

Department:

Viticulture and Enology

Course Description:

This course is an introduction to the variety of both beneficial and harmful microorganisms frequently encountered in the winemaking process. Topics include identification, physiology, morphology and biochemistry of various wine microorganisms.

Course Competencies:

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

1. Demonstrate basic knowledge of the principles of wine microbiology.
2. List the positive and negative microorganisms encountered in wine production.
3. Explain the roles of positive and negative microorganisms encountered in wine production.
4. Describe the growth and control of various grape and wine microorganisms.
5. Describe methods and techniques used in wine production that reflect a basic understanding of the effects of various microorganisms.
6. Describe microbiological processes involved in alcoholic fermentation.
7. Describe the microbiological process of MLF.
8. Explain when and why MLF is used.
9. Demonstrate basic understanding of how spoilage microorganisms in wine are diagnosed.
10. Describe processes used to prevent undesirable microorganism activity in wines.
11. Describe considerations involved in setting up a wine microbiology send out program.
12. Describe the process involved in collecting a wine sample for send out to a microbiology laboratory.
13. Describe considerations involved in setting up a wine microbiology laboratory.

Course Content:

- A. Brief History of Wine Microbiology
- B. General Characteristics of Wine Microorganisms
- C. Yeasts
- D. Lactic Acid Bacteria
- E. Molds and Other Microorganisms
- F. Managing Microbial Growth
- G. Microbial Ecology During Vinification
- H. Harvest and Transport
- I. Grapes and Musts
- J. Alcoholic Fermentation
- K. Malolactic Fermentation

- L. Fermentation Problems
- M. Post-Fermentation
- N. Winery Sanitization
- O. Wine Spoilage and Faults
- P. Procedures for Deciding When to Collect Samples for Microbiological Examination
- Q. Procedures for Collecting Samples for Send Out to a Microbiology Lab
- R. Setting Up a Wine Microbiology Laboratory

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:

Wine Microbiology: Practical Applications and Procedures, Fugelsang, Edwards, Springer Science + Business Media, 2007 ISBN 9780387333410

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.