

## LAB 1 – ON CAMPUS

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### loblolly pine Pinaceae *Pinus taeda*

**Leaf:**Evergreen needles, 6 to 9 inches long, with (usually) three yellow-green needles per fascicle.

**Flower:**Monoecious; males long cylindrical, red to yellow, in clusters at branch tips; females yellow to purple.

**Fruit:**Ovoid to cylindrical, 3 to 6 inch red-brown cones; umbo is armed with a short spine, maturing in early fall.

**Twig:**Orange-brown in color, fine to moderately stout; buds are narrowly ovoid, light reddish brown.

**Bark:**Initially red- to gray-brown and scaly; older trees are ridged and furrowed, with somewhat rounded scaly plates; very old trees have red-brown, flat scaly plates.

**Form:**A medium to large tree can reach well over 100 feet tall, self-prunes well and develops a fairly straight trunk and an oval, somewhat open crown.



**Notes:**

### southern magnolia Magnoliaceae *Magnolia grandiflora*

**Leaf:**Alternate, simple, evergreen, oval to elliptical, 5 to 8 inches long, pinnately veined, entire margin, very thick almost plastic-like, waxy/shiny dark green above, paler with rusty fuzz below.

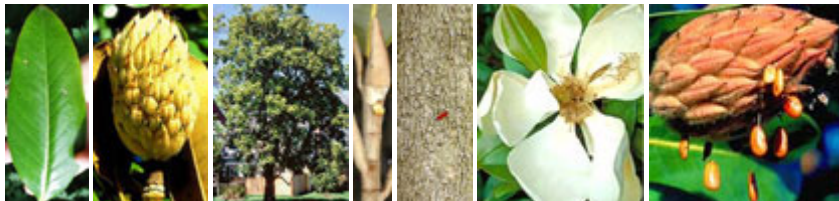
**Flower:**Monoecious; very showy and fragrant, 6 to 8 inches wide with large white petals, occur singly in late spring and occasionally a few in the fall.

**Fruit:**An aggregate of follicles, green changing to red and later to brown, cylindrical, 3 to 5 inches long with a bright red seed (1/2 inch long) in each follicle, maturing in fall.

**Twig:**Stout, with white to rusty tomentum and a long (1 to 1 1/2 inches) silky white to rusty red terminal bud.

**Bark:**Brown to gray, thin, smooth/lenticellate when young, later with close plates or scales.

**Form:**A medium sized tree up to 80 feet with a pyramidal crown. When open grown, the crown is dense with low branches.



**Notes:**

### cherrybark oak Fagaceae *Quercus pagoda*

**Leaf:** Alternate, simple, 5 to 8 inches long, 5 to 9, bristle tipped lobes which are shallower than *Quercus falcata*, margins of lobes are nearly at right angles to midrib, bright green above, duller and may be scruffy-hairy beneath and on petiole.

**Flower:** Species is monoecious; staminate yellow-green flowers borne on elongated clusters of catkins; pistillate flowers are very small, green and borne on a short stalk, appear with the leaves.

**Fruit:** Acorns are 1/2 inch long, orange-brown, pubescent when young; scaly, somewhat pubescent cap covers about 1/3 of the nut; matures in fall after two years.

**Twig:** Orange to reddish brown, often very pubescent with older twigs becoming glabrous; multiple terminal buds (1/8 to 1/4 inch) are pointed, reddish brown and have some pubescence on the upper half.

**Bark:** Initially smooth, but quickly developing small scaly ridges, later becoming dark, scaly and quite rough. At times resembling black cherry bark.

**Form:** Large tree, with good, straight form, often well over 100 feet tall and over 3 feet in diameter.



**Notes:**

### southern red oak Fagaceae *Quercus falcata*

**Leaf:** Alternate, simple, 5 to 9 inches long and roughly obovate in outline with bristle tipped lobes. Two forms are common: 3 lobes with shallow sinuses (common on younger trees) or 5 to 7 lobes with deeper sinuses. Often resembles a turkey foot with one very long hooked terminal lobe with two shorter lobes on the sides. Shiny green above, paler and fuzzy below.

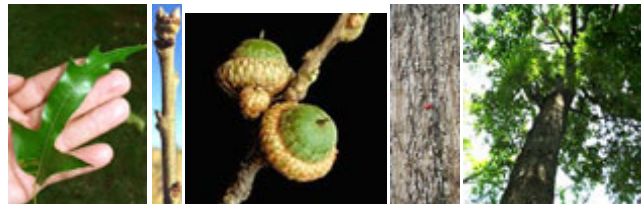
**Flower:** Monoecious; males yellow-green (tinged with red) borne on long thread like catkins; females reddish and borne on short spikes, both appearing in spring with the leaves.

**Fruit:** Acorns are 1/2 inch long, orange-brown and pubescent. The cap covers less than 1/3 of the nut and is quite thin and flattened; cap scales are orange-brown, appressed and slightly pubescent; matures after two years, ripens in the fall.

**Twig:** Reddish brown in color, may be gray-pubescent (particularly rapidly growing stems such as stump sprouts) or glabrous; multiple terminal buds are dark reddish brown, pubescent, pointed and only 1/8 to 1/4 inch long, laterals buds are similar, but shorter.

**Bark:** Dark in color, thick, with broad, scaly ridges separated by deep, narrow furrows. Resembles *Q. velutina*, but the inner bark is only slightly yellow.

**Form:** A medium sized tree up to 90 feet tall with a rounded crown.



**Notes:**

**white oak** Fagaceae *Quercus alba*

**Leaf:** Alternate, simple, oblong to ovate in shape, 4 to 7 inches long; 7 to 10 rounded, finger-like lobes, sinus depth varies from deep to shallow, apex is rounded and the base is wedge-shaped, green to blue-green above and whitish below.

**Flower:** Monoecious; male flowers are yellow-green, borne in naked, slender catkins, 2 to 4 inches long; female flowers are reddish green and appear as very small single spikes; appearing with the leaves in mid-spring.

**Fruit:** Ovoid to oblong acorn, cap is warty and bowl-shaped, covers 1/4 of the fruit; cap always detaches at maturity; matures in one growing season in the early fall.

**Twig:** Red-brown to somewhat gray, even a bit purple at times, hairless and often shiny; multiple terminal buds are red-brown, small, rounded (globose) and hairless.

**Bark:** Whitish or ashy gray, varying from scaly on smaller stems to irregularly platy or blocky on large stems. On older trees smooth patches are not uncommon.

**Form:** A very large tree; when open grown, white oaks have rugged, irregular crowns that are wide spreading, with a stocky bole. In the forest crowns are upright and oval with trees reaching up to 100 feet tall and several feet in diameter.

**Notes:****water oak** Fagaceae *Quercus nigra*

**Leaf:** Alternate, simple, 2 to 4 inches long and extremely variable in shape (from spatulate to lanceolate), may be 0 to 5 lobed, margins may be entire or bristle-tipped, both surfaces are glabrous, but axillary tufts may be present below.

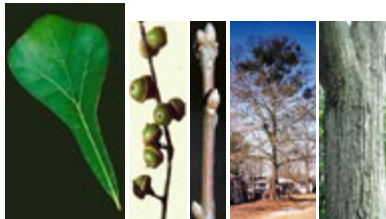
**Flower:** Staminate flowers borne on catkins. Pistillate flowers borne on spikes, appearing with the leaves.

**Fruit:** Acorns are 1/2 inch long, very dark in color, and 1/3 covered by a flattened cap with appressed scales, maturing in fall of the second year.

**Twig:** Slender, red-brown; buds short, sharp-pointed, angular, red-brown, multiple at the tip.

**Bark:** Dark and quite tight, smooth when young and later with irregular rough patches; much later developing wide, scaly ridges.

**Form:** A medium sized tree with a slender bole and rounded crown with ascending branches.

**Notes:**

### Florida maple *Acer floridanum*

**Leaf:** Opposite, simple, orbicular in shape, 1 1/2 to 3 1/2 inches in length and width, entire margin with 3 or 5 somewhat rounded lobes, green above, paler and often fuzzy below.

**Flower:** Yellow-green, small, hanging from a long (1 to 2 inches) stalk in clusters of a few flowers, appearing with the leaves.

**Fruit:** Samara, about 3/4 inch long, spreading at about 65 degrees (wider than sugar maple), mature in the mid-summer.

**Twig:** Slender and shiny, reddish brown, terminal buds sharp pointed, brown and fuzzy.

**Bark:** Light gray, with thick irregular curling ridges, becoming plated.

**Form:** Medium sized tree to 60 feet, elliptical crown.



**Notes:**

### sugarberry *Ulmaceae Celtis laevigata*

**Leaf:** Alternate, simple, pinnately veined, 2 to 5 inches long, 1 to 2 inches wide, long acuminate tip, only upper half of leaf or less serrated (maybe entire), three distinct veins meet at the inequilateral base.

**Flower:** Very small (1/8 inch), greenish-white, produced on stalks near twig, appearing in spring.

**Fruit:** Fleishy, globose, 1/4 to 3/8 inch in diameter, orangish red turning purple when ripe, stalks short, maturing in fall.

**Twig:** Slender, zigzag, reddish brown, speckled with lighter lenticels, lateral buds are tightly appressed and triangular in shape, pith usually chambered at nodes.

**Bark:** Gray to light brown, smooth with corky "warty" patches, does not develop ridges, as does hackberry, although it is highly variable.

**Form:** Medium size tree to 80 feet tall, several feet in diameter, broad crown in open with drooping branches.



**Notes:**

### red maple *Acer rubrum*

**Leaf:** Opposite, simple, 3 to 5 palmate lobes with serrated margin, sinuses relatively shallow (but highly variable), 2 to 4 inches long; green above, whitened and sometimes glaucous or hairy beneath.

**Flower:** Attractive but small, occur in hanging clusters, usually bright red but occasionally yellow, appear in early spring, usually before leaves.

**Fruit:** Clusters of 1/2 to 3/4 inch long samaras with slightly divergent wings, on long slender stems. Light brown and often reddish, ripen in late spring and early summer.

**Twig:** Reddish and lustrous with small lenticels, buds usually blunt, green or reddish (fall and winter) with several loose scales usually present, leaf scars V-shaped, 3 bundle scars, lateral buds slightly stalked, may be collateral buds present.

**Bark:** On young trees, smooth and light gray, with age becomes darker and breaks up into long, fine scaly plates.

**Form:** Medium sized tree up to 90 feet. In forest, trunk usually clear for some distance, in the open the trunk is shorter and the crown rounded.



**Notes:**

### river birch *Betula nigra*

**Leaf:** Alternate, simple, pinnately-veined, rhombic to ovate, 1 1/2 to 3 inches long, conspicuously doubly serrate, with a wedge-shaped base, green above, paler and fuzzy below.

**Flower:** Monoecious; preformed, reddish green, male catkins near the end of the twig, 2 to 3 inches long; female catkins upright, 1/4 to 1/2 inch long, light green, appear or elongate (males) in mid-spring.

**Fruit:** Cone-like, aggregate, 1 to 1 1/2 inches long, with many hairy scales, reddish brown, containing many tiny, 3-winged seeds, ripen and break apart in the fall.

**Twig:** Slender, orangish brown in color, smooth or slightly pubescent, with the terminal bud absent. Lateral buds may be slightly pubescent. No wintergreen odor when cut.

**Bark:** Smooth on young trees, salmon to rust colored; developing papery scales, exfoliating horizontally with several colors (creamy to orangish-brown) visible; later developing coarse scales.

**Form:** Medium size tree reaching up to 70 feet tall. The trunk generally divides low into several upright trunks.



**Notes:**

### **bald cypress** Cupressaceae *Taxodium distichum*

**Leaf:**Linear and small, 1/4 to 3/4 inch long, generally appearing two-ranked. When growing on deciduous branchlets the leaf-deciduous branchlet structure resembles a feathery pinnately (or bi-pinnately) compound leaf; green to yellow-green.

**Flower:**Males in drooping, long panicles; females are subglobose, have peltate scales, and tend to occur near the end of branches.

**Fruit:**Cones are composed of peltate scales forming a woody, brown sphere with rough surfaces, 3/4 to 1 inch in diameter; cones disintegrate into irregular seeds.

**Twig:**May be deciduous or not; non-deciduous twigs are slender, alternate, brown, rough, with round buds near the end of the twig; deciduous twigs are two-ranked, resembling pinnately compound leaves.

**Bark:**Fibrous, red-brown but may be gray where exposed to the weather; old, thick bark may appear somewhat scaly.

**Form:**A large tree with a pyramid-shaped crown, cylindrical bole, fluted or buttressed base and often with knees.



#### **Notes:**

### **shagbark hickory** Juglandaceae *Carya ovata*

**Leaf:**Alternate, pinnately compound, 8 to 14 inches long with 5 (sometimes 7) leaflets, lateral leaflets are obovate to lanceolate, terminal leaflets are much larger than the laterals, margins serrate and ciliate, rachis stout and mostly glabrous; green above and paler below.

**Flower:**Monoecious; male flowers are yellow-green catkins, hanging in 3's, 2 to 3 inches long; females are very short, in clusters at the end of branches, both appear spring.

**Fruit:**Nearly round, 1 1/2 to 2 inches, with a very thick husk; nut is distinctly 4-ribbed, and the seed is sweet and delicious; maturing in fall.

**Twig:**Stout and usually tomentose, but may be somewhat pubescent near terminal bud, numerous lighter lenticels; leaf scars are raised, 3-lobed to semicircular - best described as a "monkey face"; terminal bud is large, brown, and pubescent, covered with 3 to 4 brown scales, more elongated than other hickories.

**Bark:**At first smooth and gray, later broken into long, wide plates attached at the middle, curving away from the trunk resulting in a coarsely shaggy appearance.

**Form:**A tall tree reaching over 120 feet tall with a straight trunk and an open round to oblong crown.



#### **Notes:**

**poison-ivy** Anacardiaceae *Toxicodendron radicans*

**Leaf:** Alternate, pinnately compound with 3 leaflets, 7 to 10 inches long, leaflets are ovate and irregularly toothed, shiny green above, paler below. TOXIC.

**Flower:** Monoecious; small, yellowish green, appearing in clusters, present late spring to early summer. TOXIC.

**Fruit:** Greenish white, round, 1/4 inch in diameter, borne in a hanging cluster, ripe in late summer and persist through winter. TOXIC.

**Twig:** Slender, gray- to red-brown, sparingly pubescent or glabrous, slender aerial roots present and older growth becomes densely covered and "hairy" in appearance; buds are stalked, naked, fuzzy brown, 1/4 inch long. TOXIC.

**Bark:** Dark gray, densely covered in aerial roots. TOXIC.

**Form:** May be present as a low (6 to 18 inches), spreading "carpet" on the forest floor, as a climbing vine, or as a bush.



**Notes:**

**boxelder** Aceraceae *Acer negundo*

**Leaf:** Opposite, pinnately compound, 3 to 5 leaflets (sometimes 7), 2 to 4 inches long, margin coarsely serrate or somewhat lobed, shape variable but leaflets often resemble a classic maple leaf, light green above and paler below.

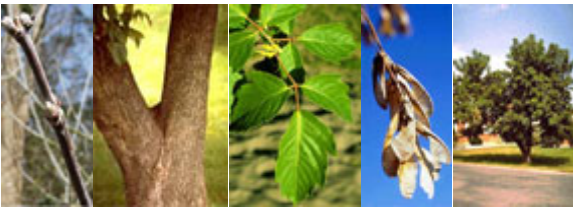
**Flower:** Dioecious; yellow-green, in drooping racemes; appearing in spring.

**Fruit:** Paired V-shaped samaras, 1 to 1 1/2 inches long, in drooping clusters, light tan when ripe in fall, persist throughout winter.

**Twig:** Green to purplish green, moderately stout, leaf scars narrow, meeting in raised points, often covered with a glaucous bloom; buds white and hairy, lateral buds appressed.

**Bark:** Thin, gray to light brown, with shallow interlacing ridges; young bark is generally warty.

**Form:** Medium sized tree to 60 feet, typically with poor form and multiple trunks; sprouts often occur on bole.



**Notes:**

**silk tree** Fabaceae *Albizia julibrissin*

**Leaf:** Alternate, bi-pinnately compound and very feathery, 10-20 inches long. Each leaflet is narrow and small, approximately 3/8 inch long.

**Flower:** Monoecious; very showy, occurring in rounded pink fluffy heads; individual flowers are small with long pink (1+ inch long) stamens; appearing in mid- to late summer.

**Fruit:** A flattened pod, 5-6 inches long, gray-brown when mature, containing several hard seeds.

**Twig:** Medium textured, zigzag, green-brown to gray-brown in color, with numerous lenticels; buds are few-scaled, small and rounded.

**Bark:** Smooth and gray-brown, even on larger stems.

**Form:** Small tree which branches low and quickly spreads into a wide V-shaped crown, especially when open-grown. Quickly develops a flat top and can reach 30 feet in height.



**Notes:**