



An Advanced Technological Education  
**Resource Center**

Grape and Wine Education for the 21<sup>st</sup> Century

## VIN 160 – Winery Equipment Operation

Date: **January 29 – April 19, 2024**

Instructor: Lauren Fiala

Email: lauren.fiala@nwtc.edu

Virtual Office Hours: By appointment, phone, email

Phone: 330-957-7944

Semester: **Spring 2024**

Host: Northeast Wisconsin Tech. Col.

Host Course No.:

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, exams, 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
- Explain the different technology for cleaning
- 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 #<br>—<br>Dates       | Wednesday<br>Live Class<br>Dates | Topics  |
|----------------------------|----------------------------------|---|
| <b>1</b><br>01/29 - 02/04  | 01/31                            | Introduction and Safety Issues  |
| <b>2</b><br>02/05 – 2/11   | 02/07                            | Crush Equipment and Presses   |
| <b>3</b><br>02/12 – 2/18   | 02/14                            | Hose and Fittings   |
| <b>4</b><br>02/19 – 2/25   | 02/21                            | Fermentation and Storage Tanks  |
| <b>5</b><br>02/26 – 03/03  | 02/28                            | Uses of Inert Gas in the Cellar   |
| <b>6</b><br>03/04 – 03/10  | 03/06                            | Barrels and Alternatives<br><b>Winery Equipment Price List Assignment due</b>   |
| <b>7</b><br>03/11 – 03/17  | 03/13                            | Pumps and Alternatives<br><b>Midterm Exam</b>   |
| <b>8</b><br>03/18 – 03/24  | 03/20                            | Filtration  |
| <b>9</b><br>03/25 – 03/31  | 03/27                            | Heat Exchangers and Cooling Systems / Sanitation Equipment  |
| <b>10</b><br>04/01 – 04/07 | 04/03                            | Calculating Tank Measurements / Calculating Blend Ratios  |
| <b>11</b><br>04/08 – 04/14 | 04/10                            | Bottling Equipment  |
| <b>12</b><br>04/15 – 04/19 | 04/17                            | Student Presentation/Discussion of Practicum Project Experience<br><b>Winery Equipment Project due</b><br><b>Final Exam</b> |

*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 **Wednesday from 8:00 to 9:00 p.m. Central Time** via the **Zoom** web conferencing system. Participation in 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 the list of weekly modules. 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.

| <b>Percentage Weight of Student Performance</b> |                   |  |
|---|-------------------|--|
| <b>Activity</b>                                 | <b>Percentage</b> | <b>Points</b>                                  |
| 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                                     |
| <b>Total</b>                                    | <b>100%</b>       | <b>1000 points</b>                             |

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 |
|---------------|----------------|----------------|----------------|---------------|

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.