**ARCHITECTURAL DESIGN I**

**Project 2: Volume and Space**

**Theory:**   
Space and Volume are one of the basic building blocks in architecture.  We rely on our universal recognition of basic spaces and volumes to allow the viewer to understand the architect's intent.  Three dimensional variations of the circle, triangle and square undergo interactions to reflect program and contextual needs.  There are 3 spatial relationships: (a) space within a space; (b) space overlapping a space; (c) space abutting a space.  Students will also explore the issue of economy in design.  Columns/Dowels are one of the most minimal architectural elements for creating spaces and volumes.  One can make a square space with four dowels and one could use a thousand.  What is the minimum one needs to express clarity? Columns/Dowels can also form patterns by changing the spacing, diameter, height and by juxtaposing the location of spatially defining systems (not lining up elements).  We rely on this pattern recognition to form associations and identify like-minded elements that form spaces in complex interactive spatial environments.  This project will explore the relationship of how spaces and volumes work together to clearly express the designer's intent and understanding.

**Methodology & Analysis:**  Since no formal methodology is given to explore these design issues, the emphasis will be on the analysis of the projects.  Students will introduce their individual project (usually 3-5 projects at a time) and then the class will comparatively analyze them.  Each student will keep a journal and record various aspects of each project.  At the end of the entire critique, place a check next to what you think are the four (4) best projects in terms of the most successful interpretation and creative application of the concepts (do not share your opinion with any other students).  Students will be asked in groups of three to evaluate the projects on the following criteria, usually most and least.  Additional comments may come from the gallery at large but not from the designers whose projects are being critiqued.  The types of analysis used include: quantitative (counting how many times the rules is applied or features occur); qualitative (descriptive variations of success of the rule or features); collective group selection of success (poll the group).  The instructor will moderate the discussion.  This activity is designed to have students develop their understanding to concepts when applied in an interactive comparative multi-dimensional platform.

**Project 2 (Volume and Space) will be critiqued on the following concepts/criteria:**

* Clearly defined spaces
* Economy of elements to make the spaces
* Integration of spaces; having 3 spatial relationships:
  + (a) space within a space; (b) space overlapping a space; (c) space abutting a space.
* Patterns/Rules for using the dowels
* Overall pattern or idea

**Rules/Constraints for making the spaces with the dowels:**

* Must have a minimum of 9 spaces
* All must be integrated
* All dowels must be vertical
* Do not draw the spaces on the foam core
* No symmetrical projects

**Material:**

1 - layer of 15" x 15" x 1/4" foam core

2 - 1/2" diameter x 3'-0" wood dowels

2 - 1/4" diameter x 3'-0" wood dowels

2 - 1/8" diameter x 3'-0" wood dowels

1 - hot glue gun and power strip

**Assignment:**  
Using the principles of making space and volume, as outlined in the class lecture, construct one or more of the following: a space that is (a) space within a space; (b) space overlapping a space; (c) space abutting a space. All three primary shaped volumes must be used.  Each of the volumes and spaces must be related to one another. They may not be separate, independent places, on a plane rather they must interact and create a series of spaces and places. The more creative and original the design solution, the higher the grade.  Projects shall have a minimum of 9 spaces and volumes.

**Preparation:**  
Cut all of the 3'-0" dowels into 1'-0" lengths. Then divide 2 of the 1'-0" lengths of each diameter dowel into the following sizes: 6- 2", 3- 4" and 2- 6" lengths. Each 3'-0" dowel should yield six 2" long pieces, three 4" long pieces or two 6" long pieces of a particular diameter dowel.

**Procedure:**  
A series of three dimensional constructions shall made exploring the design principles of volume and space using the dowels. Create several small prototypes during the exploration stage; you may use tape or small amounts of hot glue during this stage to hold the dowels together. The majority of the dowels must be placed vertically, but some dowels may be placed horizontally and diagonally. No post and beam construction is allowed. After several design investigations, the student will glue together their final design solution onto the 15" x 15" base.

**Project Due Date:** Next class from date of lecture.

**Bibliography:**  
Francis Ching, Architecture: Form, Space & Order, pp.: 121-129