ARC 5588 - ARCHITECURAL STRUCTURES 2 (3 Credits)

Course Description

Evaluation of reinforced concrete structural systems including Statics Strength of Materials, Beam (flexure, shear, deflection), and Column design for gravity and lateral forces.

Course Goals & Objectives

Upon the completion of this class, the student will be able to:

Describe the history and development of concrete.

Describe the properties of concrete.

Discuss the proper handling, placing, finishing and curing of concrete.

Discuss quality control in concrete construction.

Discuss code requirements affecting concrete design and construction.

Design simple reinforced concrete beams to resist flexure and shear.

Design concrete columns to resist compression, buckling and shear.

Discuss the effects of Torsion on concrete structural systems.

Discuss concrete foundation systems.

Student Performance Criteria

Understanding:

A.3, Investigative Skills, A.4, Arch Design Skills; A.5, Ordering systems; A.6 Use of Precedents;

B.3, Codes and Regulations; B.8, Building Materials and Assemblies

Ability:

B.5 Structural Systems

Topical Outline

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General	15%
History and development of concrete.	
Concrete Properties, Quality Control, handling, placing, finishing and curing.	
Concrete Materials.	
Code Requirements	
Beam Design- Flexure & Shear	55%
Column Design	20%
Footing Design	10%

Prerequisites

ARC 5587 - Architecture Structures 1

Textbook/Learning Resources

ARC 5588 - Architectural Structures 2 (Robert Hudson) - required.

Simplified Engineering for Architects and Builders (James Ambrose) - recommended.

Offered

Spring only; annually.

Faculty

Robert Hudson (Adjunct)