American Furniture Masters Institute

Studio Based Learning Program - Curriculum for Students

AFMI recognizes that the level of expertise among our students will vary. The following curriculum is based on a three year program designed to meet the needs of a student who is entering with basic woodworking skills. The curriculum can be modified in terms of content to meet the needs of each individual student based on skill levels and time commitment.

First Year

- Wood and its properties relevant to joinery, shaping, gluing and finishing
- Hand tools
- Sharpening
- Machinery
- Processing lumber and determining the order of machining steps
- Joinery and construction
- Dovetails, mortise and tenon, miters, rabbets and half lap
- Shaping and carving with hand tools
- Turning
- Bent wood
- Sanding and surface preparation
- Finishing
- Design

First Year Projects - emphasize hand work

1. Small Box

This project provides an introduction to dovetail joinery and stock preparation. This is a test of hand plane control, emphasizing flatness and squareness. Also this is the first project after the successful demonstration of making joinery samples. One or more types of dovetail may be used to construct the box.

2. Small Bench

By building a bench, students learn the need for exact layout for the parts and the joinery. All parts are prepared by hand: flat, square and exactly to size. The joinery involves through dovetails (which are a test of visualization), and the mortise and tenon. This project also requires planes, rasps, spoke shaves and scrapers to accomplish shaping and doming. The student will learn to use a plane as a shaping tool rather than just to flatten stock.

Studio Based Learning Program - Curriculum for Students (page two)

3. Small Sculptural Bench

Although this piece could be functional, the emphasis will be on form and not necessarily practicality. Sketches and drawings are very important on this project as it might not have the associative reference to furniture. All the techniques employed previously, such as joinery, shaping, sanding and finishing, will be utilized.

4. Low Table

A major part of this project will be making the top, which should be five to seven square feet in size. The student will employ hand planes to produce the top, which should have at least one long glue joint. Consideration of the type of stock used in the top is important, including an understanding of the choices of flat sawn vs. quarter sawn material. Mortise and tenon joinery is suggested for this project, and all these joints are to be done with hand tools. The experience gained by making these joints will lead to the production of a chair in the second year. On this project machinery may be employed to produce parts for the understructure.

Second Year

- Advanced joinery
- Functional analysis
- Exploring the limits of strength of material and joinery
- Designing from the inside out
- Structure and shape evolving from human function study
- Carcass construction
- Solid panel construction which allows for seasonal wood movement
- Drawers and suspension methods
- Veneering
- Bent wood laminations
- Steam bending
- Advanced machine techniques
- Special finishing methods

Studio Based Learning Program - Curriculum for Students (page three)

Second Year Projects

1. Chair

The making of a chair combines many of the previously learned skills, such as joinery, use of hand tools and machines. A chair is a challenging design project, because it must support a human body comfortably and safely, without being over-designed for strength.

2. Chest of Drawers

The student will be expected to produce a reasonable sized piece of furniture with at least five or six drawers.

3. Dining Table

Making a table may involve the use of plywood or utilize veneering techniques. There should be some kind of extension system in the table design.

Third Year

Flexibility in the third year curriculum allows for the student to decide on projects based on some pre-established guidelines. A production run of chairs will be required. The third year is also the time to practice specialized techniques such as marquetry, veneering curves, upholstery, turning, refinishing and repair, steam bending, tambour doors, or anything else the student feels is important.By the end of the third year, students should be experienced in solid wood and plywood construction techniques.