



VIN 210 (ENO 1213) - Introduction to Wine Microorganisms

Date: September 6 – December 16, 2011

Course Name: Introduction to Wine Microorganisms

Course Credit: 3 Hour

Semester: Fall 2011

Course No.: VIN 210 (ENO 1213)

Room: Online

Instructor: Paul Gospodarczyk

E-mail: paul@todayswineprofessional.com

Phone: (515) 707-7875

Office Hours: By appt, phone, e-mail

Course Description: This course is designed to introduce students to the basic principles of wine microbiology and to serve as an introduction to the variety of microorganisms frequently encountered in the wine making process. Yeasts, bacteria, and molds play vital roles in the production of wine, both beneficial and harmful. Students will become familiar with the morphology, reproduction, and sensory attributes of wine microorganisms in order to understand their influence on winemaking, and to be able to manage them effectively.

Prerequisites: None

Next Course in Sequence: VIN 148 or VIN 160

Course Objectives

Through lectures, facilitated discussions, quizzes and written assignments the student will be able to:

- Demonstrate basic knowledge of principles of wine microbiology
- List the important microorganisms encountered during wine production
- Describe the growth and control of various grape and wine microorganisms
- Describe microbiological processes involved in alcoholic fermentation
- Describe microbiological process of MLF
- Calculate appropriate SO₂ and Nitrogen additions to wine and must
- Describe methods and techniques used in wine production that reflect a basic understanding of the effects of various microorganisms
- Demonstrate basic understanding of how spoilage microorganisms in wine are diagnosed
- Describe processes used to prevent undesirable microorganism activity in wines
- Identify major wine spoilage organisms by sensory assessment
- Demonstrate basic understanding of various cleaning and sanitation regimes typically used in wineries.

Textbook

Students are responsible for acquiring the textbook.

Wine Microbiology: Practical Applications and Procedures. Fugelsang and Edwards. 2nd Edition. Springer Science+Business Media, LLC. New York, NY, 2007.

Proposed Topics and Schedule

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

WEEK	LECTURE TOPIC
1	Introduction to Wine Microorganisms 1. Basics of Growth and Development 2. Types of MOs in wine 3. Nutrition 4. Culturing microbes
2	Yeasts 1. Reproduction 2. Taxonomy 3. Metabolism
3	Bacteria 1. Reproduction 2. Taxonomy 3. Metabolism
4	Molds and Other Microorganisms 1. Ecology 2. Taxonomy 3. Nutrition 4. Metabolism
5	Exam I Review Exam will be posted 10/5-10/12
6	Managing Microbial Growth 1. Environmental impacts 2. Encouraging growth 3. Inhibiting growth 4. Filtration
7	Microbial Ecology During Vinification 1. Stages of development 2. Positive and negative interactions of various MOs
8	Wine Processing: Vineyard and Pre-fermentation Musts 1. Fruit Quality Assessment 2. Processing Must
9	Wine Processing: Managing Fermentation 1. Additives to must 2. Sluggish fermentations 3. Malolactic fermentation

10	Wine Processing: Post-fermentation/Aging 1. Barrels and aging 2. Bottling issues
11	Practicum Workshop Weekend 11/12 and 11/13 No Class on 11/16 (Note from Liang: This will be moved to the correct week and the rest of the topic schedule adjusted accordingly.)
12	Winery Cleaning and Sanitation 1. Detergents and cleaners 2. Sanitizers 3. Preventatives
13	Spoilage Organisms and Sensory Attributes 1. Types of organisms 2. Visual and olfactory associations with various MOs
14	Media Preparation, Aseptic Technique 1. Selective vs. non-selective media 2. Media sterilization 3. Media additives 4. Basic microscopy
15	Exam II Review Exam II (cumulative) will be posted 12/14-12/18

Instructional Methods

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

The live class meeting will take place once a week on **Wednesday from 8 to 9 p.m. Central Time** via the Centra web-based conference system. It 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.

Practicum Workshop (will update)

Students are required to participate in a practicum workshop for this course. This sensory evaluation lab practicum will give students practical experience detecting the organoleptic characteristics resulting from microbial activity in wine, both the positive characteristics from fermentation and the undesirable characteristics from spoilage organisms. Additionally, students will have the opportunity to identify various micro-organisms under a microscope. The workshop is scheduled for **November 12 and 13**. Details on location and schedule will be provided in class.

Course Assignments

There will be weekly lecture and reading assignments, four online assessments, and two exams.

Weekly Reading Assignments: Students should view the prerecorded weekly lecture video before the live class meeting. The reading assignments should be completed by the end of the week.

Online Assessments: These quiz-like exercises are intended to help students keep up with the progression of the course. The topics will focus on important points that are likely to reappear on exams. Students receive full credit for these exercises if they are finished by the deadline.

Exams: There will be one mid-term exam and a final exam. The mid-term exam will cover topics learned since the beginning of the semester. The final exam will be cumulative. Students will take the exams online through the course site.

Expectations

With the online course format, students are expected to participate and be prepared to interact in the live class meetings. Students also need to check the online course site for class materials and communications regularly, be aware of the required activities and assignments, and adhere to the deadlines listed in the course schedule. This will ensure a successful learning experience.

Live Class Meeting Participation

Participation to the live class meeting is crucial. It is the student's responsibility to notify the instructor in advance if he/she has to miss a class. Students who missed a class meeting should view the session recording as soon as possible and inform the instructor.

Late Assignments

No late assignments will be accepted. Students should work ahead instead of making up.

Grading

Grading is on a simple point system as follows:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

The percentage weight of student performance will be:

Examinations (2)	200 points	50%
Online Assessments (4)	100 points	25%
Workshop	50 points	12.5%
Participation	50 points	12.5%
Total Grade	400 points	100%

Incomplete grades are not given in this class. Should it become necessary to withdraw, it is the student's responsibility to do so according to the guidelines in the Rend Lake College student handbook.

Attendance Policy

VESTA believes that students must attend class in order to achieve the best learning results. In the case of online courses, attendance is defined as active participation in the form of attending synchronous class meetings (if applicable), completing reading/writing/testing assignments by assigned deadlines, and maintaining regular communication with course instructor via the online course site and communication tools designated by the instructor. For courses with a field practicum/workshop component, students must participate and complete the number of hours of practical experience required. Instructors may assign attendance grade as part of course grade if they choose to do so.

Make up Policy and Special Instructions

The exams 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 tests will be at the discretion of the instructor and will be taken on the date of the student's return to class.

Academic Integrity

This class is subject to Rend Lake College's Academic Integrity policy. All submitted work must be your own. Cheating or Plagiarism will not be tolerated. Any student found in violation of this policy will be subject to disciplinary action as outlined by Rend Lake College's Academic integrity policy.

Equal Educational Opportunity

Rend Lake College is committed to providing equal educational opportunities for all persons without regard to race, color, religion, sex, age, national origin, or disability.

Students with Disabilities

If you have, or believe you have, a disability and would benefit from accommodations, you may contact Sue Cunningham, at 618-437-5321, Extension 1204.