

Course Description: Correlation of the design development and construction documents phases of a building project. Development of the project from design development through construction drawing phases with appropriate drawings required for each phase. Prerequisite: ARC 242. Restricted to major. Studio Fee: \$48.

Course Goals and Objectives:

Upon completion of this course, the student will:

1. Simulate the typical office experience of design development through the construction-document phases for a steel frame, multi-story office building.
2. Understand the principles, materials, methods, and sustainable-design issues for a multi-story steel frame building.
3. Research, analyze, and develop construction documents for a multi-story steel frame building.
4. Understand and integrate the basic principles of building service and environmental systems for an office building.
5. Understand the legal responsibilities with respect to public health, safety, and welfare regarding codes, accessibility regulations, fire protection, and standards for a multi-story steel frame building.
6. Understand the basic principles of site and environmental conditions in sandy/bedrock soils in the northern Illinois region.
7. Become familiar with the techniques to integrate the Uniform Drawing System and National CAD Standards into the production of design development and construction documents.
8. Become familiar with computer-aided code research and web-enabled architectural detail research.
9. Gain a working knowledge of the metric system as it applies to contract document preparation including an understanding of SI units and scales to use in architectural drawings.

NAAB Student Performance Criteria:

A.4: Technical Documentation **B.5:** Life Safety **B.7:** Financial Considerations
B.9: Structural Systems **B.10:** Building Envelope Systems
B.11: Building Service Systems **B.12:** Building Materials and Assemblies

Topical Outline**Percentages of time**

- | | |
|---|-----|
| I. Principles, Materials, and Methods of Steel Frame Construction | 25% |
| A. Substructure | |
| B. Superstructure | |
| C. Building materials and finishes | |
| D. Building components, systems, equipment and/or services | |
| E. Site components | |
| II. Architectural Working Drawings in Metric Uniform Drawing Standards and National CAD Standards | 75% |
| A. Plans | |
| B. Exterior elevations | |

- C. Sections
- D. Details
- E. Schedules and legends

Prerequisites: ARC 341

Textbooks:

- Allen, E. *Fundamentals of Building Construction: Materials and Methods*. 4th ed. Hoboken, NJ: John Wiley & Sons, Inc., 2004.
- Ching, F. and S. Winkel. *Building Codes Illustrated*. Hoboken, NJ: John Wiley & Sons, Inc., 2003.
- Hall, D. J. and C. R. Green. *The Architect's Guide to the U.S. National CAD Standard*. New York, NY: John Wiley & Sons, Inc., 2006.

Offered: Spring semester

Faculty: Dobbins