

Department:

Viticulture and Enology

Course Description:

The information in this course will address management issues related to common, expected pest problems as well as the occasional appearance of minor pest problems. Effective grape production depends on the grower developing a system of grape management that is appropriate for each vineyard. Decisions need to be made for how to manage all of the normal cultural practices such as planting, fertility, harvesting, and pruning as well as managing the insect, disease, and weed problems that occur either regularly or sporadically.

Course Competencies:

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

1. Explain the concept of integrated pest management (IPM) and the components that go into developing an IPM plan.
2. Explain differences between cultural, biological, and chemical control.
3. Describe reasons for and methods of reducing pesticide use.
4. Describe basic pest biology of bud, fruit, leaf, and root insect pests.
5. Identify insect pests of grapes in your region.
6. Explain how to effectively select fungicides, herbicides, and insecticides for management of grape pests while considering factors such as efficacy, cost, safety, and proper use.
7. Explain how cultural and non-chemical controls can be used to manage grape pests.
8. Explain the importance of monitoring, scouting, the use of apps and forecasting, and the use of new and emerging technologies like remote sensing and unmanned aerial systems.
9. Describe when weed management of vines is most critical.
10. Describe the recommended type of between-row vegetation.
11. Identify grape herbicides and appropriate use.
12. Explain drift, volatility and the potential impact of herbicides used in other cropping systems on vineyards.
13. Identify economically important weed species in your area.
14. Explain and describe bacterial, fungal, and viral diseases.
15. Explain and describe disease vectors.
16. Determine which disease is causing damage based on symptoms of grape fruit, leaves, and vines.
17. Explain how weather affects the development of grape diseases and identify useful apps and forecasting tools.
18. Explain which stage of vine development is susceptible or not susceptible to particular diseases.
19. Explain the difference between primary and secondary infections.
20. Explain the difference between protectant and systemic fungicides.
21. List ways to alternate insecticides in order to manage for resistance.
22. Describe about the different ways insect populations can develop resistance to insecticides.
23. List and describe organic insect, disease, and weed management practices.

24. Determine which fungicides and insecticides are organic.
25. Identify and describe bird, deer, and vertebrate pest control options and which are most effective.
26. Explain Worker Protection Standards (WPS).
27. Explain pesticide applicator certification/licensing, and applicator safety.
28. Explain how pesticides are registered at the federal and state level.
29. Calibrate a sprayer to achieve the desired pest control goals.
30. Develop a sustainable integrated pest management plan.

Course Content:

- A. Overview of Grape Integrated Pest Management (IPM)
- B. Pesticide Laws, Labeling, and Formulations
- C. Hazards and Personal Protective Equipment
- D. Pesticides in the Environment
- E. Insects and Insecticides
- F. Weeds and Herbicides
- G. Diseases and Fungicides
- H. Management of Birds, Deer, and Other Vertebrate Pests
- I. Pesticide Resistance
- J. Forecasting, Apps, and Technologies

Learning Assessments:

Competencies may be evaluated by multiple measures, including exams, experiments, article reviews, research, projects, and written assignments.

Instructional Materials:

National Pesticide Applicator Certification Core Manual (2nd Edition). 2014. This is a free download at: <https://www.epa.gov/system/files/documents/2022-09/national-pesticide-applicator-cert-core-manual-2014.pdf>

Midwest Fruit Pest Management Guide 2021-2022. This is a free download at: <https://ag.purdue.edu/hla/hort/documents/id-465.pdf>

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](#).