
Construction Methods and Materials I

Architecture, Civil and Building Science

Course Number: ARC8421	Co-Requisites: N/A	Pre-Requisites: N/A
Applicable Program(s): Multiple Programs	AAL: Multiple Levels	Core/Elective: Multiple Core/Elective
Prepared by:	D Shouldice, Professor	
Approved by:	Eric Marois, Chair, ACEBS	
Approval Date:	Tuesday, July 3, 2018	
Approved for Academic Year:	2018-2019	
Normative Hours:	45.00	

Course Description

Students are introduced to the physical characteristics of construction materials including their manufacture and use in wood-frame construction. Various structural components in a typical residential building are designed to ensure compliance with Part 9 of the Ontario Building Code. Residential stair systems are also examined.

Relationship to Vocational Learning Outcomes

This course contributes to your program by helping you achieve the following Vocational Learning Outcomes:

0018X01FWO - Architectural Technology

- VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)
- VLO 2 Prepare, read, interpret, and revise drawings, and other graphical representations used in building projects. (T, A,)
- VLO 7 Contribute to the design of architectural projects. (T, A,)

0018X03FWO - Architectural Technology

- VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)
- VLO 2 Prepare, read, interpret, and revise drawings, and other graphical representations used in building projects. (T, A,)

VLO 7 Contribute to the design of architectural projects. (T, A,)

0018Y03FWO - Architectural Technology

VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)

VLO 2 Prepare, read, interpret, and revise drawings, and other graphical representations used in building projects. (T, A,)

VLO 7 Contribute to the design of architectural projects. (T, A,)

0188W01FWO - Architectural Technician

VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)

VLO 2 Assist in the preparation, reading, and interpretation of drawings, and other graphical representations used in building projects. (T, A,)

VLO 7 Assist in the development of architectural designs. (T, A,)

0188W03FWO - Architectural Technician

0188X03FWO - Architectural Technician

0188Y03FWO - Architectural Technician

VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)

VLO 2 Assist in the preparation, reading, and interpretation of drawings, and other graphical representations used in building projects. (T, A,)

VLO 7 Assist in the development of architectural designs. (T, A,)

0188X01FWO - Architectural Technician

VLO 1 Communicate with clients, contractors, other building professionals, and approval authorities. (T, A,)

VLO 2 Assist in the preparation, reading, and interpretation of drawings, and other graphical representations used in building projects. (T, A,)

VLO 7 Assist in the development of architectural designs. (T, A,)

Relationship to Essential Employability Skills

This course contributes to your program by helping you achieve the following Essential Employability Skills:

- EES 1 Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. (T, A,)
- EES 2 Respond to written, spoken or visual messages in a manner that ensures effective communication. (T, A,)
- EES 3 Execute mathematical operations accurately. (T, A,)
- EES 4 Apply a systematic approach to solve problems. (T, A,)

EES 6	Locate, select, organize and document information using appropriate technology and information systems. (T, A,)
EES 10	Manage the use of time and other resources to complete projects. (T, A, CP,)
EES 11	Take responsibility for one's own actions, decisions and consequences. (T, A,)

Course Learning Requirements/Embedded Knowledge and Skills

When you have earned credit for this course, you will have demonstrated the ability to:

1.) Select the appropriate building material and/or building element for a specific application

recognize the properties and characteristics of building materials and apply the correct building element

2.) Determine the code requirements associated with the selection and use of a variety of building materials and building elements

select the appropriate standard for the intended application from Part 9 of the Ontario Building Code

3.) Determine the appropriate size of wood framing elements for use in a house

know the principles of light wood frame construction and use the appropriate tables in Part 9 of the Ontario Building Code

4.) Calculate the requirements for a private stair system

apply the principles of stair design and ensure compliance with Part 9 of the Ontario Building Code

5.) Select an appropriate foundation system

recognize the basic components of a typical residential foundation system and ensure compliance with Part 9 of the Ontario Building Code

6.) Determine an appropriate foundation drainage system

apply the principles of dampproofing and drainage systems and ensure compliance with Part 9 of the Ontario Building Code

7.) Develop basic construction details

determine the appropriate configuration of materials and elements to solve construction issues

Learning Resources

Required Texts:

Building Construction, Principles, Materials, and Systems, 3e
etextbook

Building Construction Illustrated, 5e
etextbook

2012 Ontario Building Code Compendium
ISBN: 978-1-4606-2444-9 [set]

Canadian Wood Frame House Construction, Latest Edition
Canada Mortgage & Housing [CMHC]
FREE: download from Publications and Reports - CMHC

Recommended Texts:

Canadian Wood Frame House Construction Glossary of Housing Terms
CMHC

UNDERSTANDING CONSTRUCTION DRAWINGS for HOUSING and SMALL BUILDINGS, Tom Stephenson
ISBN978-0-17-625203-8

Other Resources: To be provided with lectures

Learning Activities

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- Lectures, in-class & take home exercises
 - Audio-visual presentations
 - Reading Assignments
 - Examining provided samples

Evaluation/Earning Credit

The following list provides evidence of this course's learning achievements and the outcomes they validate:

Assignment(s) (5%)

Validates Outcomes: CLR 1, CLR 2, EES 2, EES 4, EES 6, EES 11

Midterm Exam(s) (10%)

Validates Outcomes: CLR 1

Midterm Exam(s) (25%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, EES 3

Participation (5%)

Validates Outcomes: CLR 7, EES 10, EES 11

Project(s) (25%)

Validates Outcomes: CLR 1, CLR 2, CLR 7, EES 1, EES 6, EES 10, EES 11

Final Exam (30%)

Validates Outcomes: CLR 1, CLR 2, CLR 3, CLR 4, CLR 5, CLR 6, EES 3, EES 4

Students are expected to meet evaluation and completion deadlines as stated in course outline and course section information documents. In circumstances where evaluation and/or completion deadlines are missed or student performance has been affected by a temporary or permanent disability (including mental health), interim or retroactive accommodations may be considered. In such instances, please consult your course faculty member. For other situations where deferral of evaluations may be warranted, please refer to college policy AA21.

Prior Learning Assessment and Recognition

Students who wish to apply for prior learning assessment and recognition (PLAR) need to demonstrate competency at a post-secondary level in all of the course learning requirements outlined above. Evidence of learning achievement for PLAR candidates includes:

- Other: Portfolio: of hand drawn architectural drawings for a small residential building
Challenge Exam: a minimum grade of 60% is required.
Or
Appropriate BCIN Certification

Grade Scheme

Final Grade	Mark Equivalent	Numeric Value	Final Grade	Mark Equivalent	Numeric Value
A+	90% - 100%	4.0	A	85% - 89%	3.8
A-	80% - 84%	3.6	B+	77% - 79%	3.3
B	73% - 76%	3.0	B-	70% - 72%	2.7
C+	67% - 69%	2.3	C	63% - 66%	2.0
C-	60% - 62%	1.7	D+	57% - 59%	1.4
D	53% - 56%	1.2	D-	50% - 52%	1.0

Course Related Information

The following information is program-specific:

The following regulations apply to students in the Architectural Technician, Architectural Technology and Green Architecture programs of study.

Any circumstances that fall outside the following parameters have to be discussed with the Chair of the department for special consideration. The professor will apply the rules as described in the following paragraphs.

Laptops, Phones and Other Mobile Devices

During class/lab time these devices may only be used to access course material, take notes and research as required by your professor.

Gaming and Social Media

Computers in dedicated labs are not to be used for recreational purposes. This may result in a loss of lab privileges.

Attendance

To receive a passing grade and validate all course learning requirements, students must attend at least 75% of the scheduled classes/labs. If you are absent for more than 25% of class/lab time or are absent from two consecutive classes/labs, you may be required to meet with the Chair of the department to explain your plans for recouping the information you missed and to justify why you should remain in the course.

Group and Individual Work

Some courses are composed of group, team and/or individual work. Students must successfully pass the individual elements within the course before the group marks are added. Students must be able to demonstrate individual knowledge to successfully pass the course.

Late Policy

All core Architecture courses have a late submission policy. Service courses (English, Math and General Education) may choose to exempt students from this policy. All projects and or assignments that are deemed late according to the date and time in the Course Section Information (CSI) will receive a grade of zero. Under special circumstances the professor can make an exception if the information is communicated before the due date and if the work in progress is submitted electronically by the original due date. Any "after the fact" request will be discussed with the Chair of the department. Valid and proper documentation may be provided to substantiate the situation.

Student Academic Responsibilities

You are responsible for the following:

- attending all classes and on time;
- maintaining a folder for all work you do in the course;
- knowing the due dates for assignments and meeting these dates;
- handing in assignments that are your own work;
- maintaining multiple backups of the work you do in the course (backup daily); and
- keeping a copy of all assignments you submitted for marks in the course.

Code of Conduct

All members of the Algonquin Community will undertake to:

- conduct themselves in a manner which respects and promotes the dignity of others, and interact with others in the

community in a spirit of cooperation, goodwill and mutual respect;

- conduct themselves in an honest and ethical manner, refraining from misrepresenting themselves, their work or qualifications in any manner, and refraining from violence, abuse, harassment and discrimination of any kind; and
- assist in the maintenance of good order within their environment and refrain from creating a disturbance or a disruption to activities.

See Algonquin College Policy SA07: Student Conduct

Department Related Information

Plagiarism and Academic Dishonesty

Your teachers are evaluating your work on the basis that it is yours and that it demonstrates your learning of the concepts. Any time a professor suspects plagiarism or academic dishonesty, she/he will discuss the situation with the Chair of the department. If the professor has enough evidence to convince the Chair, all the students involved will be contacted and invited to comment. If you are accused of plagiarism or academic dishonesty, be prepared to defend yourself as if you were a victim in this situation. Your comments to this allege situation are very important since any omission to respond within two school days will be considered as an agreement with the situation reported.

If you are in doubt of what is considered plagiarism or academic dishonesty, you can always validate it in advance with your professors. They will explain what they consider acceptable and not acceptable. Please note that each student is responsible to protect their own work and to make sure it is not used by other students as their own.

Resolution process

Each time there is a situation that requires an action or a clarification, the first step is to communicate with the professor involved or to reach an academic advisor and ask her/him about it. If there is no resolution, you should be discussing this with the coordinator. If the situation persists, you need to bring this up with the Department Chair. The sooner a situation is identified the better the chance to get a resolution. Not reporting an issue during the term is not an acceptable reason for requesting a grade review at the end of the term.

College Related Information

Email

Algonquin College provides all full-time students with an e-mail account. This is the address that will be used when the College, your professors, or your fellow students communicate important information about your program or course events. It is your responsibility to ensure that you know how to send and receive e-mail using your Algonquin account and to check it regularly.

Students with Disabilities

If you are a student with a disability, you are strongly encouraged to make an appointment at the Centre for Accessible Learning to identify your needs. Ideally, this should be done within the first month of your program, so that a Letter of Accommodation (LOA) can be provided to your professors. If you are a returning student, please

ensure that professors are given a copy of your LOA each semester.

Retroactive Accommodations

Students are expected to meet evaluation and completion deadlines as stated in course outline and course section information documents. In circumstances where evaluation and/or completion deadlines are missed or student performance has been affected by a temporary or permanent disability (including mental health), interim or retroactive accommodations may be considered. In such instances, please consult your course faculty member. For other situations where deferral of evaluations may be warranted, please refer to college policy AA21.

Academic Integrity & Plagiarism

Adherence to acceptable standards of academic honesty is an important aspect of the learning process at Algonquin College. Academic work submitted by a student is evaluated on the assumption that the work presented by the student is his or her own, unless designated otherwise. For further details consult Algonquin College Policies AA18: Academic Dishonesty and Discipline and AA20: Plagiarism

Student Course Feedback

It is Algonquin College's policy to give students the opportunity to share their course experience by completing a student course feedback survey for each course they take. For further details consult Algonquin College Policy AA25: Student Course Feedback

Use of Electronic Devices in Class

With the proliferation of small, personal electronic devices used for communications and data storage, Algonquin College believes there is a need to address their use during classes and examinations. During classes, the use of such devices is disruptive and disrespectful to others. During examinations, the use of such devices may facilitate cheating. For further details consult Algonquin College Policy AA32: Use of Electronic Devices in Class

Transfer of Credit

It is the student's responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.

Note: *It is the student's responsibility to refer to the Algonquin College Policies website for the most current information at <http://www.algonquincollege.com/policies/>*

Legend

Terms

- ALO: Aboriginal Learning Outcome
- Apprenticeship LO: Apprenticeship Learning Outcome
- CLR: Course Learning Requirement
- DPLO: Degree Program Learning Outcome
- EES: Essential Employability Skill
- EOP: Element of Performance

- GELO: General Education Learning Outcome
- LO: Learning Outcome
- PC: Program Competency
- PLA: Prior Learning Assessment
- PLAR: Prior Learning Assessment and Recognition
- VLO: Vocational Learning Outcome

Assessment Levels

- T: Taught
- A: Assessed
- CP: Culminating Performance