Masonry Structures and Construction
ARCH 410-CRN 36653 and ARCH510-CRN 36654
1 credit, pre-requisite ARCH 4/562
Wednesdays 12:00-1:00, LA 279
Instructor: Christine Theodoropoulos, AIA, PE

STRUCTURAL CONCEPTS FOR MASONRY DESIGN
This course will present structural concepts that guide the design of structural systems that are constructed of masonry units. It will include:
1) discussion of historic and vernacular examples that illustrate structural strategies for unreinforced masonry systems and;
2) the conceptual basis for current design practice using reinforced masonry. Students will learn about the structural properties of masonry, the structural behavior of reinforced masonry components, and the rationale behind the codes and standards that guide masonry engineering practice.

BUILDING CONFIGURATION CONCEPTS FOR MASONRY STRUCTURES
Students will study the building configuration patterns and building use types that are best suited for masonry wall systems and masonry frame systems. The course will present case studies that illustrate common configurations of masonry components designed to resist gravity and dynamic loads and contribute to environmental performance. Cases will include structures constructed entirely of masonry as well as structural systems that combine masonry components with components constructed of concrete, steel and wood.

MASONRY CLADDING AND FINISHES
Students will be introduced to the types of masonry products and their common architectural applications as well as the professional resources available to architects working with masonry. A thorough treatment of masonry detailing is beyond the scope of this course but students will meet with architects to discuss the detailing strategies used in the design development of particular buildings that derive tectonic expression from the way masonry materials are integrated into the design concept.

COURSE REQUIREMENTS
Students will develop a course notebook that documents in-class and out-of-class activity. For each class meeting students will choose an independent follow-up activity. Examples of activity types include:
- Field observations of production plants, distributors, construction
- Design development for a current or past studio project
- Readings of professional technical literature
- Case study investigations involving conversations with architects

The textbook, C., Masonry Design and Detailing, McGraw Hill, is recommended for student purchase.