VIN 211 – Integrated Pest Management

Date: **August 30 - November 19, 2021**   Semester: **Fall 2021**
Instructor: Tom Smith   Host: Kent State University - Ashtabula
Email: tsmith@kent.edu   Host Course Number: VIN-21100-200-202180
Phone: (517) 202-3019   Course Credit: 2 Hours
Office Hours: By appointment via phone or email   Delivery Format: Online

Course Description

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. 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.

Prerequisites: None

Next Course in Sequence: VIN 213

Course Objectives

Through lectures, facilitated discussions, projects and online assignments the student will:

- Explain the concept of integrated pest management (IPM) and the components that go into developing an IPM plan.
- Explain differences between cultural, biological, and chemical control.
- Describe reasons for and methods of reducing pesticide use.
- Describe basic pest biology of bud and fruit insect pests.
- Describe basic pest biology of leaf and root insect pests.
- Describe which pests are considered minor, absent, or infrequent insect pests of grapes in your region.
- Identify insect pests of grapes in your region.
- Explain how to effectively select insecticides for management of grape insect pests while considering factors such as efficacy, cost, safety, and proper use.
- Explain how non-chemical controls can be used to manage grape insect pests.
- 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.
- Describe when weed management of vines is most critical.
- Describe the recommended type of between-row vegetation.

- Describe non-herbicide alternatives to weed control.
- Identify grape herbicides and appropriate use.
- Explain drift, volatility and the potential impact of herbicides used in other cropping systems on vineyards.
- Develop a sustainable weed management plan.
- Identify economically important weed species in your area.
- Explain and describe viral and bacterial diseases
- Explain and describe disease vectors
- Determine which disease is causing damage based on symptoms of grape fruit, leaves, and vines.
- Explain how weather affects the development of grape diseases and identify useful apps and forecasting tools.
- Explain which stage of vine development is susceptible or not susceptible to particular diseases.
- Explain the difference between primary and secondary infections.
- Explain the difference between protectant and systemic fungicides.
- Explain how to select the appropriate fungicide for management of particular diseases.
- Explain how cultural controls can be used to manage diseases.
- Describe why some pesticides are more likely and some are less likely to select for resistant pest populations.
- List ways to alternate insecticides in order to manage for resistance.
- Describe about the different ways insect populations can develop resistance to insecticides.
- Describe which fungicides are prone to select for disease-resistant populations of pathogens and which have low or no risk for resistance development.
- List and describe organic insect, disease, and weed management practices.
- Determine which fungicides and insecticides are organic and which are not.
- Explain how pheromone mating disruption works and how it can be used to manage populations of grape berry moth.
- Identify and describe bird, deer, and vertebrate pest control options and which are most effective.
- Explain Worker Protection Standards (WPS).
- Explain pesticide applicator certification/licensing, and applicator safety.
- Explain how pesticides are registered at the federal and state level.

Textbooks
The publications below are accessible online at no cost; please download them for this class.

National Pesticide Applicator Certification Core Manual, 2ⁿᵈ Edition, 2014 at
 http://www.nasda.org/foundation/pesticide-applicator-certification-and-training

Midwest Fruit Pest Management Guide 2021-2022 at
https://ag.purdue.edu/hla/hort/documents/id-465.pdf

Supplemental Materials
Integrated Pest Management in the Vineyard http://grapes.msu.edu/integrated_pest_management

PERC - Pesticide Educational Resources Collaborative. Worker Protection Standards resources at
http://www.pesticideresources.org/

Proposed Schedule and Topics

Week — Date	Tuesday Live Class Dates	Topics
1 08/30 - 09/05	08/31	Introduction and General Overview of Grape IPM – Core Manual Ch. 1; cultivar selection and IPM
2 09/07 - 09/12	09/07	Pesticide Laws and Pesticide Labeling – Core Manual Ch. 2 and 3
3 09/13 - 09/19	09/14	Pesticide Formulations, Hazards, and Personal Protective Equipment – Core Manual Ch. 4, 5 and 6
4 09/20 - 09/26	09/21	Insects - Bud and Fruit Pests
5 09/27 - 10/03	09/28	Insects - Leaf, Root, and Minor Pests
6 10/04 - 10/10	10/05	Weeds, Herbicides, 2,4-D, Dicamba, and other herbicide injury; drift and volatility **Mini-project 1 due**
7 10/11 - 10/17	10/12	Diseases - Fruit Rots; Mobile Apps and Forecasting
8 10/18 - 10/24	10/19	Diseases - Downy Mildew, Powdery Mildew Anthracnose, Crown Gall, Eutypa, and Phomopsis
9 10/25 - 10/31	10/26	Pesticides in the Environment; Pesticide Transportation and Storage; Emergency Response – Core Manual Ch. 7, 8 and 9 **Mini-project 2 due**
10 11/01 - 11/07	11/02	Pesticide Resistance; Bio-rational Pest Management; Biotechnology
11 11/08 - 11/14	11/09	Management of Birds, Deer, and Other Vertebrate Pests
12 11/15 - 11/19	11/16	Review for Final Exam **Final Project**

The instructor reserves the right to adjust the schedule as necessary.

Instructional Methods

This is an online course with a synchronous component. An online course site is provided by the host institution to provide announcements, prerecorded lectures, notes, supplemental printed and web-based materials, and assignments. It also serves as a central point for interaction/communication between the instructor and the students.

Live Class Meetings

The live class meeting will take place once a week on **Tuesday from 8:00 to 9:00 p.m. Central Time** via the **Zoom** web conferencing system. Participation to the live class meetings is <u>required</u> and a participation grade is assigned. This is an opportunity for the instructor to go over weekly topic highlights and for students to interact with the instructor and fellow students through questions and

discussions. Students are expected to be prepared to ask questions and actively participate in the discussions.

The link to the Zoom virtual classroom will be posted at the top of each weekly module. Students will use the *same* virtual classroom for their live class meetings the entire semester. The sessions will take place on the dates listed in the above schedule.

It is the student's responsibility to notify the instructor in advance if he/she must miss a class. Students who missed a class meeting are required to view the recording of the live class as soon as possible.

Course Assignments: Course assignments include lectures, assigned reading and research, discussion questions, two mini projects and a final project.

Lectures: Any lecture slides and videos must be viewed before each online live discussion sessions. Not all classes will have this information.

Assigned Readings: Assigned readings will include textbook chapters and additional resources. They must be completed before the online live discussion sessions.

Discussion Board Questions: Students will be asked to post question(s) based on lectures and readings on the online course site "Discussion Board" by noon of the day of the live class meeting. The instructor will address these questions during the live class meeting. After the meeting, students should post a response to their own question(s) and also respond to other student questions before the following week's live class meeting.

Your instructor will also post one question per week in the Discussion Board weekly forum. You must respond to the question under the "**Instructor Question**" thread before the following week's live class meeting.

Two Mini Projects: Each student will complete two mini-projects related to specific topics in the course. These projects are designed for the student to develop specific pest management information for their particular local or regional area. Detailed information will be provided in the online course site.

Final Project: Each student will be asked to put together an IPM program for a sample vineyard based on economics, efficacy, geographic location, and other factors that will influence your management strategies. Details will be provided in the online course site. This project is due by the last week of class.

Written Assignments

All written assignments will be typed. Spelling and grammar are extremely important in professional writing and papers will be scored accordingly. Written assignments will need to be submitted to the instructor by listed deadlines.

Expectations and Instructor Feedback

Students should participate in the weekly virtual class meetings. It is also the students' responsibility to check the online course site on a regular basis, be aware of the required activities and assignments, and adhere to the deadlines. This will ensure a successful learning experience.

The instructor will make the best effort to respond to student questions and complete assignment/exam grading on a timely manner.

Grading

Student grades will be determined based on their total points earned in the class. The table below outlines the total points possible and their percentage weight.

Percentage Weight of Student Performance		
Activity	**Percentage**	**Points**
Discussion Questions	25%	250 (Weeks 2-11, 25 points each)
Class Participation	22.5%	225 (at least 10 participations for full points)
Mini Project 1	15%	150
Mini Project 2	17.5%	175
Final Project	20%	200
Total	**100 %**	**1,000**

Grade calculation: total points earned ÷ total points possible; then using the following scale to determine final letter grades:

90 – 100% = A	80 – 89.9% = B	70 – 79.9% = C	60 – 69.9% = D	Below 60% = F

Make-up Policy

Projects and assignments can be made up only in the event of an excused absence where the instructor has prior knowledge of the absence. Allowance of make-up assignments will be at the discretion of the instructor and will be taken on the date of the student's return to class.

INSTITUTIONAL POLICIES ON NEXT PAGE

Kent State University - Ashtabula Institutional Policies

Withdrawal from a Course

Should it become necessary to withdraw, it is the student's responsibility to do so according to the Operational Policy and Procedure Regarding Withdrawal from Courses at:
http://www.kent.edu/policyreg/operational-policy-and-procedure-regarding-withdrawal-courses

Students planning to withdraw from this course <u>must</u> also complete the VESTA Withdrawal/Change of Schedule form and submitting to the VESTA office.

Attendance Policy

Regular attendance in class is expected of all students at all levels at Kent State University. While classes are conducted on the premise that regular attendance is expected, the university recognizes certain activities, events, and circumstances as legitimate reasons for absence from class. This policy provides for accommodations in accordance with federal and state laws prohibiting discrimination, and can be reviewed at:
http://www.kent.edu/policyreg/administrative-policy-regarding-class-attendance-and-class-absence

Diversity, Equity, and Inclusion

Kent State University is committed to the creation and nurturing of a diverse community of individuals through inclusive excellence. Diversity involves recognizing the value of differences and the inclusion of all members of the community including those that experience discrimination or under representation. This is a core value of the university as we strive for a culturally diverse student body, faculty, and staff that reflect the multicultural nature of Ohio, the nation, and our world; bringing unique strengths and abilities which contribute to our pursuit of Inclusive Excellence in Action. For more information contact Dr. Amoaba Gooden, Vice President for Diversity, Equity & Inclusion at diversity@kent.edu or go to: https://www.kent.edu/diversity/mission-statement

Student Accessibility Services

The Office of Student Accessibility Services at Kent State – Ashtabula provides assistance to students with varying degrees and types of disabilities in order to maximize educational opportunity and academic potential. For more information and a complete listing of disability services:
http://www.kent.edu/ashtabula/student-accessibility-services

Academic Honesty and Plagiarism at KSU

In the Fall Semester of 2012 Kent State University implemented a new policy on student cheating and plagiarism. Complete details of the policy in regards to academic honesty can be accessed at:
3-01.8 Administrative Policy on Student Cheating and Plagiarism.

Enrollment and Official Registration

Important Open Registration Dates for Fall 2021

Open Reg. Start Date	Open Reg. End Date and Last Day to Add	Last Day to Drop/Withdraw (with a grade of "W")
04-20-2021	09-01-2021	11-03-2021

The above dates are subject to change. For the latest information go to:
https://www.kent.edu/registrar/fall-important-dates

Per University Policy, students have the responsibility to ensure they are properly enrolled in classes. You are advised to review your official class schedule in Flashfast (located in the "Student Tools" tab in Flashline) during the first two weeks of the semester to ensure you are properly enrolled in this class and section. Should you find an error in your class schedule, it is your responsibility to correct the error. Students who are not officially registered for a course by published University deadlines should not be attending classes and will not receive credit or a grade for the course.

Tuition Credit Policy

Prior to first day of classes, 100%
Entire first week of classes, 100%
Second week of classes, 80%
Third week of classes, 65%
Fourth week of classes, 60%
After the end of the fourth week of classes no refunds will be made.

The above information is subject to change. For more information go to:
http://www.kent.edu/bursar/tuition-credit-policy