

# Introduction to Botany: BIOL 154

## Lab 9. Anatomy of roots

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1. Read chapter 7, section 4 and atlases.
2. Root cross sections—*Ranunculus acris* (buttercup) **AND** *Smilax* sp. (greenbriar). Procedure: prepared slides. Assignments:
  - (a) Draw overview.  
**Label:** epidermis, cortex parenchyma, vascular cylinder, xylem, phloem, pericycle, endodermis
  - (b) Draw detail of vascular cylinder plus endodermis (single to 3-lined).  
**Label:** xylem, phloem, pericycle, endodermis
  - (c) **Compare** two roots, number and explain differences in *full sentences*.
3. Lateral root formation in *Salix* sp. (willow). Procedure: prepared slide. Assignment:
  - (a) Draw overview.  
**Label:** epidermis, cortex parenchyma, vascular cylinder, root primordium.
4. Primary root of *Zea mays* (maize) seedling. Procedure: prepared slide. Assignments:
  - (a) Draw overview of longitudinal section.  
**Label:** root cap, RAM, zone of absorption, zone of elongation
5. Root of orchid (Orchidaceae gen. sp.) with velamen **OR** haustorial root of *Cuscuta* sp. (dodder)<sup>1</sup>. Procedure: prepared slides. Assignments:
  - (a) Draw overview  
**Number** all differences of given root from “normal” roots (like *Ranunculus* or *Smilax*), then explain them in *full sentences*.

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<sup>1</sup>Please do not mix up haustorial root with host stem tissue!