

ARC 341: BUILDING TECHNOLOGY II: MASONRY & CONCRETE 4 credits

Course Description: Continuing study of materials and practices in document preparation for buildings using masonry and reinforced concrete construction. Investigation and use of local, state and federal codes regulating health and safety. Investigation of construction techniques relating to criteria of permanence, low maintenance and budget requirements. Produce a set of working drawings for a two-level, light commercial/industrial building. 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 construction document phases for a reinforced-concrete and masonry commercial/industrial building.
2. Understand the principles, materials, methods, and sustainable-design issues for a reinforced-concrete and masonry building.
3. Research, analyze, and develop construction documents for a reinforced-concrete and masonry building.
4. Understand and integrate the basic principles of building service and environmental systems for a commercial/industrial building.
5. Understand the legal responsibilities with respect to public health, safety, and welfare regarding codes, accessibility, regulations, and standards for a commercial/industrial building.
6. Understand the basic principles of site and environmental conditions.

NAAB Student Performance Criteria:

A.4: Technical Documentation **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

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| I. Principles, Materials, and Methods of Masonry and Concrete 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 | 75% |
| A. Plans B. Exterior elevations | |
| C. Sections | |
| D. Details | |
| E. Schedules and legends | |

Textbooks:

Allen, E. *Fundamentals of Building Construction: Materials and Methods*. 4th ed.
Hoboken, NJ: John Wiley & Sons, Inc., 2004.

O'Connell, W. J. *Graphic Communication in Architecture*. 2nd ed. Champaign, IL:
Stipes Publishing, 1985.

Ramsey, C. G. and H. R. Sleeper. *Architectural Graphic Standards*. 10th ed.
Hoboken, NJ: John Wiley & Sons, Inc, 2000.

Offered: Fall semester

Faculty: Lach