ARC 2501, Structures 1, 3 credits.

This course covers structural concepts and principles of structural behavior. Included are the elements of statics and mechanics of material: concurrent and noncurrent force systems, moments and couples, equilibrium, centroids and moment of inertia, stress and strain, shear and moment diagrams, elastic column buckling, flexural and shearing stresses in beams, and truss analysis.

Course Goals & Objectives:

To provide basic solutions to statics problems.
To understand and calculate basic section properties.
To understand and sketch shear and moment diagrams for beams and columns.

Student Performance Criterion/a addressed:

B.9 Structural Systems
Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.

Topical Outline:

Statics of Mechanic of Materials  50%
Basic Section Properties  20%
Shear and Moment Diagrams  30%

Prerequisites:

ARC 2470 Introduction to the Technology of Architecture
PHY 2053 Physics I
MAC 2311 Calculus

Textbooks/Learning Resources:

Nawy, E., Design of Concrete Structures, current edition.

Offered:

Spring annually

Faculty assigned:

Thomas Beitelman (Adjunct)