

# SYLLABUS

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## SCHEDULE

October 19 - December 11  
Monday 3:30pm - 5:00pm Addams 106

Week 01	Monday, October 23	Buildings + Site Buildings + BIM
Week 02	Monday, October 30	Buildings + Concrete
Week 03	Monday, November 6	Buildings + Wood + Metal
Week 04	Monday, November 13	Buildings + BIM
Week 05	Monday, November 20	Buildings + Glass <i>Note: This class will be held on Zoom. See Canvas for link</i>
Week 06	Monday, November 27	Buildings + Masonry + Earth
Week 07	Monday, December 4	Buildings + BIM
Week 08	Monday, December 11	Buildings + Plastic + Composites

## COURSE DESCRIPTION

Throughout this semester this course will examine in depth how building systems come together and how buildings are constructed. This will be looked at from two directions. Firstly from what the different components are, ranging from the land the building is on to the HVAC systems within them.

The second aspect will be how this information is compiled and shared outside of the architecture firm so that it can be constructed. For this the course will rely on Building Information Modeling (BIM). This model and subsequent set of drawings will be created using information from lectures, tutorials and studio.

## COURSE OBJECTIVES

- As a result of taking this course students will:
- Become familiar with a range of building materials, methods of construction, performance standards and representational techniques used in the depiction of modern building construction.
  - Become aware of coordination that is required to bring architectural projects to reality.
  - Acquire first hand modeling and analysis skills in the development of a Building Information Model.

## COURSE STRUCTURE

Lectures: Across a series of lectures students will be introduced to a variety of construction aspects and building materials. Along with examining the many uses of the materials at a range of scales students will be asked to think about the other aspects of coordination that need to occur. Discussions within Canvas will be used to examine these topics in advance of classes and

facilitate in class discussions.

Workshops: Across hands on workshops and assignments, students will acquire the knowledge and the skill needed for the production of BIM based digital models. Students will utilize their current studio projects to model components of their project and produce drawings and details.

## RECOMMENDED READING

- Andrew Watts, Modern Construction Handbook (Springer Wein New York, 3rd Edition, 2013)
- Ed Allen and Joseph Iano, Fundamentals of Building Construction, 6th Edition (Wiley Books, New York)
- Francis Ching, Building Construction Illustrated (John Wiley and Sons, 5th Edition, 2014)

## REQUIRED SOFTWARE

All software needed for the course will be made available to the student.

Autodesk Revit: [www.autodesk.com/education/free-software/revit](http://www.autodesk.com/education/free-software/revit)

## STUDENT PERFORMANCE

Grading in all undergraduate architecture courses is consistent with the Grading System of the College of Arts & Sciences. See <https://www.college.upenn.edu/index.php/grading-system>. Only these letter grades and their numerical equivalents may be used by instructors. As noted in the charts below, grades range from A+ to F, with no D-

The numeric value of each letter grade used to calculate a student's GPA is determined by the College of Arts & Sciences. See Grade Point Average <https://www.college.upenn.edu/index.php/grade-point-average>.

A+	97 and higher	4.0
A	93-96	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	60-66	1.0
F	59 and lower	0.0

Design studio instructors are required to issue a final letter grade to each student along with an explanation showing the following:

- (1) the letter grade and numerical value for each exercise;
- (2) the percentage of the final grade for each exercise or project; and
- (3) the final letter grade and numerical value. For example, if project one is worth 40% of the final grade and receives a grade of B+ (3.3), and project two is worth 60% of the final grade and

receives a grade of A (4.0), the final grade for the course is A- (3.7)  $[(.40 \times 3.3) + (.60 \times 4.0) = 3.7]$ .

## ATTENDANCE

Students are expected to attend all classes for the entire scheduled meeting time and are responsible for completing all assignments and for knowing the material covered in class. Students are responsible for work missed, regardless of reason for absence.

### Religious Holidays

In accordance with university policy, students who observe religious holidays are excused from classes—including pin-ups and reviews—on designated holidays. Instructors are required to provide reasonable opportunities for a student to make up work missed by observing a religious holiday. See Policy on Secular and Religious Holidays: <https://catalog.upenn.edu/pennbook/secular-religious-holidays/>.

### Illness and Emergencies

Absences for reasons other than observance of religious holidays may be excused in the event of an emergency, serious illness, or other extenuating circumstance. The decision to excuse such absences will be made by the instructor in consultation with the Undergraduate Chair. Official documentation of illness or other emergencies may be required.

### Attendance at Reviews and Workshops

Attendance at scheduled reviews, formal presentations, and studio workshops is required. Absences from these classes will not be excused, except in the most extenuating circumstances.

### Course Action Notices

If absent from class for any reason students are required to submit a Course Action Notice (CAN). Students report an absence by logging into Path@Penn and selecting the Course Action Notices option from the “My Courses” menu. Instructors are required to maintain a record of student attendance for the entire semester and to monitor the submission of CANs by students for each absence.

### Long-term Absences

While all absences from class should be documented by the student with a Course Action Notice, students must also meet with the Undergraduate Chair and a College Contact to discuss the academic implications of long-term absences that extend beyond two weeks. Prolonged absence from class, even if excused, will undoubtedly and negatively impact student performance.

### Lateness

Instructors are encouraged to submit CANs for excessive lateness, as this may impact academic performance.

### Automatic Grade Reductions for Unexcused Absences

Students are allowed one unexcused absence without a final course grade reduction. With each additional unexcused absence, a student's final course grade will be reduced one grade level for each additional absence. For example, after the second unexcused absence the final earned course grade of B+ will be lowered to a B; after the third unexcused absence from a B to B-; etc.).

An exception to an automatic grade reduction for unexcused absences can only be granted in writing by the Undergraduate Chair. Students seeking an exception to an automatic grade

reduction must make an appointment to meet with the Undergraduate Chair after the final exam period and bring a copy of the CAN for each absence under consideration. Any additional documentation for an exception to the automatic grade reduction, if requested by the Undergraduate Chair, may be shared with the student's College Contact.