Abstract: This course 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. The course is organized in four sections and a synopsis as follows:

- Overview of Statics and Strength of Materials
- Equilibrium, Stability, Strength and Stiffness
- Load Path Analysis Applications: Beams and Columns
- Synopsis: Assemblies and connections of disparate materials

Skills and Outcomes: 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.

Methodology: 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 will be evaluated by an individual design project.

Evaluation: The following values for student evaluation and progress are tentative,

For Undergraduate Students:
- 2 Exams x 20% Each 40%
- Final Exam 20%
- Homework Assignments 8%
- Pop Quizzes 12%
- Individual Project 20%

For Graduate Students:
- 2 Exams x 20% Each 40%
- Final Exam 20%
- Homework Assignments 5%
- Pop Quizzes 12%
- Individual Project 20%
- Additional graduate project 3%