

**Western University**  
**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
CEE9518 - Building Information Modelling

**Course Description:**

The objective of this course is to provide essential knowledge required to manage and implement BIM technologies in construction process, provide professionals with relevant skills to use BIM in the design and construction of facilities, with an emphasis on structural and civil roles, and Use of BIM software in the process of preparing the models, analysis and documentation.

**Course Hours:** Tuesday and Friday 9:30-12:30

**Course Credit:** half course, one term

**Dates:** Course: May 16, 2017 – June 23, 2017

Lectures/Labs/ Computer Labs: two 3 hour sessions a week, half lecture, half lab with a break in between

Final Quiz: June 23, 2017

**Instructors:** John Dickinson, Ph.D., P.Eng, [john.dickinson@uwo.ca](mailto:john.dickinson@uwo.ca), [Course Coordinator]  
Paul Woodard, Ph.D., [pwoodard@uwo.ca](mailto:pwoodard@uwo.ca)

**Grading:**

Assignments: 30%

Computer Lab: 40%

Three Quizzes: 30% (2 online during course and a final in class evaluation)

For the Policy on Accommodation for Illness and a downloadable SMC see:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

[downloadable Student Medical Certificate (SMC):

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf) ]

Students seeking academic accommodation on illness grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

**Prerequisite:** None

**Corequisite:** None

**Antirequisite:** None

## **Course Objectives:**

- Provide essential knowledge required to manage and implement BIM technologies in construction process
- Provide professionals with relevant skills to use BIM in the design and construction of facilities, with an emphasis on structural and civil roles
- Use of BIM software in the process of preparing the models, analysis and documentation

## **Topics Areas:**

### **Review of Canadian Construction System**

An overview of common built asset procurement practices in the Canadian construction sector with emphasis on the exchange and use of information.

### **Introduction to BIM**

Contrasting Building Information Modelling to Computer-Aided Design, its relevance to the traditional and evolving design and construction processes, BIM terminology, benefits, drivers, workflows and challenges including relevance to structural and civil practitioners.

Introduction to the use of BIM outside the design and construction phases of the facility life-cycle.

### **BIM Project Execution Plans (PxP)**

BIM as a platform for coordination, collaboration, communication and decision making.

Overview of a systematic approach to decision making, documentation, and specifying BIM commitments in a project. Assembling the results into structured plans and protocols to guide project execution and be linked with the project contract.

### **BIM Roles and Responsibilities**

Overview of common BIM roles and responsibilities within design and construction of projects.

### **Model Element Table and Level of Development**

Review of the meaning and implications of Level of Development and Model Element Tables to model information exchanges in a project.

The application of different modeling standards to deliver models as part of project commitments.

### **Quality and BIM**

Overview of the role BIM processes and technologies play in the QA/QC activities of a construction project.

### **Technology**

BIM can be achieved with a variety of different software tools. An introduction to one of the more common BIM technology platforms in Canada with an emphasis on fundamentals that are common to many approaches.

**Textbook:** Institute for BIM in Canada, BIM Toolkits  
Canadian Practice Manual for BIM, buildingSMART Canada  
BIM Project Execution Planning Guide 2.1, Penn State University

**Software:** Lab installed version Revit (currently 2016), Microsoft Office

**Academic Offences:**

- Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:  
[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_grad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf)
- Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.