

## Department:

Viticulture and Enology

## Course Description:

This course is a study of commercial grape growing in the Midwest United States. Topics include cultivars, vine nutrition, irrigation, canopy management, pests, maturity sampling and harvest, balanced pruning/cropping, and cold injury.

## Course Competencies:

Upon completion of the course, the student should be able to:

1. List degree day units, length of growing season, average annual rainfall, and hardiness zone for region of residence and explain how these numbers/classifications are derived.
2. Explain how environmental parameters affect choice of cultivar and cultural managements.
3. List the wine grape cultivars that are adapted to the student's respective location.
4. List the nutrients required by grapes for proper growth.
5. Explain how nutrient status is assessed in the vineyard.
6. Calculate how many pounds of fertilizer with specific analysis are needed to supply a particular amount of nutrient to one acre of grapes.
7. List the components of a drip irrigation system.
8. Describe the steps in irrigation scheduling and relate the seasonal growth phase of the vine to water requirement.
9. Describe a canopy both in and out of balance.
10. Explain how initial vineyard establishment decisions as well as current cultural management impact canopy balance.
11. Identify the problems associated with over cropping and under cropping.
12. Describe the process to identify an unknown pest or cultural problem.
13. Demonstrate the use of a weed identification guide or dichotomous key in identification of weeds.
14. Explain the importance of vineyard floor management.
15. List the common diseases and vertebrate and invertebrate pests in the region.
16. Complete a sprayer calibration.
17. List the factors that are considered in order to determine when to harvest grapes.
18. List and explain the advantages and disadvantages of mechanical harvest operation.
19. Describe the effects of fruit quality on wine quality.
20. Explain the process of balanced pruning.
21. Calculate the number of buds to leave based on a particular pruning weight and pruning formula.
22. Describe the anatomy of the compound bud.
23. Explain the implications of bud anatomy on cold injury management.

24. List the cultural management practices already covered in this course and explain how these practices impact grapevine cold hardiness.
25. Explain how cold injury hazard and occurrence impacts pruning decisions.
26. Explain how the term “balance” is used in regional vineyard management in relation to canopy management, crop management, crop quality, and economic sustainability.
27. Describe the importance of record keeping in maintaining a balanced vineyard.

### Course Content:

- A. Grape Cultivars for the Midwest
- B. Vine Nutrition
- C. Water Management
- D. Canopy Management and Crop Thinning
- E. Vineyard Floor Management
- F. Pests and Diseases
- G. Harvest
- H. Balanced Pruning
- I. Cold Injury

### Learning Assessments:

Students will be evaluated using portfolios and presentations, written examinations, laboratory and field observations, class projects and activities, active participation in course dialog and scholarly activities including discovery, application and integration.

### Instructional Materials:

Wine Grape Production Guide for Eastern North America, Wolf, National Resource, Agriculture, and Engineering Service, 2008 ISBN: 9781933395128

#### **Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition**

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the “Disabilities Self-Identification Form” at this link:

<https://highlandcc.edu/pages/disability-services>.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.