



**SCMT 115: CONSTRUCTION METHODS (3,3,0)**  
**Sustainable Construction Management Technology**  
**Okanagan College – Penticton Campus**

**Instructor:** Rishia McDowell

**Contact Information:** RMcDowell@okanagan.bc.ca  
(778) 931-0179

**Office Location & Hours:** via Collaborate, Wednesdays from 2 until 5

**Course Schedule:** Wednesday (LEC) 9:30-12:00pm  
Wednesday (LAB-L51) 12:30-3:30pm

**Credit Hours:** (3)

**Presentation Format:** Lecture 3 hrs/wk, Lab 3 hrs/wk

**Prerequisite:** Admission to the SCMT program

**Co-requisite:** None

**1. COURSE DESCRIPTION:**

This introductory course on construction methods provides an overview of the equipment and materials associated with construction projects. Textbook is available here:

<https://okanagancollege-store.vitalsource.com/products/building-construction-principles-materials-amp-madan-l-mehta-walter-v9780134443478>

Learners study the basic principles of equipment and material selection, safety implications and operational procedures. Learners will understand how to construct a range of different construction systems and details that are commonly used in projects. Many of these construction elements are related to foundations and formwork.

**2. MAJOR TOPICS**

- WorkSafeBC, Occupational Health and Safety for supervisors, WHMIS
- BC Building Code, General Requirements (Division 1), Building Science basics,
- Existing Conditions (Division 2) and Heavy Equipment, Excavations
- Materials: Concrete, Masonry, Metals, and Wood, Plastics, & Composites (Divisions 3 to 6)

**3. COURSE EVALUATION**

Course Component	Percentage of Final Course Grade
Assignments	25
Attendance and Class Participation	10
Reading Quizzes	25
Project work	20
Final exam	20
<b>Total</b>	<b>100</b>

#### 4. TENTATIVE CLASS SCHEDULE

Class Schedule	Lecture Agenda	Lab Activities	Deliverable(s)
<b>Week 1</b> (Sept. 9)	Orientation. Group info session. Reading assignment Safe Work Practices in residential Construction		
<b>Week 2</b> (Sept. 16)	<ul style="list-style-type: none"> <li>Safety in construction</li> <li>Introduction to WorkSafeBC, Occupational Health and Safety, and PPE</li> </ul>	Reading: WorkSafe BC <a href="#">Workers Compensation Act and OHS provisions</a>  Video and facilitated group discussion: <a href="#">young and new worker video</a>  Video and facilitated group discussion <a href="#">Jack Thomas video</a> ,  Video and facilitated group discussion: <a href="#">The Supervisor video</a>  Reading: Chapter 1 Building Construction Reading: WHMIS at Work Reading: <a href="#">Safe Work Practices in Residential Construction</a>	Screen shot WCB ‘what’s wrong with this photo’ exercise. (participation)  List five things analysis of “Jack Thomas” video based on WCB reading.  PPE assignment  Participation discussion
<b>Week 3</b> (Sept. 23)	<ul style="list-style-type: none"> <li>Division 1: General Requirements</li> <li>MasterFormat and contract delivery</li> <li>Building Process</li> <li>Introduction to WHMIS</li> </ul>	Power Point and facilitated group discussion: Chapter 1, <i>Building Construction</i> text  Building process discussion  Reading: Chapter 10  Reading: <a href="#">Strategies for Collaborative Construction case studies</a>  Reading: <a href="#">Keeping the heat in</a> Reading: Chapter 6	PPE assignment due  Screen shot WCB ‘what’s wrong with this photo’ exercise (participation)  WHMIS assignment  Building permit review and fill out application  Participation discussion
<b>Week 4</b> (Sept. 30)	<ul style="list-style-type: none"> <li>Building codes</li> <li>Material Properties and WHMIS</li> <li>Division 2: Existing Conditions</li> <li>Introduction to Heavy Equipment</li> </ul>	Reading and facilitated group discussion: Chapter 2, <i>Building Construction</i> text\ Reading: Chapter 10  <a href="#">BC Building Code</a> activity	WHMIS assignment due  Building Permit Application deadline

			Assignment: Excavation calculation Participation discussion
<b>Week 5</b> (Oct. 7)	<ul style="list-style-type: none"> <li>Division 2: Existing Conditions (continued)</li> <li>Division 3: Concrete and concrete forming</li> </ul>	Reading: Chapter 21 and Chapter 22 Reading Chapter 11 Concrete calculation (footings)	Screen shot WCB ‘what’s wrong with this photo’ exercise Excavation assignment due  Concrete calculation – footings assignment  Participation discussion
<b>Week 6</b> (Oct. 14)	<ul style="list-style-type: none"> <li>Division 3: Concrete and concrete forming</li> </ul>	Reading Chapter 12 Reading Chapter 22 Reading Chapter 21 Concrete calculation (foundation walls)	Footings assignment due  Concrete calculations – foundation walls calculation  Participation discussion
<b>Week 7</b> (Oct. 21)	<ul style="list-style-type: none"> <li>Division 4: Masonry</li> </ul>	Reading: Chapter 24 and Chapter 25 CMU foundation wall calculation	Foundation wall calculation due  Assignment: Floor system  Participation discussion
<b>Week 8</b> (Oct. 28)	<ul style="list-style-type: none"> <li>Division 5: Metals</li> </ul>	Reading: Chapter 18 & Chapter 19	Floor system assignment due  Participation discussion
<b>Week 9</b> (Nov. 4)	<ul style="list-style-type: none"> <li>Division 6: Wood, Plastics, and Composites</li> </ul>	Reading: Chapter 20 Reading: Chapter 13 <a href="#">BC Building Code</a> activity	Participation discussion
<b>Week 10</b> (Nov. 11)	<ul style="list-style-type: none"> <li>Holiday</li> </ul>		
<b>Week 11</b> (Nov. 18)	<ul style="list-style-type: none"> <li>Division 6: Wood, Plastics, and Composites</li> </ul>	Reading: Chapter 13 and Chapter 14 Reading Chapter 6 Project work	Participation discussion
<b>Week 12</b> (Nov. 25)	<ul style="list-style-type: none"> <li>Division 6: Wood, Plastics, and Composites, cont’d</li> </ul>	Reading Chapter 15 and 16 <a href="#">BC Building Code</a> activity Project work	Participation discussion
<b>Week 13</b> (Dec. 2)	<ul style="list-style-type: none"> <li>Division 6: Wood, Plastics, and Composites, cont’d</li> </ul>	Project work <a href="#">BC Building Code</a> activity Discussion <a href="#">Brock Commons construction process - Mass Timber</a>	Participation discussion

<b>Week 14</b> (Dec. 9)	<ul style="list-style-type: none"><li>• <b>Review week.</b></li></ul>		
<b>Exam Period</b> (Dec. 16)	<ul style="list-style-type: none"><li>• Final Exam Period</li></ul>		

## 5. COURSE MATERIALS

- (1) **Required:** Laptop
- (2) **Required text:** Mehta, M., Scarborough, W., Armpriest, D. (2016) *Building Construction: Principles, Materials and Systems* (3<sup>rd</sup> ed.). Hoboken NY: Pearson Education
- (3) Supplementary text: Spence, W. P., Kultermann, E. (2011). *Construction Materials, Methods, and Techniques, Building for a Sustainable Future* (3<sup>rd</sup> ed.). Clifton Park, NY: Delmar, Cengage Learning.
- (4) Supplementary text: Peurifoy, R.L., Schexnayder, C.J., Shapira, A., Schmitt, R.L., (2011). *Construction Planning, Equipment, and Methods* (8<sup>th</sup> ed.). New York, NY: McGraw Hill

## 6. LEARNING OUTCOMES

- Describe a variety of equipment and materials available and their roles in the construction industry;
- Distinguish the advantages and disadvantages of different material types and explain why certain materials are best suited for certain applications;
- Recognize dangers inherent in construction sites such as hand tools, machinery and heavy equipment; explain the safety procedures used to prevent injury;

## 7. OCCUPATIONAL HEALTH & SAFETY

As a new worker to a job site, you will be expected to follow the rules and guidelines pertaining to your employment. All job sites should follow the same rules when it comes to PPE (personal protective equipment). As a new employee you will be expected to wear the proper clothing to protect you against the elements. You will be expected to provide your own work gloves and appropriate safety footwear and Safety headgear.

Your new employer is expected to supply you at no cost, with distinguishing apparel (safety vests of any colour as long as it is reflective and has fluorescent trim). The employer will also supply any other safety training and/or personal protective equipment that is specialized to your new employment.

The employer must ensure that a worker who wears personal protective equipment is adequately instructed in the correct use, limitations and assigned maintenance duties for the equipment to be used. If specialized safety training courses are required for you job then the employer must provide to you free of charge.

The employer will also have to discuss with you the following:

- Location of first aid equipment
- Reporting accidents, injuries, and unsafe working conditions
- Safe work procedures
- Right to refuse unsafe work
- Locations of fire exits. Routes and safe gathering areas
- Emergency procedures

On a new job site, you will be exposed to different types of hazards depending on what you are doing. The main thing is to be aware of your surroundings, and before moving from one section to another take 1 or 2 seconds and look around to make sure your path is safe. The next important thing is to make sure you know your escape route(s) in case something happens. Make sure to take a minute and walk it so you are familiar with it and it is clear from obstructions. Your responsibility is to speak up when you feel unsafe or your equipment is damaged or needs to be replaced. Your safety is your responsibility.

For more information on your rights and responsibilities with personal protective equipment please go to <http://www2.worksafefbc.com/publications/ohsregulation/Part8.asp>.

## 8. SCMT DEPARTMENT POLICIES

### SCMT Department Passing Grade Requirements Policy:

Students must obtain a passing grade (at least 50%) in both the lecture component and the laboratory component of the course. If the student receives a failing grade (less than 50%) in either the lab or lecture component, the final mark for the whole course will be no more than 49%.

### SCMT Department Attendance Policy:

Fall 2020 and Winter 2021 academic year courses will be delivered in a live on-line format. While it is strongly encouraged that students attend all online lecture and laboratory sessions, attending class is the prerogative of the student. All course resources will be accessible within the respective course Moodle shells. SCMT courses use a dynamic delivery model and in-class group activities are the norm. Participating in these activities benefits all students. Should a student not be able to attend a live lecture or laboratory session, the following should be considered:

- It is the student's responsibility to review the course resources and remain up-to-date with the course;
- The SCMT instructors are not required to record the online sessions;
- All marked in-class assessments will only be open to the students during the allotted online timeframe;
- Arrangements for out-of-time assessments will only be made for special circumstances and is at the discretion of the course instructor; and
- Attending the SCMT program while outside of British Columbia or Canada does not constitute a special circumstance.

### SCMT Department Late Policy:

All late assignments and laboratories will have 10% per day deducted from the final mark. The maximum number of overdue days in which work will be accepted is seven days. Any work not submitted within seven days will be marked as incomplete. There are no exceptions to this rule unless accompanied by a doctor's note.

### SCMT Department Collection of Student Work Policy:

This is a requirement of the accreditation process. Samples of student work will be collected during the term. At the end of the semester, each professor is responsible for collecting a complete copy of the best student's work. This will include class notes, assignments, labs, exams etc. This copy will be archived.

### SCMT Department Citation Style:

All citations made within course deliverables (assignments, midterms, etc.) are to be cited using the APA citation style. Information regarding the APA citation style can be found at the following link:

<http://www.okanagan.bc.ca/Assets/Departments+%28Administration%29/Library/PDFs/apa.pdf>

## 9. OKANAGAN COLLEGE POLICIES

### Okanagan College Academic Misconduct Policy:

Any incidents of academic misconduct, as outlined in the Academic Offences policy in the Okanagan College calendar, may result in a mark of 0% or another consequence permitted by the policy. In cases of severe or repetitive misconduct, the Dean's office and the College Registrar will be notified and the student may be given a failing grade for the course or a more serious consequence as permitted by the policy, such as expulsion. The Academic Offences policy can be located online at the following link:

<http://webapps-1.okanagan.bc.ca/ok/calendar/Calendar.aspx?page=AcademicOffenses>

### Okanagan College Student Notification of OC Policies:

Okanagan College requires that students are informed of acceptable student conduct specifically relating to OC Student Non-Academic Conduct and Student Academic Offences policies.

Student Non Academic Conduct: What Is The Disruption Of Instructional Activities?

At Okanagan College (OC), disruption of instructional activities includes student “conduct which interferes with examinations, lectures, seminars, tutorials, group meetings, other related activities, and with students using the study facilities of OC”, as well as conduct that leads to property damage, assault, discrimination, harassment or fraud. Penalties for disruption of instructional activities can include a warning and/or a failing grade on an assignment, examination or course, or possible suspension from OC. The complete policy is available online at:

[http://www.okanagan.bc.ca/Assets/Departments+\(Administration\)/Legal+Affairs/Student+Non-Academic+Conduct+Policy.pdf](http://www.okanagan.bc.ca/Assets/Departments+(Administration)/Legal+Affairs/Student+Non-Academic+Conduct+Policy.pdf)

## 10. STUDENT ACADEMIC CONDUCT

### **What Is Cheating?**

“Cheating includes but is not limited to dishonest or attempted dishonest conduct during tests or examinations in which the use is made of books, notes, diagrams or other aids excluding those authorized by the examiner. It includes communicating with others for the purpose of obtaining information, copying from the work of others and purposely exposing or conveying information to other students who are taking the test or examination.”

Students must submit independently written work. Students may not write joint or collaborative assignments with other students unless the professor approves it in advance as a group/team project. Students who share their work with other students are equally involved in cheating.

### **What Is Plagiarism?**

Plagiarism is defined as “the presentation of another person’s work or ideas without proper or complete acknowledgement.” It is the serious academic offence of reproducing someone else’s work, including words, ideas and media, without permission for course credit towards a certificate, diploma, degree and/or professional designation. The defining characteristic is that the work is not yours.

“Intentional plagiarism is the deliberate presentation of another’s work or ideas as one’s own.” Intentional plagiarism can be a copy of material from a journal article, a book chapter, data from the Internet, another student, work submitted for credit in another course or from other sources.

“Unintentional plagiarism is the inadvertent presentation of another’s work or ideas without proper acknowledgement because of poor or inadequate practices. Unintentional plagiarism is a failure of scholarship; intentional plagiarism is an act of deceit.”

### **What Are The Students’ Responsibilities To Avoid Plagiarism?**

Students have a responsibility to read the OC Plagiarism Policy and Procedures outlined in the OC calendar, which is available online at:

<http://webapps-1.okanagan.bc.ca/ok/calendar/Calendar.aspx?page=AcademicOffenses>

“Students are responsible for learning and applying the proper scholarly practices for acknowledging the work and ideas of others.” Students who are unsure of what constitutes plagiarism should refer to the UBC publication “Plagiarism Avoided; Taking Responsibility for your Work”. This guide is available in OC bookstores and libraries.

Students must acknowledge the sources of information used on all their assignments. This usually involves putting the authors’ name and the year of publication in parentheses after the sentence in which you used the material, then at the end of your paper, writing out the complete references in a Reference section.

Students are expected to understand research and writing techniques and documentation styles. Unless otherwise directed by the professor, use the American Psychological Association (APA) or Modern Language Association (MLA) style and cite references using the APA guidelines. A copy of the APA manual is available in the OC libraries, and the library website has online resources available on both major citing styles.

### **What Are The Penalties For Plagiarism And Cheating?**

Okanagan College professors may actively monitor student work for plagiarism or cheating and will follow the Okanagan College Policies when an offense is suspected. A student found to have committed an offense may receive a formal letter of reprimand outlining the nature of the infraction, or further disciplinary action depending on the severity of the offense or whether this is a repeat occurrence. The Dean’s Office of the Science, Technology and Health portfolio, along with the College Registrar, record and monitor all reported instances of plagiarism and cheating.