ARC215: Building Structures I (2 Credit Units)

Department of Architecture

Covenant University
1. ARC215

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This is an introductory course to building structures. It deals mainly with the basic concepts in building structures and prepares the student for further studies in the field. Basic concepts of elastic behavior of materials, basic structural elements and the concept of applied loads are covered in this course. MODULE 1: Review of Forces, Moments and Couples as applied to Building structures - The concept of Force, Moments, Couples, Statics and Static Equilibrium and their applications to Building Structures. MODULE 2: Building as a key Component of The Built Environment- Components of Building, Theory of Structures, Structural Modeling and its Application; Forces as loads on Structures. MODULE 3: Basic Structural Elements- Beams, Columns, Arches, Trusses, Shells, Plates and Slabs their Properties and Applications. MODULE 4: Structural Systems in Buildings Historical Evolution and Applications of Structural systems, Contributions of Ancient Egyptians, Greeks, Romans, Industrial Revolution and others to the Evolution of structural Systems. MODULE 5: Simple Support Systems- Characteristics and Applications of Roller, Pinned and Fixed supports; Classification of Beams base support systems (Statically Determinate and Indeterminate Beams). MODULE 6: Types of Simple Structures- Characteristics and Applications of Solid, Skeletal, Cables, Arches, Shells, Pneumatic structures.