College of Architecture  
University of North Carolina at Charlotte  

Spring 2016

Course Number: ARCH 4304 / ARCH 5304  
Title: Structural Systems  
Schedule: Monday, Wednesday - 11:00 AM-12:15 PM; Room # 290  
Classification: Required Architectural Technology Course (B.Arch., M.Arch.)  
Instructor: David J. Thaddeus, AIA, NCARB, Professor  
Office Hours: By Appointment  
Room 247, Storrs Hall, (704) 687-4021, Thaddeus@uncc.edu

Premise:  
"The calculation of stresses can only serve to check and to correct the sizes of structural members as conceived and proposed by the intuition of the designer. The work itself is never born from calculation."  
From the Philosophy of Structures by Eduardo Torroja

This course is the third in the sequence of Building Technology courses at the College. It builds on the information already covered in Materials and Assembly and Structural Principles. This course offers an exploration of the structural design parameters that are involved in the design of buildings using several material palettes including wood, steel and concrete.

Objectives: One of the objectives of this course is to introduce an awareness of the nature and logic of structural analysis. An exploration of the strengths and limitations of different materials is at the center of this course. The main objective of this course is to enable the student to identify and select an appropriate structural system in response to a set of architectural requirements.

Content: The course is organized in three sections and a synopsis as follows:
- Overview of Statics and Strength of Materials
- Equilibrium, Stability, Strength and Stiffness
- Load Path Analysis Applications: Beams, Columns, Trusses
- Synopsis: Assemblages and connections of disparate materials

Method: The content of this course will be presented through lectures, work sessions, projects, and assignments. There will be several homework assignments and pop quizzes for each segment of the course. Each segment will conclude in an exam covering topics from that segment. The synopsis segment of the course will be evaluated by an individual design project.