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Grape and Wine Education for the 21st Century

VIN 160 – Winery Equipment Operation

Date: **January 25 – April 16, 2021**

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Virtual Office Hours: By appointment, phone, email

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Semester: **Spring 2021**

Host: Northeast Wisconsin Tech. Col.

Host Course No.: TBA

Course Credit: 2 Hours

Delivery Format: Online

Course Description

This course covers process technologies and process systems that are used in modern commercial wineries. The course will include lectures and online demonstrations. This course is an overview of winemaking systems including work place safety, cleaning and sanitation procedures, winemaking equipment and materials, tanks, barrels and barrel alternatives, filtration systems, and bottling equipment. We will also touch on chillers and electrical needs.

Prerequisites: VIN 146 Introduction to Enology or instructor permission

Next Course in Sequence: VIN 246 and VIN 247

Course Objectives

Through lectures, facilitated discussions, quizzes, and written assignments the student who successfully completes this course will be able to:

- Identify equipment used in wine production
- List the utility requirements for cellars
- Describe the application of various gases for wine processing
- Describe tank monitoring and control systems
- Describe the risks to wine when using certain pieces of equipment in processing
- Explain the principles involved in estimating the size, time, and capacity requirements of various pieces of winery equipment
- Demonstrate the operations of necessary equipment as it relates to wine style
- Distinguish the different types of fermenters as related to wine style
- Describe different methods of moving wine and juice
- Identify the various types of clarification equipment
- Demonstrate the use of the clarification equipment
- Describe the various types of metals used for winery equipment
- Explain the different treatments for cleaning winery equipment
- Explain methods of waste management
- Explain the principles involved in tank gauging

- Calculate tank volumes
- Solve blending ratios
- Describe manual and automatic bottling operations
- Explain bottling line setup and cleanup processes
- Demonstrate the principles involved in quality control of wine and packaging

Recommended Textbook

The following book is a recommended reference text, purchase is optional.

Storm, D. R. (1997). *Winery Utilities, Planning, Design, and Operation*. Chapman and Hall.

Course Schedule and Outline of Topics

Week — Dates	Thursday Live Class Dates	Topics
1 01/25 - 01/31	01/28	Introduction and Safety Issues
2 02/01 - 02/07	02/04	Sanitation Procedures
3 02/08 - 02/14	02/11	Hose and Fittings
4 02/16 - 02/21	02/18	Winery Metals and Materials
5 02/22 - 02/28	02/25	Fermentation and Storage Tanks
6 03/01 - 03/07	03/04	Crush Equipment Winery Equipment Price List Assignment due
7 03/08 - 03/14	03/11	Presses Midterm Exam
8 03/15 - 03/21	03/18	Pumps and Alternatives
9 03/22 - 03/28	03/25	Barrels and Barrel Alternatives
10 03/29 - 04/04	04/01	Filters
11 04/05 - 04/11	04/08	Bottling Equipment, Waste Management
12 04/12 - 04/16	04/15	Student Presentation/Discussion of Practicum Project Experience Winery Equipment Project due Final Exam

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

Instructional Format

This is an online course with a synchronous component. An online course site (Learning Management System) 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.

The live class meeting will take place every **Thursday from 7:00 to 8:00 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 lecture assignments (prerecorded lectures and supplemental documents) and discussion questions, a winery equipment price list assignment, a winery equipment project and two online exams.

Weekly Lecture Materials and Questions - Weekly lecture video(s) and additional materials should be viewed **before** the live class session. Each student should bring at least one question, based on the content materials, to Thursday's live class session for discussion. After the session, students should post their question with an answer to the question in the week's discussion board forum by Monday, 10 p.m. Central Time of the following week. Students are encouraged to comment/add to fellow students' posts.

Winery Equipment Price List - Students will make a list of typical winery equipment with price. At the minimum, list hoses, fittings, clamps, destemmer/crusher, presses, tanks, pumps, barrels, filters, and bottling equipment. Base all your equipment needs on a winery crushing 50 tons of grapes or has an annual production of 7500 gallons. Information can be found online and by calling purveyors.

Exams - There will be a Midterm Exam (Week 7) which will cover information discussed during weeks 1-5. There will be a non-cumulative Final Exam (Week 12) which will cover information discussed during weeks 6-11. The exams must be taken online anytime during the week scheduled, by the posted deadline. **There are no makeup exams.**

Winery Equipment Project

This course has always required an winery equipment project (eight hour on-site observation at a winery) as part of the course requirements. *However, due to the ongoing COVID-19 epidemic in our*

country, and since a lockdown, and/or other local or state mandated restrictions due to the pandemic could make it impossible for students to fulfill an on-site visit, a written research paper option can be substituted for an on-site field observation. Students are asked to choose one of the following options.

Option 1: Research Paper

Complete an in-depth 3-5 page research paper in MS Word or PDF format. The topic will be of your choice on a specific piece of winery equipment. More details will be provided during a live class session.

Option 2: Field Observation

Complete an eight hour (minimum) on-site visit to a winery where you will be observing, surveying, and assisting (if allowed by the winery) equipment operations.

Each student is required to identify a winery and mentor that would be willing to allow the student to visit and observe on-going winery operations.

This option also requires a write-up of your field experience . Prepare a 3-5 page report which logs your experience, including name and location of the winery; and the name and a description of each specific piece of equipment (use, manufacturer, capacity, etc.) and the operation observed/assisted. More details will be provided during a live class session.

Late Assignments

Assignments are due by the date listed in the course schedule. 5% of the assignment grade will be deducted for each day the assignment is late unless prearranged with the instructor. Spelling and grammar are extremely important in professional writing and papers will be scored accordingly.

Expectations and Instructor Feedback

Students are expected to participate and prepare 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.

The instructor will make every 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
Class Participation	10%	100 points (10 participations for full points)
Weekly Questions	10%	100 points (weeks 1 to 10, 10 points each)
Midterm Exam	25%	250 points
Final Exam	25%	250 points
Winery Equipment Price List Assignment	10%	100 points
Winery Equipment Project	20%	200 points
Total	100%	1000 points

Grade calculation: total points earned \div 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
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Incomplete grades are not given in this class. It is the students' responsibility to see that all graded assignments and exams reach the instructor in a timely fashion, so grades can be issued.

INTUITIONAL POLICIES ON FOLLOWING PAGE

Northeast Wisconsin Technical College Institutional Policies

Student Responsibilities and Policies

As a student of NWTC, you are expected to adhere to the policies of the College, as outlined in the *Student Handbook* which can be viewed and/or downloaded at:

<https://www.nwtc.edu/NWTC/media/student-experience/student%20involvement/FY16-17-Student-Handbook-FINAL-without-ad-pages.pdf>

Please be fully aware of the following policies: Academic Integrity (includes plagiarism, cheating and collusion); Assessment; Copyright Notice; Refund Policy; Student Code of Conduct; Withdrawal from a Class or Program.

Withdrawals and Refunds

Should it become necessary to withdraw, it is the student's responsibility to do so according to the guidelines in Northeast Wisconsin Technical College policy. For information related to withdrawals and refunds click on this link:

<http://www.nwtc.edu/services/studentfinancialservices/Pages/RefundPolicy.aspx>

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

Student Email

NWTC offers a student e-mail account for all students. All official email sent from the host institution or sent through Blackboard, will go to this account. Therefore, you are responsible for monitoring your NWTC student email account. Student email can be accessed by visiting <https://www.nwtc.edu/students/new-students> Student technical assistance is available 24 hours a day, 7 days a week; call toll free at 1-866-235-5037.

If you do not intend to use your NWTC email account, you must contact tech support to redirect (forward) your NWTC email to the email account of your choice. Your instructor will not accept "I didn't get the email" as a legitimate excuse for missing assignments, schedule changes, or other important messages from your instructor, or the host institution.

Disability Act Statement

NWTC complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. For more information contact Student Accommodations Services at: <https://www.nwtc.edu/student-experience/accommodation-services>

Student Rights

For additional information regarding your rights as a student, including college policies on harassment, student rights and other services available at NWTC, please consult the NWTC Student Handbook, available through Student Services or on the NWTC webpage at <http://www.nwtc.edu>

Student Code of Conduct

Students are expected to conduct themselves in accordance with the Student Code of Conduct listed in the *Student Handbook* (see link above). As noted in the handbook, violations will be brought to the immediate attention of the Student Conduct Team and may be referred to the Dean of Student Development or to the Supervisor of Student Involvement. Additionally, in cases where behavior(s) warrants concern over the safety of the student(s), an alert may be made to the Responsive Intervention for Student Concerns (RISC) Committee.

Class Cancellation

Class cancellations by the institution will be posted as early as possible in the “Announcements” section of the Blackboard course site. Students will also be notified by email.