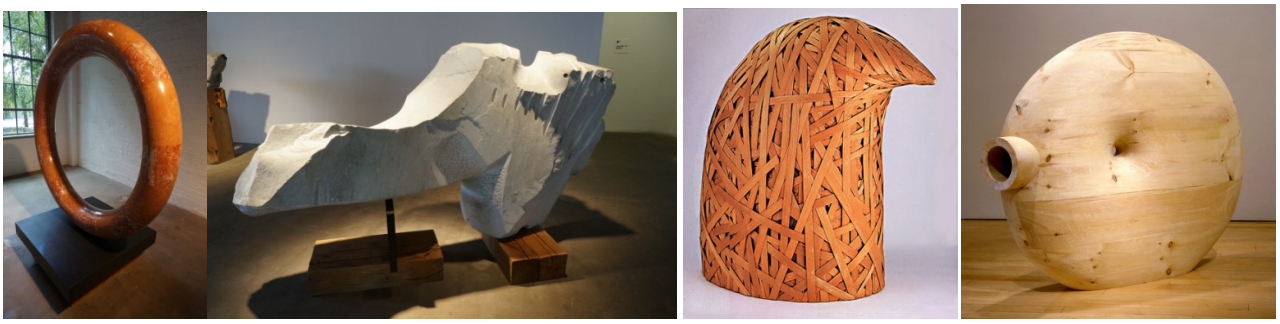

48400 Furniture Design and Construction Studio, Fall 2013,
Syllabus, version 2
Instructor: Scott Smith
Architecture Shop, CFA A9
Monday, Wednesday, and Friday 1: 30 to 4:30

Course Description
This furniture studio will seek to generate form in direct response to the material, guided by the capability of the machines and tools available (to cut, shape, and connect), while fulfilling the requirements of function and the human body. The emphasis will be on the use hand tools and power machinery operated by the hand, using, in the words of David Pye, "the workmanship of risk".

The studio will provide a review of basic techniques similar that provided in the fall mini electives, but more condensed. It will utilize some of the same preliminary exercises. There will be two main projects for the semester. A table made of straight components and a student selected piece made of curved and shaped parts. After the introductory exercises the class will start with the straight project using basicl fabrication techniques.

Students will conduct a survey of modern furniture making by researching and reporting on woodworkers who are leaders in the field, and who represent different attitudes about material, craft, form making and function. General methods of lamination and subtractive form making will also be investigated.

The students will be able to select the type of furniture object they will make for the second, major, project. It will be required to contain curved elements. Any project with curves requires the use of more advanced construction methods. There will be flexibility within this two project program for modification of assignments to meet the needs of thesis students. They will however, still need follow the basic studio outline and construct objects relating to the types assigned.

While the table of straight components will use techniques which are more basic, and simplicity will frequently be exhorted as the best path, simplicity is not necessarily inherent to the nature of the project. Merely by introducing angles and non parallel edges/surfaces a straight forward piece will become a project of challenging complexity. The exact project statement, and criticism during design will remind students that this is the first of two projects, and cannot be allowed to consume more than the designated time.

The second piece of furniture will be curved and shaped. Processes which may be used include band sawing , angled lamination, stacked lamination, bent lamination, steam bending, steam bent lamination,

routing, carving, grinding and sanding. Students may discover or even invent other techniques in their research. They will have to evaluate which have relevance to their particular project.

The studio will require hand labor in drawing, design and fabrication. Computers may be used to assist design to ease the labor, but, minimally, the final rendition of the design will be hand drawn full size on ply or mdf. This will serve to establish important links between hand and eye/mind, perception and intuition, touch and understanding, The development of these connections between body and nervous system must be established, practiced and reinforced through repetition. It promotes muscle memory that is so essential in all sports and performance skills. Similarly this linkage connects the eye with hand to make drawing more automatic and the representation of an idea /image more spontaneous and expressive.

The techniques and skills to be utilized and practiced in these projects fall into the workmanship o f risk, as defined in the "Nature and Art of Workmanship" by David Pye, in contrast to the workmanship of certainty. Using a chisel, or a table saw are both actions of the workmanship of risk. The workmanship of certainty encompasses the machinery and set ups of manufacturing which remove the possibility of accident and error, as well as individual expression, from the process. While Pye wrote before the advent of the computer and cnc and digital controlled machinery, the preprogramming, and autonomy of execution achieved by digital machines and computers classify these tools within the workmanship of certainty. In this studio we will be using design and fabrication processes of the workmanship of risk. If cnc controlled milling can be demonstrated to properly fall with in the workmanship of risk, then it may be employed.

Become familiar with a number of sculptors and wood workers:

Isamu Noguchi, Constantine Brancusi, Henry Moore, Lynn Chadwick, Jose Rivera, Thadeus Mosley, Eduardo Chillida, Louise Nevelson, David Smith, Martin Puryear.

Wendell Castle, James Krenov, Sam Maloof, Stephen Hogbin, George Nakashima, Thomas Hucker, Hank Gilpin, Tage Frid, Wharton Esherick, Wendy Maruyama, Tom Loeser…

Course Goals & Objectives:

- To learn more about the basic qualities of materials by their direct use.
- To acquire and improve the hand and machine skills necessary for good craft.
- To understand how the choice of process and the limitations of materials affect design.
- To develop a general knowledge of attitudes and approaches to woodwork and design in contemporary studio furniture.
- To develop a design sense which is informed by the fabrication process so that forms, structure and details speak about the methods with which they are made.
- To make a well constructed and designed functional object.
- To help the student plan a project that is within the scope of the course in terms of time and technique
- To learn to create a meaningful object
- To understand the meaning that handcraft can bring to an object
- To explore the power of handwork
- To examine the relationship between beauty, meaning, and craft

- Sensitize perception
- Develop muscle memory for hand tasks
- Develop understanding of the logic of sequence
- Develop and strengthen the connection between hand and eye.
- To learn to feel wood, and other materials
- To understand and trust your intuition.
- To feel the experience of drawing, design, and construction
- To learn to link the " how" with the early phases of design
- To understand, appreciate, and utilize the universal power of quality hand work.
- To learn to see, and feel the power of workmanship
- To build two full size, finished pieces of furniture, one a table, the other a chair. Which incorporate traditional wood connections
- To understand how wood joinery has evolved
- To use the tradition of wood joinery and furniture form as a spring board for unique design

Projects for Fall 2913 Furniture Studio

1) *Dis-assembly and recombination of furniture*
   a) Each student should select a chair from those provided and document it as a complete piece through drawing or photography.
   b) Disassemble the chair to reveal at least one of all the different connections.
      i) Upholstery should be removed, and unwrapped or cut to reveal the inner layering.
   c) Document through drawing or photography all the parts
   d) Pair up with a class member and collaborate with them to create a new piece of furniture from the parts of your two chairs.
      i) The new combined seating object must be for two people
      ii) It must be reassembled securely/ solidly
      iii) It must make a new statement about seating or chair.
      iv) The seat or back components must be conjoined
2) *Paring*
   a) Prepare 4/4 rough poplar and glue it into a 12" square
   b) Cut a circle as large as possible within the square.
   c) Cut a 4" circle within the larger circle. This circle does not have to be centered within the other but it should not come within 2" of the larger circumference.
   d) Cut V notches around both the inside and the outside circumferences according to the specifications provided.
   e) Leave two areas at opposing points around the outside circumference for mortise/tenon joints of given specifications.
   f) Cut a connector block/stand to interlock in the mortise and tenon joint in the circle
3) Parsons Table

   A parsons table is a rectangular table that consists of a top and four legs connected at the outside corners, and generally constructed out of solid pieces.

   For this assignment a looser definition will be employed. The basic furniture components will remain the same, however each component may be of either solid or composite pieces. Composite means an assemblage of multiple pieces, glued or interlocking.

a) The table will be made only of straight members
b) It will need to stay within a rectangular footprint whose two adjacent sides do not exceed 6'
c) The joints between the legs and the top should remain visible and become a major visual element.
d) The structure must withstand the forces of racking that all tables must be capable of withstanding.

4) Survey and research into significant masters of modern sculpture, the contemporary studio furniture scene, and study of "fathers" of modern furniture, individual contemporary masters.

5) Student's choice of a furniture type based on personal needs and research .

a) Development of an idea that explores and relates to the variety of attitudes in contemporary wood working concerning material, craft, and technique.
   i) Curves in the spirit of the hand tradition of contemporary and historic furniture will be pursued
b) Ergonomic design and comfort will be prime concerns.
c) Wood will be the primary material.

Emphasis will be placed upon hand shaped forms in which the original shape of the fabricated part disappears. This type of shaping allows for the most dramatic forms of handwork. If meaning is derived from handwork these shaped forms yeild the greatest power to communicate meaning.

We are not seeking "cool" design, we are seeking meaningful design.

We are also looking for economic solutions which adequately provide for the traditional *function* of the chair. Focus will be placed upon structure and the points where parts meet. Shaping and articulation of these points will be required. The number of parts will be limited and general size will be determined by function.

Typical Assignments:

- Making 1 ½" models of a design proposal
- Make 3 sketches of variations for each model (nine total)
- Make a 3" = 1' 0" (quarter size) model showing joinery and actual fabrication technique of strongest idea.
- Full size drawing
- Full size prototype in pine
- Construction of the actual object in selected materials.

Reading List:

Required:

Miscellaneous handouts

The Nature and Art of Workmanship by David Pye, Cambridge University Press (to be issued)

Recommended:

Fine Wood Working on Planes and Chisels, The Taunton Press

Designing Furniture by Seth Stem, The Taunton Press

Tage Frid Teaches Woodworking, Book 1-Joinery, The Taunton Press

Understanding Wood by Bruce Hoadley, The Taunton Press

The Unknown Craftsman by Soetsu Yanagi

Fine Woodworking on Joinery, The Taunton Press

The Fine Art of Cabinet Making by James Krenov, Van Nostrand Reinhold Co.

The Art of Making Furniture by John Makepeace, Sterling Publishing Co.

Tage Frid Teaches Woodworking, Book 2- Shaping and Veneering, The Taunton Press

Grading:

The completion and quality of each assignment will be evaluated. The mid semester grade will be derived from these assignments. Attendance, participation, involvement, and design development will be factored into this grade as well.

All work for the semester will be due at the end of classes.

The final grade will be derived primarily from the built objects, however, again, attendance, involvement, and design development will be considered in the grade. The objects will be evaluated for design, craft, function, solidity, understanding of materials, sensitive use of materials, and resolving issues into a coherent and harmonious object.

While regular attendance, consistent involvement, good design, and total completion will always result in a high grade, the award of an A also depends upon harder to define "extra" elements that can include difficulty, risk, superior craft and design, as well as fulfillment of what a student is capable of producing.

As stated in the student handbook, "In no case can a student expect to receive a passing grade without regular attendance and participation in class. Simply submitting projects, regardless of quality, at mid-semester or at the end of the semester will not allow a student to receive a passing grade without regular attendance.

Participation and regular attendance is extremely important and will be monitored. Absences must be excused. Two unexcused absences are cause for lowering your grade one letter grade. Being late twice will be viewed as one unexcused absence. See the student handbook for definition of excused absence.

Students *must be prepared* to work during class.

Incomplete projects force the instructor to grade attendance and performance rather than the object and design. It upsets the level field of evaluation, creating different grading criteria. In addition, the failure to complete work on time can cause cancellation of the final review. Guest reviewers will only be invited if there is sufficient completed work to view and discuss.

Tools and Materials:

Students must provide their own utility knife or Exacto blade, straight edge, 5 mm pencil and #2 pencil with eraser, and a six inch ruler with fine line etched measurements in 16ths, 32nds, and 64ths of an inch. Aluminum straight edges with printed measurements are unsatisfactory. Materials for exercises and final

projects may be purchased from the shop inventory. Materials not in stock will be the student's responsibility to acquire. Materials for the exercises should cost less than $25. Materials for the final projects may run between $45 and $250. The shop will provide most other tools (although assembling your own tool collection is encouraged). Advice on the best tools to get is available.

Storage:

Limited storage space is provided in the form of compartments in the storage room off the pinup hallway on
the mezzanine. Materials, works in progress, and personal tools and supplies may be stored in these compartments (with your name clearly visible). Put your name on every piece of wood or material which is important. Security cannot be guaranteed. Shop tools should not be kept in these boxes (they must be returned to the tool room).