

Department:

Viticulture and Enology

Course Description:

This course covers process technologies and process systems that are used in modern commercial wineries. The course will include lectures, demonstrations and two-day workshops and will provide an overview of winemaking systems, including winemaking operations and equipment, barrel aging and barrel management, membrane separation processes, specialized contacting systems, cleaning and sanitation systems, process control systems, refrigeration systems, air conditioning and humidity systems, electrical systems, waste water systems, solid waste handling, and work place safety.

Course Competencies:

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

1. Identify key equipment used in various steps of wine production.
2. Explain how to safely use winery equipment.
3. List the utility requirements for cellars.
4. Describe the application of gas equipment for wine processing.
5. Describe tank monitoring and control systems.
6. Identify the types of equipment necessary for wine production.
7. Describe the potential risks to grapes, must, and wine during processing.
8. Describe the risks to equipment during processing.
9. Explain the principles involved in estimating the size, time, and capacity requirements of various pieces of winery equipment.
10. Demonstrate the operation of necessary equipment as it relates to wine style.
11. Explain the operation of equipment in the processes of clarification, additions, and temperature control.
12. Distinguish the different types of fermenters as related to wine styles.
13. Explain cap management techniques.
14. Demonstrate how must, juice, and wine are transferred for different stages of wine making.
15. Identify the various types of clarification equipment.
16. Describe the process of clarification.
17. Explain the use of clarification equipment.
18. Describe the various types of storage containers related to wine styles.
19. Explain the different treatment processes related to the storage containers.
20. Explain the principles involved in tank gauging.
21. Calculate tank volumes.
22. Solve blending ratios.

23. Describe equipment used for mixing.
24. Describe manual and automatic bottling operations.
25. Explain the setup and cleanup processes.
26. Explain the principles involved in quality control of wine, packaging, and storage.

Course Content:

- A. Safety Issues
- B. Sanitation Procedures
- C. Hose and Fittings
- D. Winery Metals and Materials
- E. Fermentation and Storage Tanks
- F. Crush Equipment and Presses
- G. Pumps and Alternatives
- H. Barrels and Barrel Alternatives
- I. Filters
- J. Bottling Equipment
- K. Waste Management

Learning Assessments:

Course competencies will be assessed by use of 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:

Winery Utilities Planning, Design and Operation, Storm, Chapman and Hall, 1997
ISBN 0834219816.

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.