

**Department:**

Viticulture and Enology

**Course Description:**

This course offers a practical understanding of the obstacles and promise of growing grapes and making wine in cold climates. Topics relating to cold climate production include history, physical limits of grapes, successful varieties, viticulture and enology methods for producing quality cold climate wine, the state of cold climate research, a review of resources, and marketing strategies in cold climate regions.

**Course Competencies:**

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

1. Demonstrate cold climate terminology.
2. Define climate and interpret climate data
3. Explain: what is cold hardiness?
4. Summarize grape production across biomes.
5. Describe how cold kills and shoot versus bud tissue cold tolerance strategies.
6. Relate manipulation of vine physiology to achieving maximum yields and cold hardiness.
7. Decipher vine health: genetic potential versus vine condition and climate.
8. Describe increased humidity leading to growth and disease.
9. Describe effects of high soil fertility.
10. Describe aspect of sunlight in cold climate regions.
11. Summarize grape pest occurrence in the continental climate.
12. Understand the cold climate aspects and limits of *Vitis vinifera*, traditional cold climate grapes, and new cold climate varieties.
13. Understand the market evolution of what grapes are planted and what are desired in the young cold climate industry.
14. Understand what climate grapes really like: the good and bad of the cold climate.
15. Illustrate cold climate canopy management for fruit exposure to sun, successful trellis types, and reducing malic acid and pH in the vineyard.
16. Relay strengths and weaknesses of wine types that the cold climate can produce.
17. Note where and what world class wines are being produced in cold climate regions.
18. Decipher local public demand versus the breadth of cold climate wine potential.
19. Explain methods of reducing malic acid and reducing pH during vinification.
20. Describe anthocyanins and tannins in cold climate reds.
21. Describe the enology methods that are working, and common faults during vinification of cold climate wines.
22. Refer to resources for the cold climate industry: newsletters, books, papers, workshops, labs for testing wines.
23. List value added or secondary product opportunities for the cold climate industry.

## Course Content:

- A. Cold Climate Regions
- B. Grape variety choices relating to cold climate regions.
- C. Trellis systems common to cold climate regions.
- D. Cold Climate Canopy Management
- E. Winterizing the vineyard
- F. Winemaking differences between warm and cold climate grapes.
- G. Resources to review the latest research in cold climate viticulture and enology.

## 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:

Textbook: The Minnesota Grape Growers Association. (2016). *Growing Grapes in Minnesota*. (10<sup>th</sup> ed.).

### **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” on our [Disability Services website](#).

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.

### **A Note on Harassment, Discrimination and Sexual Misconduct**

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).