VESTA
VITICULTURE & ENOLOGY SCIENCE & TECHNOLOGY ALLIANCE
An Advanced Technological Education
Resource Center
Grape and Wine Education for the 21st Century

VIN 112 - Botanical Viticulture

Date: **August 28 - December 8, 2023**
Instructor: Christopher Milne, Ph.D.
Email: CMilne@pstcc.edu
Office Hours: By appointment via phone or email
Course Credit: 4 hours (3 hours lecture and 1 hour lab)

Semester: **Fall 2023**
Host: Pellissippi State CC
Host Course No.: VIN112-
Delivery Format: Online
Phone:

Course Description

This course is designed to provide students with an overview of the plant kingdom and to examine grapevine form and function from a botanical perspective. Topics to be covered include the specific characteristics of plants that distinguish them from other forms of life, divisions within the plant kingdom with representative members of each, and plant classification. Plant cells, tissues, life cycles, structures, and functions, especially as applied to grapevines will also be discussed, along with various aspects of plant and grapevine physiology, such as photosynthesis, respiration, nutrition, cold acclimation and hardiness, and dormancy.

Prerequisites: None

Next Course in Sequence: VIN 111 and/or one of either VIN 212, VIN 214, or VIN 215

Course Objectives

Through lectures, study guides, quizzes, exams, and laboratory exercises, the student will demonstrate an understanding of:

- Forms of life on earth
- Plant taxonomy
- Structures and functions of plant cells
- Different plant life cycles, and the structures and functions of plant tissues
- Grapevine morphology, including roots, shoots and perennial wood, leaves and vine canopy, flowers and berries
- Grapevine plant processes: photosynthesis (Pn) and respiration, sources and sinks, and photoassimilate partitioning and carbohydrate storage
- The vine dormant season
- Plant nutrients and their role in grapevines
- Genetics including Mendelian inheritance, rediscovery in early 20th century, and potential role in hybrid grape development
- Ecology, plant variability and evolution

Required Textbook

It is the student's responsibility to obtain the textbook for this course by the first week of class. Check with the vendor of your choice for pricing and availability.

Mauseth, J. D. (2019). ***Botany: An Introduction to Plant Biology*** **(7th ed.)**. Jones & Bartlett Learning. ISBN-13: 978-1-28-415735-2

Instructional Methods

This is an online course with a synchronous component. An online course site is provided by the host institution to provide announcements, 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

There are two live class meetings every week on **Tuesday and Thursday from 6:00 to 7:00 p.m. Central Time** via the **Zoom** web conferencing system. Participation to the live class meetings is required 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. The recording of each live class will be available within 24-48 hours after each session for those who miss a live class.

Course Assignments

Course assignments include weekly live class sessions, reading assignments, online lectures/presentations, study guides, quizzes, exams, and laboratory exercises.

Weekly Assignments: Online lectures/presentations and web/print-based materials will be posted on the online course site. Students should view the prerecorded weekly lecture video and complete the weekly reading assignments before each live class meeting.

Discussion Board: There is a required Introduction forum on the Discussion Board.

Course Schedule and Outline of Topics

Week — Dates	Bi-weekly Live Class Dates	Course Topics	Reading and Graded Assignments
1 08/28 - 09/03	8/29 & 8/31	Introduction; Life and Life Forms; Plant Chemistry	Reading: Ch. 1 & 2 Introduction Discussion
2 09/05 - 09/10	9/5 & 9/7	Plant Cells: Structures and Functions	Reading: Ch. 3 & 4 Wk 2 Discussion
3 09/11 - 09/17	9/12 & 9/14	Plant Tissues: Stems, Leaves, and Roots	Reading: Ch. 5 & 6 Wk 3 Discussion
4 09/18 - 09/24	9/19 & 9/21	Plant Morphology: Structures and Functions	Reading: Ch. 8 Begin Lab Report #1 Wk 4 Discussion
5 09/25 - 10/01	9/26 & 9/28	Flowering and Reproduction	Reading: Ch. 9 **Botany Journal Lab Report #1 due** Wk 5 Discussion
6 10/02 - 10/08	10/3 & 10/5	Photosynthesis, Photoassimilate Partitioning and Storage	Reading: Ch. 10 Begin Lab Report #2 Wk 6 Discussion
7 10/09 - 10/15	10/10 & 10/12	**Midterm Exam**	Midterm Exam Begin Lab Report #2 No reading assignment
8 10/16 - 10/22	10/17 & 10/19	Respiration and Transport	Reading: Ch. 11 & 12 **Botany Journal Lab Report #2 due** Wk 8 Discussion
9 10/23 - 10/29	10/24 & 10/26	Plant Nutrition	Reading: Ch. 13 Begin Lab Report #3 Wk 9 Discussion
10 10/30 - 11/05	10/31 & 11/2	Phytohormones and Plant Development	Reading: Ch. 14 **Botany Journal Lab Report #3 due** Wk 10 Discussion
11 11/06 - 11/12	11/7 & 11/9	Plant Genetics and Grapevine Breeding	Reading: Ch. 15 & 16 Begin Lab Report #4 Wk 11 Discussion
12 11/13 - 11/19	11/14 & 11/16	Plant Taxonomy and the Plant Kingdom	Reading: Ch. 18, 22, & 23 **Botany Journal Lab Report #4 due** Wk 12 Discussion
13 11/20 - 11/26	11/21	Ecology and Evolution Thanksgiving Holiday (11/23 – 11/26)	Reading: Ch. 26 & 27 Begin Lab Report #5 Wk 13 Discussion
14 11/27 - 12/03	11/28 & 11/30	**Grapevine Coldhardiness and Dormancy, Acclimation and Deacclimation**	Reading: Ch. 11 & 12 **Botany Journal Lab Report #5 (Mini Research Paper) due** Wk 14 Discussion
15 12/04 - 12/08	12/5 & 12/7	**Final Exam** Complete VESTA Course Evaluation	Final Exam **VESTA Course Survey**

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

Course Assignments

Course assignments include weekly live class sessions, reading assignments, online lectures/presentations, study guides, quizzes, exams, and laboratory exercises.

Weekly Assignments: Online lectures/presentations and web/print-based materials will be posted on the online course site. Students should view the prerecorded weekly lecture video and complete the weekly reading assignments before each live class meeting.

Discussion Board: There is a required Introduction forum on the Discussion Board.

Exams: There are two exams each worth 100 points in this course. The Midterm Exam will be taken in Week 7 and the Final Exam in Week 15. Students will take the exams online through the course site. Exams may consist of multiple choice, matching, labeling, identification, fill in the blank, short answer or essay questions. Exams will cover material from lecture notes, the textbook, and website links. These two exams will be the most challenging part of the course for most students.

Laboratory Exercises: Laboratory exercises will be conducted. After laboratories are complete students will submit the information in a posted file. Each Laboratory Report will be worth 50 points. Detailed information will be provided on the online course site.

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 POLICY ON NEXT PAGE

Grading: Student grades will be determined based on their total points earned in the class. The table below outlines the 535 points possible in the class.

Percentage Weight of Student Performance		
Activity	**Percentage** (rounded)	**Points Possible**
Discussions	11	60 (5 pts each x 12)
Lab Report #1	9	50
Midterm Exam	19	100
Lab Report #2	9	50
Lab Report #3	9	50
Lab Report #4	9	50
Lab Report #5	14	75
Final Exam	19	100
Total	**100%**	**535**

How your grade will be calculated: your points earned ÷ total points possible

The following scale will be used for determining final letter grades:

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