO URBAN PLANNING**

This course introduces the architectural student to the basic principles of municipal planning and the planning process as practiced in Ontario today. The student is also instructed in the implementation of planning policies by various levels of government through official plans, zoning by-laws, etc. Emphasis is placed on attaining a working knowledge of zoning by-laws.

**SSCI UP111 - INTRODUCTION TO PLANNING & GOVERNMENT**

This course will introduce the student to the basic principals of urban and regional planning and government organization in Ontario. The student will acquire an understanding of the history of planning and the built environment from a physical and social perspective.

**SURV EA141 - SURVEYING 1**

A broad overview of the field of geomatics including surveying, GPS, GIS, photogrammetry, remote sensing, geodesy and cartography. Particular emphasis will be placed on plane surveying techniques including horizontal, vertical, and angular measurements making use of levels and total stations.

**SURV 10000 - GEOMATICS**

An introduction to the collection, analysis and establishment of spatial information on the surface of the earth. Particular emphasis will be placed on plane surveying techniques including horizontal, vertical, and angular measurements making use of levels and total stations.

**SURV CN350 - SURVEYING AND LAYOUT**
This course introduces the student to the principles of construction surveying. The student will identify the various surveying instruments used by the construction industry, demonstrate proper care and use of equipment, and perform basic survey calculations and construction layout.

**Prerequisite: MATH MS244 Math 2 for Construction Technicians**

**SURV CV346 - SURVEYING 2**
The course will include theory in traverse calculations, transverse mercator grid system, stadia and horizontal circular curves. Field projects include layout of horizontal circular curves by the deflection and polar stakeout methods, traverse survey using T-2 Theodolites, Total Stations and various electronic distance measuring devices.

**Prerequisite: SURV EA141 Surveying**

**SURV CV388 - TOTAL STATION SURVEYS**
Circular curve calculations and layout by deflection and polar stakeout methods. Advanced surveying using Total Stations, Co-ordinate Geometry software and AutoCad.

**Prerequisite: SURV EA141 Surveying**

**TDRW AR362 - RESIDENTIAL DESIGN & CAD**

**Prerequisite: CADM CV206 CAD B**

**TDRW AR462 - COMMERCIAL DESIGN & CAD**
Drafting and design of small commercial building. Ontario Building Code, zoning, urban planning, working drawings. Building forms and function, materials and structure.

**Prerequisite: TDRW AR362 Residential Design & CAD**

**TDRW AR662 - CONTRACT DOCUMENT PREPARATION & PRESENTATION**
Production of a set of architectural working drawings for building. This set of drawings is to be presented for a professional jury critique.

**Prerequisite: BLDG AR562 Architectural Design**

**TDRW CV306 - STRUCTURAL DETAILING 1**
Concrete and reinforcing detailing (board drafting). The course also provides exposure to concrete beams, slabs, walls, and architectural and structural detailing.

**TDRW EA106 - DRAFTING FUNDAMENTALS & STANDARDS**
An introduction to the basic principles of drafting in the fields of architectural, construction, civil and transportation engineering. This course is intended for students with little or no board drafting skills in these areas. Students will learn basic drafting techniques and standards for presentations, lettering, dimensioning, sketching and rendering.

**TDRW EA107 – ENGINEERING GRAPHICS**
An introduction to the basic principles of board drafting and computer-aided drafting in the fields of architectural, construction, civil, and transportation engineering. This course enables an individual with little or no experience in manual drafting and AutoCAD to generate, edit, display and print simple engineering drawings using both manual drafting techniques and AutoCAD.

**TRAN CV314 - HIGHWAY TECHNOLOGY 1**
Calculation of horizontal and vertical roadway alignments and super elevation utilizing the Manual of Geometric Design (TAC).

**TRAN CV571 - HIGHWAY TECHNOLOGY A**
Principles of highway geometric design including road classification systems, cross-section element capacity and level of service, horizontal and vertical alignment and super elevation.

**Prerequisite: SURV CV346 Surveying 2**

**TRAN EA105 - TRANSPORTATION TECHNOLOGY**
An introduction to the field of Transportation Engineering Technology. The course includes vehicle and pedestrian characteristics, transportation terminology, and traffic flow.

**TRAN TR151 - TRANSPORTATION PLANNING 1**
An introduction to transportation planning. The course will focus on the methodology, techniques and procedures used in transportation site impact analyses and studies.

**TRAN TR251 - TRANSPORTATION PLANNING 2**
This course delivers the principles and techniques involved in the urban transportation planning process as related to travel demand models.

**Prerequisite: TRAN TR151 Transportation Planning 1**

**TRAN TR301 - TRAFFIC ENGINEERING 1**
The study of traffic engineering techniques and the use of legislation and traffic control devices in the overall control of vehicular and pedestrian activity.

**Prerequisite: TRAN EA105 Transportation Technology**

**TRAN TR310 - TRAFFIC STUDIES**
To provide the student with training in the planning, organization and conducting of traffic engineering surveys.

**TRAN TR401 - TRAFFIC ENGINEERING 2**
Signalized intersection capacity analysis, evaluation, and design utilizing the Canadian Capacity Guide Method. The course focuses on interrupted traffic flow operation.

**Prerequisite: TRAN TR301 Traffic Engineering 1**

**TRAN TR462 - TRANSPORTATION DESIGN 1**
An introductory course in street and highway geometric design. The student is given training in the procedures and standards
for roadway design, and the co-ordination between road plan and profile through the use of a major project.

**Prerequisite:** SURV EA141 Surveying

**TRAN TR503 - TRAFFIC ENGINEERING 3**
Capacity analysis, evaluation, and design of free flow transportation facilities. The course focuses on uninterrupted traffic flow operation.

**Prerequisite:** TRAN EA105 Transportation Technology

**TRAN TR522 - TRANSPORTATION PLANNING 3**
The transportation planning process as applied to the long-range comprehensive urban transportation plan. The course includes computer techniques, the role of public participation and an examination of environment considerations in transportation planning.

**Prerequisite:** TRAN TR251 Transportation Planning 2

**TRAN TR562 - TRANSPORTATION DESIGN 2**
A continuation of Design 1 focusing on route location, the functional planning and design of streets, highways, and associated facilities.

**Prerequisite:** TRAN TR462 Transportation Design 1

**TRAN TR592 - TRANSPORTATION PROJECT 1**
Students employ their transportation and problem-solving skills to investigate and develop a plan of implementation for various assigned transportation problems. The end product is a technical report and oral presentations summarizing the results.

**TRAN TR593 - PUBLIC TRANSPORTATION**
The planning, design and operation of public transit systems in Canada. Topics include funding, administrations, operational studies, route planning and scheduling.

**TRAN TR692 - TRANSPORTATION PROJECT 2**
The student chooses a transportation-related topic (subject to Department approval) and performs an investigation and analysis, followed by a recommended plan of action. The process and results are presented through a formal report and oral presentations.

**TRAN 10000 - TRAFFIC ENGINEERING 4**
Advanced traffic analysis and demand management techniques and software applications. Topics include urban computer-based traffic control signal systems; signal network optimization software; highway capacity analysis software; freeway traffic management systems; and current issues, trends and advances in traffic engineering.

**TRAN 10001 - ACTIVE TRANSPORTATION**
Explore non-motorized modes of transportation and their associate facilities. Investigate pedestrian and cycling transportation initiatives and master plans. Discover how walking and cycling modes serve the mobility needs of the urban environment.

**UPLN MP126 - INTRODUCTION TO URBAN PLANNING**
To introduce Transportation Engineering students to the relationships between transportation engineering and the planning process in Ontario, the implementation of municipal planning and basic planning and development design concepts. Emphasis is placed on the development of land use plans and their implications for transportation engineering.

**UPLN UP110 - DATA COLLECTION & RESEARCHING**
This course will provide the student with the ability to research, collect and record planning information. Various sources of information will be explored. Recording and presentation of material will be stressed.

**UPLN UP221 - MAPPING & SUBDIVISION DESIGN**
This course introduces the student to the preparation of base maps, boundary surveys, site plans and subdivision design.

**UPLN UP322 - APPLIED SITE PLANNING**
This course introduces the student to more complex technical graphic problems involving subdivision, site design and topographical adjustment. Students will learn to read various types of plans and become familiar with terminology. Students will also develop basic topographical model making skills.

**Prerequisite:** CADM UP222 Computer Graphics

**UPLN UP411 - APPLIED PLANNING LAW**
In this course students learn the principals of planning practise regarding the preparation and presentation of technical planning reports. Students will analyse and write technical planning reports.

**Prerequisite:** LAWS UP211 Planning Law 1

**UPLN UP421 - COMMUNITY PLANNING DESIGN**
In this course students must utilize academic, design and graphic skills to undertake the design preparation and presentation of a multi-use development proposal at the neighbourhood.

**Prerequisite:** BLDG UP321 Fundamentals of Urban Design

**UPLN UP422 - COMMERCIAL SITE & LANDSCAPE DESIGN**
Development of the ability to visualize the three-dimensional consequences of sub-divisions and site plans through perspective drawing techniques.

**Prerequisite:** CADM UP222 Computer Graphics

**WELD ME220 - WELDING FUNDAMENTALS**
Students will develop their knowledge and safe operation of oxy-acetylene metal cutting, brazing, welding and arc welding.

**Prerequisite:** SAFE CN220 Workplace Safety

**WORK UP400 - FIELD INTERNSHIP**
This involves a three week placement for Urban & Regional Planning Technicians - GIS in a planning office to gain insight and experience the operation and practices of a planning office.
Prerequisite: LAWS UP311 Planning Law 2; BLDG UP321 Fundamentals of Urban Design

Every reasonable effort is made to keep this handbook up to date as possible. Applicants, students and graduates should always consult the official College website in addition to using the information found in this document. The College reserves the right to make changes to the program of studies and coop rotations as required.