Queens College
Art Department / Photography & Imaging
PHOTO 245
Digital Pinhole Imaging & Large Format Printing
Prof. Greco

Assignment #1 – Pinhole Camera Design and Drawing for laser cutting:

Your first assignment is to design a simple pinhole camera. Essentially it is a box with a hole on one side and can open so you can load paper inside. Begin with some pencil drawings, then mockup your camera with cardboard to make sure it will fit together. Decide how you will join your pinhole camera; how will each piece be fastened? You need to be able to replace the paper in the pinhole camera, be sure to include a way to get inside the box. Your box must be light tight so be sure any lids/caps/plates seal well. Be sure to include a "shutter" so you can cover the pinhole while moving the camera from the darkroom to the shooting location. I will be providing you with your pinhole aperture which looks like a small metal disc. You will glue this to the front/inside of your camera.

Basic box dimensions – 7.5" x 5.5" x 7.5"
Hole dimension for pinhole – .5"
Hole dimension for hardware - .125"
Hardware size - #8

We are using 5" x 7" paper to make our exposures so your box must be at least 7.5" x 5.5" (why the extra .5" – give yourself some wiggle room). Your box can vary in dimensions, just make sure you can fit a 5" x 7" piece of paper in it.

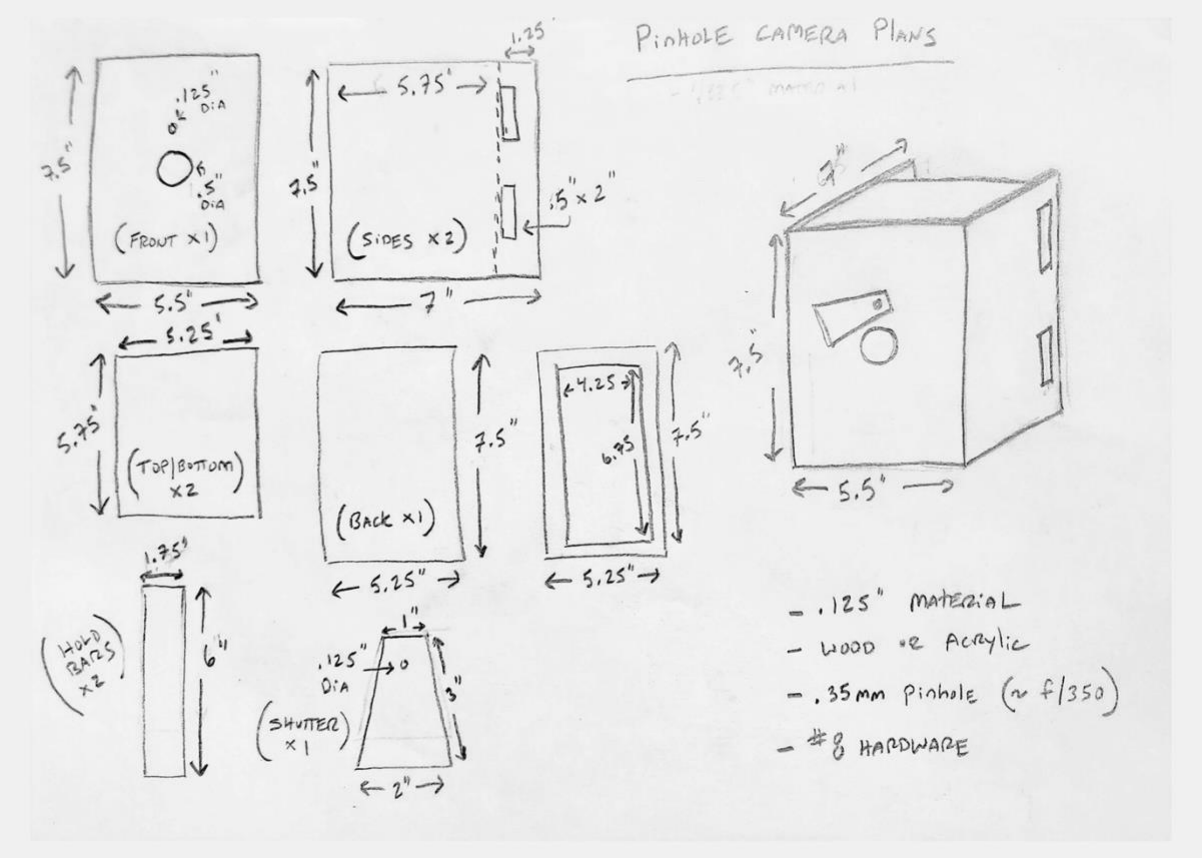
You can choose to use acrylic or wood as your material – both come in 12" x 24" x 1/8" sheets. **Make sure you take the thickness of the material into account when making your drawings (1/8" or .125")**

If you choose wood, you can use Elmer's Glue (white glue) or Wood Glue or Gorilla Glue to attach. If you choose Acrylic, you can use Weld-On 3 Acrylic Adhesive or TAP Acrylic Cement or Plast-I-Weld. Both should be reinforced with black Gaffer's tape. The inside of all cameras must be painted matte black (no glossy paint).

First step is to create some pencil drawings to plan out your camera design. Put accurate measurements to all the dimensions to make it easier to create in Illustrator. Once you have final drawings transfer those to cardboard. Use a right angle and a straight edge to make your pieces square, this will help when trying to assemble. Put your cardboard pieces together with tape and see if all the dimensions fit and your design will function. Your pieces must fit together precisely – any gaps will render your camera unusable. Most common cardboard boxes are .125" (1/8") thick which is the same as our final material. Use cardboard that is .125" thick to match the final design best. **Remember to account for the thickness of the material when designing!**

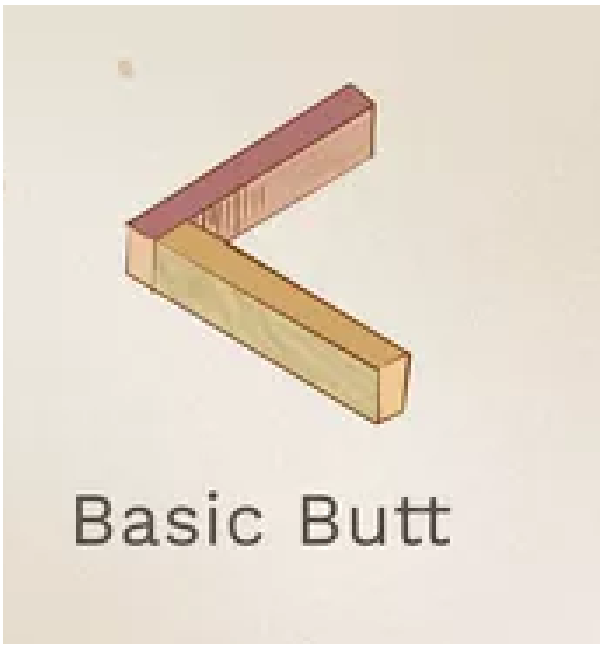
When planning your joint type make sure you consider the thickness of the material as well.

Shorter wide angle model shown



Types of Edge Joinery:

Basic Butt Joint: Basic Miter Joint:



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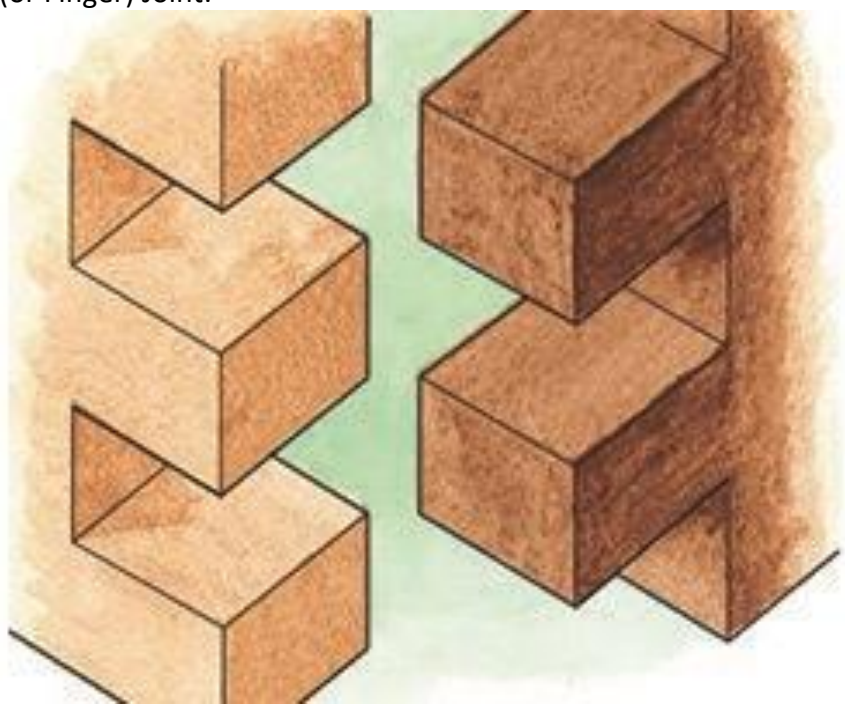
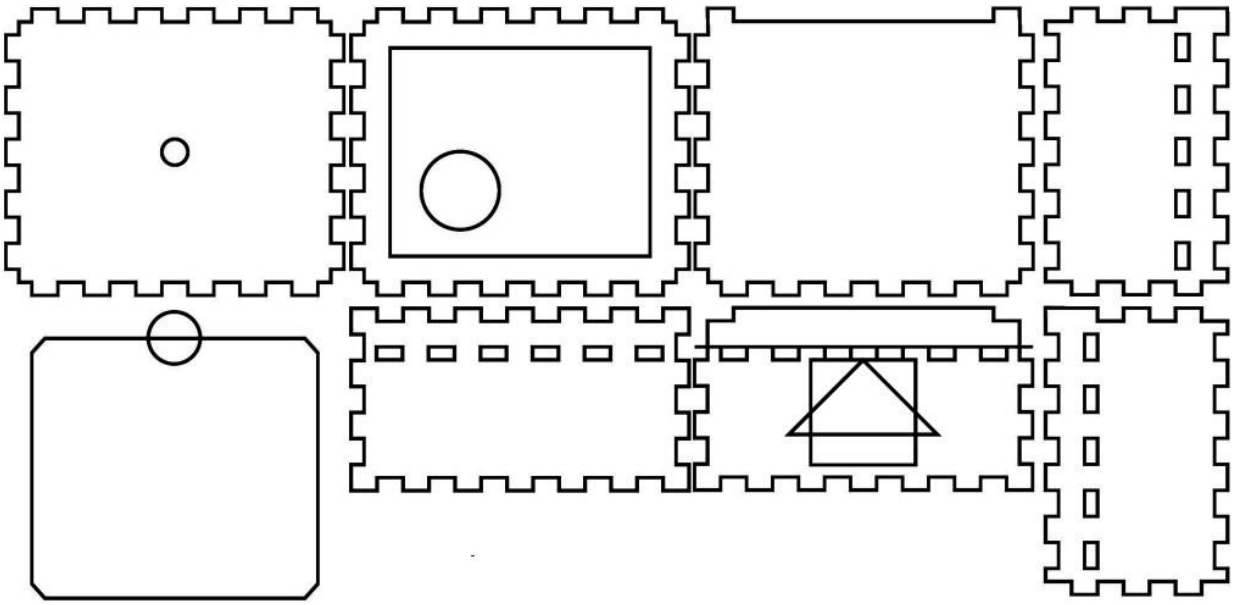
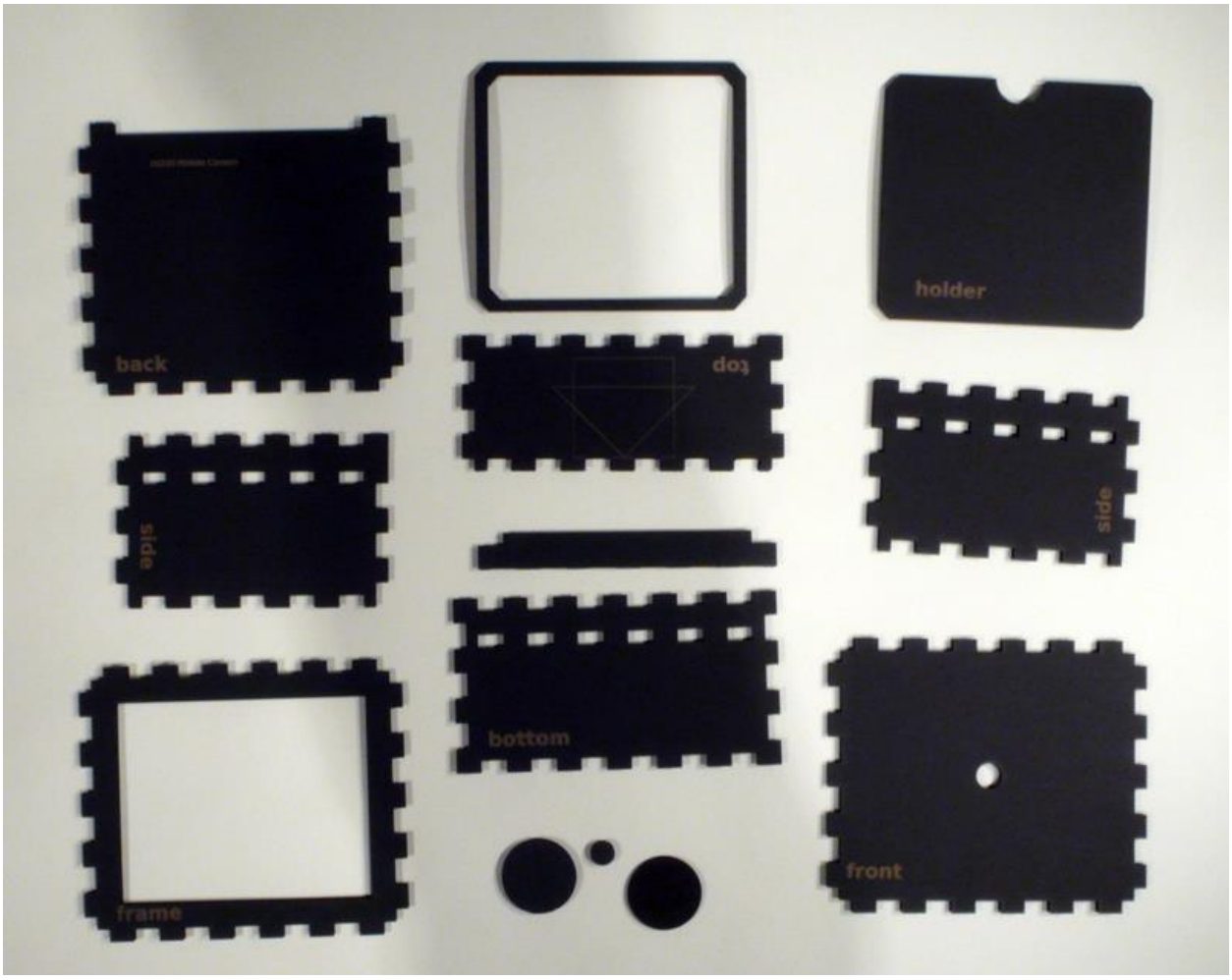
Basic Box (or Finger) Joint:



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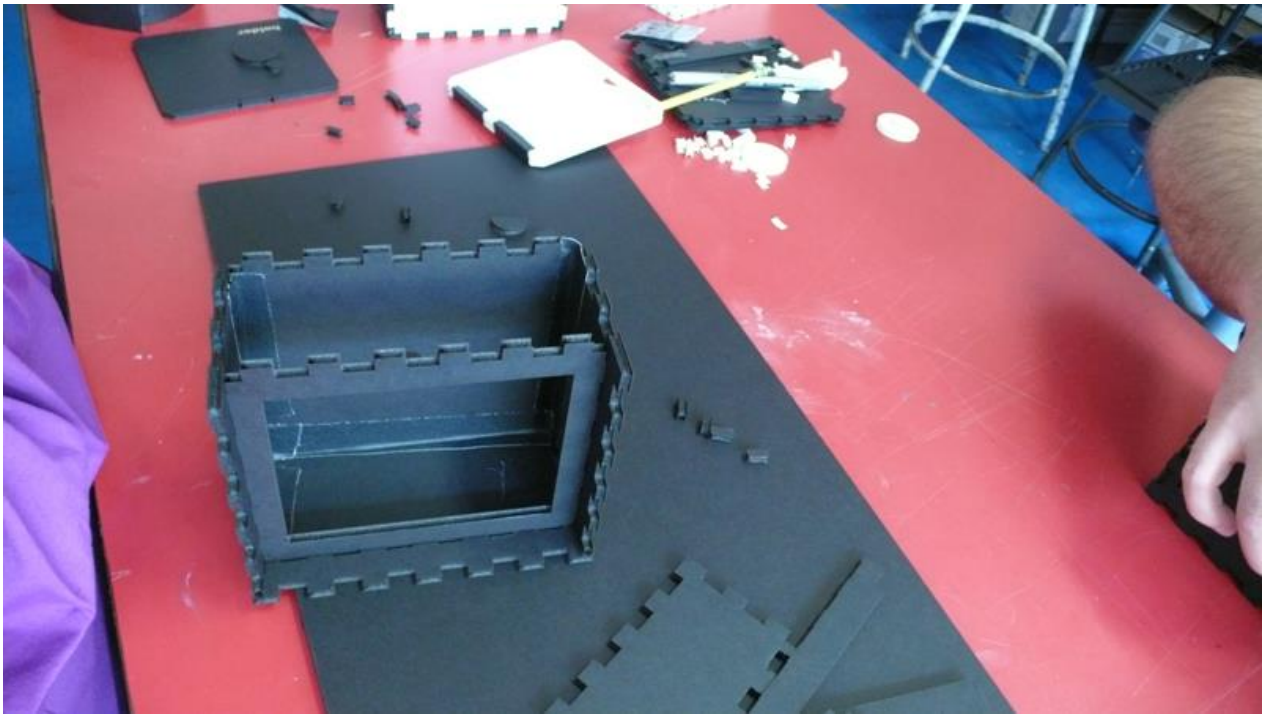

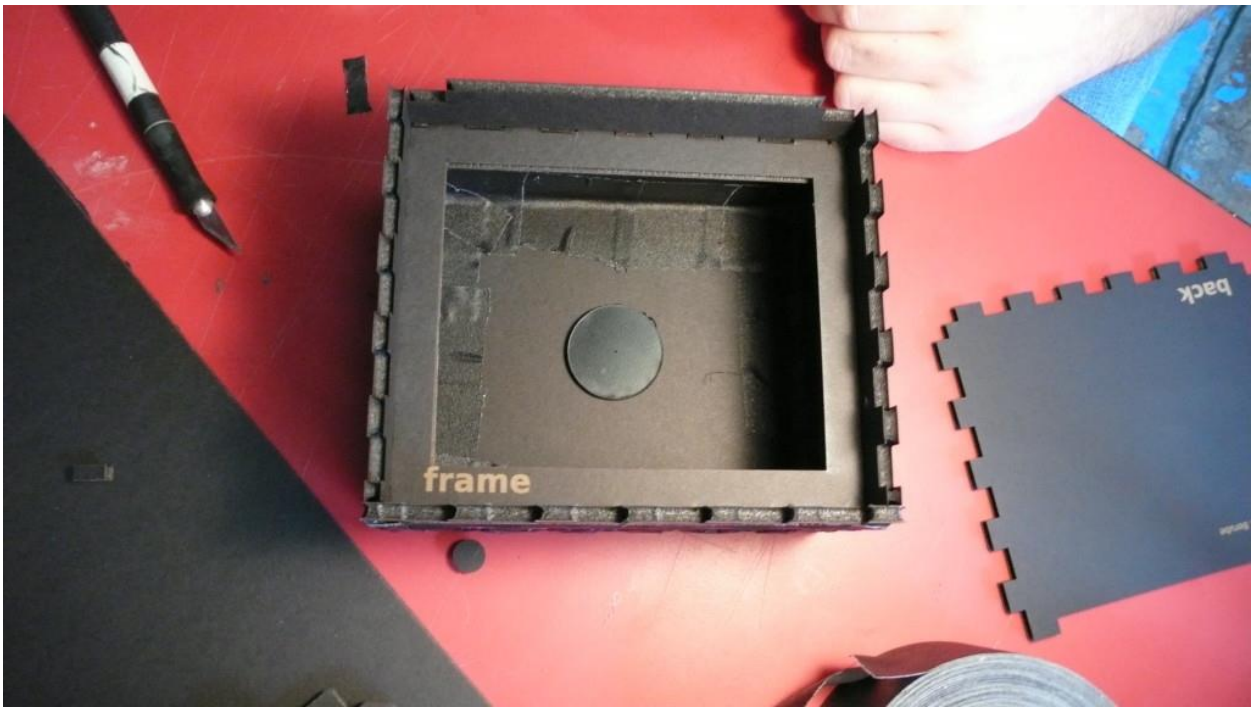
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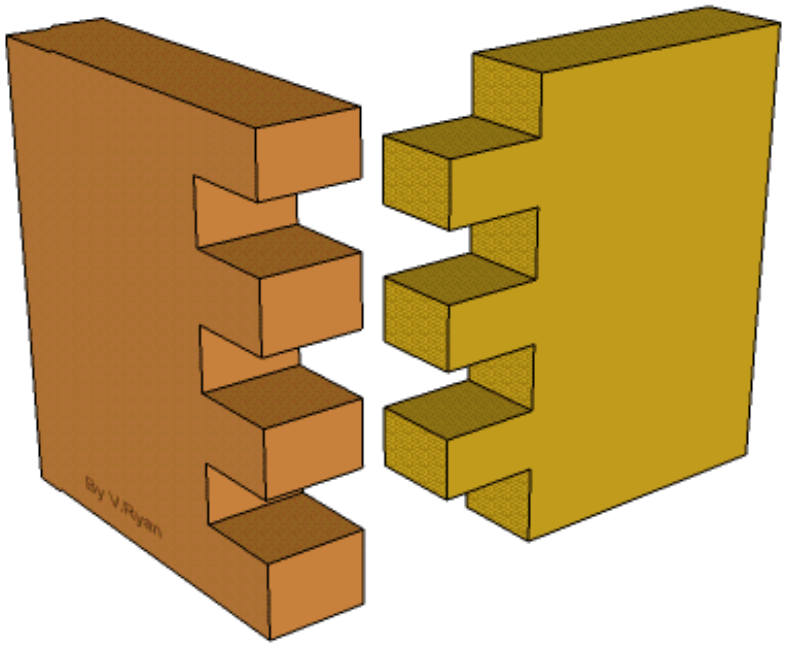
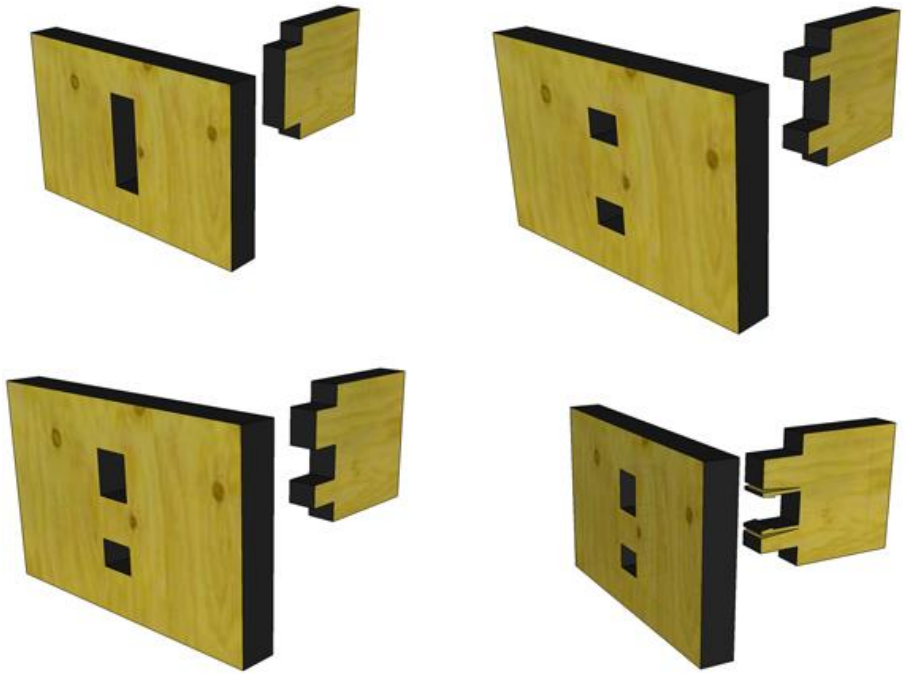
Simple Mortise and Tenon Joint: