Do not wait until the last minute to shop for supplies. Please come prepared to class.

To save on the cost of copies, I email handouts as a pdf attachment a couple of days before class begins. Please print them out and familiarize yourself with the content before class. Do not start the homework until after that particular class.

Supplies

- Pencil Options. Choose which works best for you.
  1.) Graphite Drawing pencils. 4H, 2H, H, B, 2B, 4B, 6B, 8B. There are many, many different brands on the market. You can buy them individually or in a set. If you buy a set, find something that approximates the lead weight listed above.
  2.) .05 or .03 mm mechanical pencils, come with a variety of lead weights and lasts years. .05 pencils do not have to be sharpened either. Minus - expensive.
  3.) Bring pencils used in Drawing 1.
- Approximately 9” x 12” drawing pad or sketch book
- Erasers. Kneaded eraser and large white eraser (Staedtler Mars) or Vanish 4-in-One eraser.

- Either a handheld pencil sharpener or a Sandpaper Block for sharpening pencils.
- Tracing paper pad (approximately 9” x 12”). Canson Tracing Paper 25 lbs. works well
- Transfer sheet.
  To make one, bring a 6B Wolff Carbon (not graphite!), alcohol, tissue, tracing paper, tape. Bring these for the first class.
- 12” ruler marked in inches and millimeters, a non-slide backing, and metal edge.
- White artists tape.
- Boston Harbor Architect Swing Arm Desk Lamp, 26”
- LED bulb or incandescent bulb, daylight correct. Don't buy a led that has multiple small bulbs.
- Extension cord.
- Proportional dividers or compass.
- Proportional wheel, proportional scale app, or calculator. (For those who are math challenged.)
- Black and white value scale (I like Dick Blick’s Gray Scale and Value Finder)
- Clear plastic cup
- Pipe cleaner, bendable coat hanger, or .25” clear tubing

Plant materials needed for each class are listed below.

Optional items.

- Paper towels (to keep specimens wet and hopefully fresher)
- Large and long primary wing feather or horsehair brush.
- Q-tip Precision Tips (cut in half).
- Eraser shield.
- Items to help hold plants in place.
- Helping Hands Double Soldering Aid w/ Magnifier.
- Floral tubes.
- Plasticine.
Bring all above supplies and a print out of all handouts to each class. In addition, you will need the following materials (see below) for individual classes.

You could potentially be drawing roots, buds, flowers, seeds, and leaves. Additionally, you will draw microscopic details of your plant. You may do additional research on the web and use field guides as needed.

Class 1. One-to-one measuring.
Bring tips of tree or bush branches with leaves attached. Choose something with simple leaves. Total height less than 10”.

Class 2. Proportional measuring and foreshortening.
Bring a stem with multiple flowers coming off the main stem. Maximum height of 12”. Find a branch with leaves coming off the stem at different angles to the main stem.

Class 3: Ellipses and perspective.
Bring flowers that create ellipses. Some possibilities are daisies, lilies, wild roses, and tulips. Stay away from zinnia or chrysanthemum flowers. Bring several different blossoms in case one isn’t quite the right shape. Feel free to buy something from Michaels.

Class 4: Tonal drawing.
Bring a subject of your choice that has several stems, leaves, and flowers coming off in different angles.

Homework will extend beyond the last class. All unfinished assignments are due Tuesday, March 20, 2018.

About Your Materials
Cheap materials can make your job harder. Cheap pencils can have so much added clay that no pencil mark shows up when you try to draw. Cheap paper can buckle, turn brown, or not erase easily. Buy the best you can afford.

Paper. You may use inexpensive paper for this class. For your Independent Projects for graduation and for your serious works after you graduate, try to purchase good quality paper.

Most of the paper we use today is manufactured from trees and is a cellulose-based paper. The trees are mashed up until the fibers are pulp, squished to get the water out, and dried. While plant fiber, lignin, is good for our diet, it is not good for the longevity of paper. Lignin breaks down and as it does so, it releases an acid that changes the pH of the paper. This in turn, causes it to brown and become brittle. This process can be seen in as little as seven years.

Adding calcium carbonate to wood pulp can drastically slow this process down by lowering the pH level to a more neutral level. This buffered paper is called acid-free paper. As of right now, there is a lot of debate among conservation scholars regarding the longevity of these papers. Because this process is so new, no one knows how long the paper will stay buffered. It is safe to say that better quality papers should last for many years.

Archival grade paper, frequently called “rag” paper, lasts for centuries. This cotton based paper used to be made from – rags, hence the name.

When selecting a paper to draw, you want a paper that is smooth and has minimal texture. The paper should not be so smooth that it will not accept a softer graphite pencil or so rough that it produces a texture that could be mistaken as a description of the plant.

Many botanical artists prefer to work on 300 lb. hot press watercolor paper. The paper’s weight refers to the weight in pounds of one ream of paper, which is around 500 sheets. 500 sheets of 22” x 30” Arches watercolor paper weighs about 300 lbs. Artists commonly refer to the paper type plus its weight. Arches, Strathmore, and Fabriano are three excellent choices. Do not use a lightweight paper. Any paper less than 70 lb. might buckle due to humidity. 140 weight works quite well for drawings.

Pencils. The F and all the H’s are considered harder leads because they contain more clay. B’s contain more graphite and are softer. Details can be
more readily created with the harder leads. B’s smear easily.

Pencils can be sharpened with an electric sharpener, a hand held one, or by whittling the wood with an Xacto blade and then sharpened the tip on a sandpaper block.

For analytical (versus spontaneous gestural drawing) illustration work your pencil needs to be kept very, very sharp. Pencils dull quickly, so get in the habit of slightly rotating the pencil often to maintain a sharp point. This is necessary because as you draw, the point wears down and takes on a chisel shape. This makes your pencil stroke get wider. The longer you draw, the more pronounced this effect becomes. If you then lift up your pencil, you might put it back down at a slightly different angle. Then you would be drawing with a new edge, and the line width would change. You want to avoid this because the pencil strokes need to remain consistent in width throughout an entire illustration. You can make them consistent by slightly rotating the pencil frequently. That way you avoid a chiseled edge, and the pencil’s sharp point lasts longer.

You can draw with a chiseled edge. For this edge do not turn your pencil at all. Keep it in the same position so that the width of the edge stays consistent. You can use this technique for a more calligraphic effect to your pencil line.

**Eraser, Eraser Shield, and Cleaning Eraser Crumbs.** Clean your plastic erasers by rubbing them on a separate sheet of paper. The kneaded eraser can be “kneaded” when it needs cleaning. Use the big eraser for large areas. The kneaded eraser can be used for lifting up small mistakes and holding up plant specimens.

Eraser shields have small openings of different dimensions so that you can erase small spots without damaging adjacent areas.

Do not blow eraser crumbs off the paper, use a horsehair brush or long primary wing feather instead. Frequently, when you blow, you also send spit flying. Some papers will not tolerate spit in that when you draw on top of it, the spit will show!!

**Lamp.** LED lamps like OTT lamps are great for illuminating subjects, however, because the light contains many small bulbs, you also get as many cast shadows as there are bulbs and no true highlight area. A LED bulb is fine. The bulb should say daylight correct or 5000K.

**Measuring.** Measurements are generally given in millimeters, so make sure you have a ruler that gives both inches and millimeters. Having a non-slip backing helps prevent slippage as you cut against the metal side. The edge of a plastic ruler is easily cut by an Xacto blade.

For those of you who are not math friendly, know that you will be proportionally measuring the subjects. Therefore, you might wish to bring a calculator, a proportional scale wheel, or add a proportional scale app to your phone.

**Miscellaneous.** Q-tip Precision Tips are great for lifting a small bit of graphite from the drawing.

White artist tape has a special coating that makes it easier to remove than regular masking tape.

A handmade transfer sheet can be quite handy. To make one, start by taping all four edges of a sheet of tracing paper. This will protect the edges of your transfer sheet and keep it from rolling up. Completely cover the paper using a 6B Carbon or Charcoal Pencil. Make sure it is very dark. (Graphite will not work.) Moisten a tissue with alcohol. It should be wet, but not dripping. Wipe the entire sheet of tracing paper with the tissue. Allow to dry. Once dry, turn it over and make a few test marks with a pencil. You should not have to press hard. If an impression of your hand transfers to the paper or if the line is too dark, go over it again with the moist tissue to lift up a bit more carbon. If you accidentally lift up too much carbon and feel like you want to press down hard, go over it again with the Carbon Pencil. You can make a white transfer sheet using a white chalk pastel stick or a colored one using a Conte Crayon.