

ARCH 470: BUILDING CONSTRUCTION

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Course Objectives:

The objective of this course is to provide an understanding of the basic materials and methods of architecture with emphasis on the design, construction and performance of primary structure in wood, steel, concrete and masonry. The class will study:

- properties of materials and the rationale for their assembly
- basic principles of structural systems using a non-mathematical approach
- principles of sustainable construction
- standard wood light frame construction systems
- fundamental ideas of building technology that can be directly applied to studio design work

Principles learned in this class will also provide a foundation for the continuing study of structures and construction. This is the first of a five-course sequence in these areas.



Course Content:

Through lecture presentations, readings, field trips, lab projects, and lab discussions, this course will explore fundamental principles of building structure and construction. This includes an introduction to steel frames, concrete, masonry, and heavy timber frames. In addition, light wood frame construction will be studied in some detail because of its predominance in our building culture. This emphasis on a single system will establish a foundation for further study of larger scale systems in subsequent courses. Students will be asked to complete several projects, including the analysis of existing buildings and construction of detailed models. The importance of quality and craft will be stressed throughout the course. Several simple short quizzes will be administered during lab to evaluate and encourage comprehension of the course content.

Texts:

Allen/Iano, Fundamentals of Building Construction, Fourth Edition, Wiley, 2004.
Thallon, Graphic Guide to Frame Construction, Third Edition, Taunton, 2008.
Course Reader.