

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY  
ARC 138– STRUCTURES FOR ARCHITECTS (3 CR.)**

**Course Description**

Analyzes the various forces acting on a building and surveys the structural elements used to resist them. Uses case studies of ordinary and unusual structures to illustrate concepts of structural design. Provides a conceptual overview of structural systems for students interested in the design and construction of buildings. Requires some elementary algebra. Includes exercises in reading structural drawings and tables. Lecture 3 hours per week.

**General Course Purpose**

ARC 138 is a required course in the AAS Architectural Technology curriculum and provides architecture students with an overview of structural concepts and systems.

**Course Prerequisites/Corequisites**

Prerequisites: ARC 133 and MTH 111 or higher.

**Course Objectives**

Upon completing the course, the student will be able to:

- Describe the forces and reactions acting upon a building structure.
- Describe how the loads created by these forces are distributed.
- Define engineering terms that describe the structural characteristics of a material.
- Describe how the forces acting on a structure are transmitted to the ground.
- Define and describe a bearing wall structure.
- Define and describe a skeletal structure.
- Read and interpret structural drawings.

**Major Topics to be Included**

- Forces acting upon a building structure. i.e. live, dead, and lateral loads.
- Load reactions and distribution. i.e. compression, tension, shear and torsion.
- Structural characteristics of materials. i.e. tensile, compressive and shear strength, Section modulus and fiber strength.
- Foundation design.
- Bearing wall structures.
- Skeletal structures.
- Column Design.
- Floor Structure Design.
- Roof Design.
- Structural drawings