

## VMW 261 Vine Physiology

### Take-Home Final

Answer each of the questions on one sheet of paper. Answers must be legible, and sketches well labeled. The exam is due before the in-class final.

1. Briefly sketch and describe the timing of steps by which an anlage formed on the apical meristem of a primary latent bud becomes a flower ready for pollination. Outline one environmental factor, one physiological factor\*, and one management practice that commonly have a significant impact on the number of clusters and flowers produced on a grapevine in Oregon.
2. Describe and sketch the set of steps that occur from pollination to veraison that determine the number and size of fruit growing in a grape cluster. Describe one environmental factor, one physiological factor\*, and one management practice that commonly affect these processes in an Oregon vineyard.
3. Outline the major processes in grape maturation that change a grape at lag phase into a grape at full maturity. Describe one environmental factor, one physiological factor\*, and one management practice that commonly affect these processes for the production of a quality red wine in an Oregon vineyard.
4. Fruit quality in winegrapes is a function of the changing concentration and distribution of many compounds during the harvest period, including glucose and fructose, tartaric and malic acids, amino acids and minerals, and anthocyanins and other phenolic compounds. Choose one set of quality compounds important to fruit quality in Oregon. Discuss how you might use specific management practices, discussed in class or our readings, to manipulate the ripening processes to optimize the concentration of these compounds at harvest.

\* A physiological factor can be the concentration of a type of compound (such a nutrient, carbohydrate, or hormone) or the rate of a critical process (such as photosynthesis, transport, or growth) that effects vine or crop development.