WINE-102: INTRODUCTION TO ENOLOGY

Effective Term
Fall 2026

BOT Approval Date
12/11/2025

Discipline
WINE - Viticulture, Enology & Winery

Course Number
102

Course Title
Introduction to Enology

Short Title
Intro to Enology

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lecture Units
3.00

Total Units
3.00

Hours

Lecture Contact Hours
48-54

Out of Class Hours Lecture
96-108

Total Contact Hours
48 - 54

Total Out of Class Hours
96 - 108

Total Student Learning Hours
144 - 162

Distance Education
Yes

Distance Education

Distance Education Type
Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:
a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods: • Orientation - Students must be oriented to the online and face-to-face portions at the start of the course. • Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc. • Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction. • MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students. • Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS. • Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course provides an overview of enology - the science and technology of winemaking. Students will study the principles and processes involved in transforming grapes into wine, including grape composition, fermentation, wine chemistry, maturation, and bottling. Emphasis is placed on the interaction between vineyard practices and wine quality, sensory evaluation, and the influence of winemaking decisions on flavor and quality. Students must be 21 years or older to participate in wine tasting.

Codes

TOP Code (CB 03)

0104.00* - *Viticulture, Enology, and Wine Business

CIP Code

01.0309 - Viticulture and Enology.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Agricultural Business and Related Services	Or
Agricultural Production	Or
Chemistry (Masters Required)	End

GE Information

Check GE Types Requested

AA/AS A - Natural and Physical Sciences

Learning Objectives

Learning Objectives

Learning Objective
1. Investigate fundamental enology concepts by exploring scientific, technological, and cultural aspects of winemaking, including historical and global perspectives.
2. Differentiate winemaking processes from grape reception to bottling, emphasizing safe, ethical, and sustainable practices that respect diverse labor contributions and cultural traditions.
3. Develop and implement a comprehensive production plan for premium wine, incorporating considerations of quality, sustainability, and equitable resource management.
4. Evaluate alternative winemaking practices by comparing traditional, modern, and experimental techniques while considering environmental impacts and contributions of global winemaking communities.
5. Assess results of winemaking experiments through data collection, interpretation, and critical analysis, fostering scientific reasoning and informed decision-making.
6. Examine principles of wine chemistry and microbiology to understand fermentation, spoilage prevention, and quality control
7. Investigate scientific literature related to winemaking by identifying reliable sources, including peer-reviewed research, and incorporating multiple perspectives.
8. Analyze wine labeling information to understand regulatory, marketing, and cultural aspects, ensuring understanding of content across diverse audiences.
9. Consider climate, soil, and geographic factors in shaping wine characteristics, emphasizing sustainable practices and regional diversity in viticulture and enology.
10. Compare resources and production strategies across wine-growing regions, highlighting global diversity, equity, and access to technology, labor, and education in winemaking.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will apply scientific principles of enology to explain and perform fundamental winemaking processes such as fermentation, chemical testing, or quality control.
2. Students will evaluate winemaking techniques and regional practices in relation to sustainability, environmental conditions, and production goals.
3. Students will develop a structured production plan for premium wine that demonstrates understanding of scientific, ethical, and regulatory standards in enology.

Content

Course Lecture Content

1. World History of Winemaking
   a. Exploration of winemaking origins, ancient practices, and the evolution of techniques across different cultures.
2. Global Contemporary Winemaking
   a. Explore how cultural traditions and innovations from different wine-producing regions have influenced global winemaking practices.
3. California History of Winemaking
   a. Development of the wine industry in California, including key historical events, pioneers, and regional growth.
4. World Wine-Producing Regions
   a. Overview of major global wine regions, including their climate, soils, grape varieties, and winemaking traditions.
5. California Wine-Producing Regions
   a. Examination of California AVAs, regional climates, soil types, and varietal specializations.
6. Grape Varieties for Wine Production
   a. Identification and comparison of common wine grape varieties, including their characteristics, suitability, and flavor profiles.
7. Traditional European Wine Styles
   a. Study of classical European wine styles and their influence on modern winemaking practices worldwide.
8. Global and Culturally Diverse Winemaking Traditions

   a. Exploration of non-European wine styles and fermentation practices from regions such as Georgia, South Africa, East Asia, and Latin America, emphasizing cultural and environmental influences on enology.
9. Global Climate Regions and Wine Production
   a. Analysis of how climate zones affect grape growth, ripening, and wine style.
10. California Climate Regions and Viticulture
   a. Examination of microclimates, temperature variations, and their impact on varietal selection and wine quality.
11. Influence of Climate, Soil, and Topography
   a. Understanding terroir and how environmental factors shape grape composition and wine character.
12. Yeasts and Bacteria in Fermentation
   a. Roles of microorganisms in alcoholic and malolactic fermentation, including natural and inoculated strains.
13. Grape Crushing and Pressing Techniques
   a. Methods for extracting juice while managing phenolic and flavor components.
14. Post-Fermentation Handling
   a. Practices for aging, racking, and managing wine stability after fermentation.
15. Chemical Analysis of Wine
   a. Measurement of acidity, sugar, alcohol, and sulfur dioxide levels, and principles of blending for balance and quality.
16. Barrel and Tank Storage
   a. Use of oak barrels and stainless steel tanks for maturation, including factors affecting flavor and wine stability.
17. Filtration, Fining, Racking, and Bottling
   a. Techniques to clarify, stabilize, and package wine while maintaining quality.
18. Case Storage and Shipping
   a. Proper storage, handling, and distribution methods to ensure wine quality from winery to consumer.
19. Wine Spoilage Disorders
   a. Identification, causes, and prevention of common spoilage issues, including microbial and chemical faults.
20. Winery Sanitation and Safety Practices
   a. Implementation of hygiene protocols, personal safety, and equipment maintenance in production facilities.
21. Record-Keeping Practices
   a. Documentation of production, quality control, and regulatory compliance for operational efficiency.
22. Legal Compliance Requirements
   a. Overview of federal, state, and local laws governing wine production, labeling, distribution, and safety.

Methods of Instruction

Method

Lecture

Integration

Instructor-led presentations introduce foundational concepts of winemaking, such as fermentation science, wine chemistry, and production practices. Lectures include demonstrations, visual aids, and opportunities for Q&A.

DE Adaptations for MOI

Lectures are delivered through accessible recorded videos or live virtual sessions via CMS. Closed captioning, visual aids, and interactive tools (e.g., quizzes, polls) ensure accessibility. All accessibility requirements will be met to ensure that all students, including those with disabilities, have equitable access to participate in discussions and fully engage with course content.

Method

Lab Activities

Integration

Hands-on lab sessions include grape processing, fermentation monitoring, chemical testing, and quality evaluation. Students work in small groups to gain direct experience with industry-standard equipment and techniques.

DE Adaptations for MOI

Students receive accessible detailed video demonstrations and step-by-step lab guides. At-home experiment kits or simulated lab activities (e.g., virtual labs, data analysis from provided datasets) allow participation. Students submit observations, data logs, and reflections online. All submissions and feedback must meet accessibility guidelines

Method

Discussion

Integration

In-class discussions encourage peer-to-peer learning and critical thinking about scientific concepts, global wine practices, sustainability, and ethical considerations.

DE Adaptations for MOI

Online discussion boards and synchronous class sessions used for structured discussions. Prompts are designed to promote inclusive participation and reflective dialogue. All accessibility requirements will be met to ensure that all students, including those with disabilities, have equitable access to participate in discussions and fully engage with course content.

Method

Reading

Integration

Students read textbooks, scientific articles, and case studies to build theoretical understanding and connect lecture topics to real-world winemaking practices.

DE Adaptations for MOI

Digital reading materials are provided through the LMS. Interactive annotation tools or guided reading questions are included to support understanding.

Method

Field Trips

Integration

Visits to local wineries and vineyards give students firsthand exposure to professional production environments, equipment, and industry practices. Students complete reflective assignments based on these experiences.

DE Adaptations for MOI

Virtual field trips using accessible video tours, live-streamed sessions with industry professionals, or recorded interviews. Students complete the same reflective assignments and analyses based on virtual experiences. All class participation will adhere to accessibility standards.

Methods of Evaluation

Method

Exams/Tests

Integration

Students complete written exams and quizzes to assess understanding of winemaking concepts, fermentation science, wine chemistry, and regulations. Exams may include multiple-choice, short answer, and applied problem-solving questions.

DE Adaptations for MOE

Exams and quizzes are administered through the CMS with timed settings and randomized question banks. Academic integrity is maintained through honor code agreements, proctoring tools, and alternative assessments such as open-book applied questions.

Method

Homework

Integration

Students complete assigned textbook chapters, scientific articles, and case studies on topics such as fermentation chemistry, regional winemaking techniques, microbial influences on flavor development, and sustainability in wine production. Comprehension is evaluated through in-class discussions, reading response journals, or short written assignments.

DE Adaptations for MOE

Reading materials are provided digitally. Understanding is assessed through online discussion forums, guided reading questions, or digital reading journals submitted via the CMS. All submissions and feedback must meet accessibility guidelines

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Method

Other

Integration

Hands-on lab work includes grape processing, fermentation tracking, chemical testing, and sanitation practices. Students submit lab reports and maintain a detailed fermentation log for evaluation.

DE Adaptations for MOE

Lab experiences are replicated through virtual labs, accessible video demonstrations, data analysis of instructor-provided datasets, or at-home experiment kits when feasible. Students submit digital lab reports and reflective analyses documenting their work. All class participation will adhere to accessibility standards.

Method

Other

Integration

After visits to local wineries or vineyards, students complete a reflective assignment connecting observations to course content and industry practices.

DE Adaptations for MOE

Virtual field trips use accessible recorded video tours or live-streamed sessions with winery professionals. Students complete the same reflective assignment, analyzing the experience and connecting it to scientific and practical concepts. All class participation will adhere to accessibility standards.

Assignments

Assignment Type

Writing

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Monitor an active fermentation in the campus lab over a two-week period. Record daily observations of Brix levels, temperature, and visible changes, and relate findings to concepts such as yeast activity, fermentation kinetics, and environmental control. Submit a short reflection paper linking these observations to lecture topics and assigned readings.

How assignment will be adapted in online format

Provided with video demonstrations of fermentation steps to and datasets representing real fermentation processes to students. Analyze the data, interpret changes over time, and submit a digital reflection. Peer feedback occurs via an online discussion board to compare interpretations and deepen understanding.

Assignment Type
Writing

In-class and/or outside of class
Outside of class

Formative or Summative
Summative

Assignment
Develop a comprehensive wine production plan detailing vineyard selection, production methods, fermentation management, chemical testing, sanitation protocols, quality control measures, sustainability strategies, and regulatory compliance. Present findings through a written report and an in-class presentation demonstrating applied enology knowledge and professional communication skills.

How assignment will be adapted in online format
Submit their production plans digitally and present them through recorded videos or live virtual sessions. Peer review and feedback are facilitated through the CMS using structured rubrics and comment tools. Supplemental digital materials such as case studies and equipment specifications are provided to support equitable access.

Assignment Type
Reading

In-class and/or outside of class
Outside of class

Formative or Summative
Formative

Assignment
Read a case study or article highlighting non-European winemaking traditions—such as South African, South American, or Indigenous approaches to fermentation, grape selection, and community-based vineyard practices. Participate in a guided discussion comparing these traditions with European and Californian methods, emphasizing the influence of environment, culture, and values on wine style and production.

How assignment will be adapted in online format
Post a reflection to the online discussion board summarizing key insights from the assigned reading and respond to at least one peer. Highlight how diverse cultural perspectives contribute to innovation, inclusivity, and sustainability in contemporary winemaking.

Course Materials

Textbooks
Ribéreau-Gayon, P., Glories, Y., Maujean, A., & Dubourdieu, D. (2021). Handbook of Enology, volume 2: The chemistry of wine stabilization and treatments. John Wiley & Sons. ISBN: 9781119587668
Jackson, R. S. (2020). Wine science: principles and applications. Academic press. ISBN: 9780128161180

Class Size Information

Class Size
32

Class Size Category
G - Large lab 32

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion are embedded throughout WINE 102 by exploring winemaking as a scientific, cultural, and global practice. The course highlights how wine production reflects the contributions of diverse communities. Students examine how different regions and cultures around the world have shaped modern winemaking techniques and traditions, fostering a deeper appreciation for wine as both a product of science and a reflection of cultural heritage.
By integrating these perspectives, students gain an understanding of how the science of enology intersects with social and ethical issues, including sustainability, labor equity, and access to technology and education. This approach ensures that students see the relevance of enology beyond technical skills, preparing them to become thoughtful and inclusive professionals in the wine industry.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course is designed to support diverse learners through varied instructional strategies, assignments, and assessments that accommodate multiple learning styles and levels of experience:
Assignments provide students with different ways to demonstrate learning, such as lab reports, fermentation journals, and wine production planning projects. These can be completed in various formats, including written, visual, or digital presentations, thus allowing students to select the method that best aligns with their skills and experiences.
Instruction incorporates global perspectives and emphasizes accessibility. Lectures and demonstrations use clear, inclusive language supported by visuals, hands-on activities, and real-world examples. Scientific concepts are presented at a level that is approachable for beginners while still challenging students with prior experience.
Evaluation methods balance formative and summative assessments. Frequent low-stakes assessments, such as lab reflections or quizzes, provide early feedback and opportunities for growth. High-stakes assignments, like the final wine production plan, are graded using clear, transparent rubrics that outline expectations and promote fairness.
Course content emphasizes both the scientific and cultural dimensions of winemaking, including discussions of sustainability, climate change, labor practices, and global trade. Readings and case studies are selected to reflect diverse voices and avoid stereotypes, ensuring that students encounter multiple viewpoints.
Classroom and online interactions are structured to foster respectful dialogue. Discussion guidelines encourage students to listen actively, value diverse experiences, and engage in constructive conversations about both scientific topics and broader industry challenges.

Interactions

Explain how the course will incorporate student-to-student interaction.

Collaboration plays a central role in this course. Students work in small groups during lab activities such as fermentation monitoring, chemical testing, and quality control exercises. These group settings encourage the sharing of diverse perspectives and peer-to-peer learning. Class and online discussions further allow students to exchange ideas about winemaking practices, global wine regions, sustainability issues, and ethical considerations, helping them to build communication and teamwork skills relevant to the wine industry.

Explain how the course will incorporate instructor-to-student interaction.

The instructor provides guidance through lectures, lab demonstrations, and individualized feedback focused on core enology topics such as fermentation management, sensory evaluation, and quality control testing. In-person students engage through Q&A during tastings and lab sessions, and office hours for troubleshooting production plans or lab results. Distance education students interact through virtual office hours, discussion forums on fermentation outcomes or case studies, and direct messaging on the CMS for clarification of winemaking procedures. Regular check-ins throughout the term ensure students are progressing in both technical and conceptual understanding, fostering an equitable and supportive learning environment for all.

Explain how the course will incorporate student-to-content interaction.

Course content is delivered through a combination of lectures, readings, lab experiments, and field experiences. In-person students directly engage with winemaking equipment and processes, while DE students use interactive videos, virtual lab simulations, and instructor-provided datasets to experience similar activities remotely. Students also analyze scientific literature, case studies, and regional comparisons to deepen their understanding of enology, connecting theoretical knowledge to practical applications in the wine industry.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Students are encouraged to reflect on their own learning and progress throughout the course. Activities such as fermentation journals, reflective lab reports, and field trip analyses prompt students to assess their strengths, identify areas for improvement, and set goals for future development. By engaging in this self-reflective process, students build the metacognitive skills necessary for continuous growth as learners and professionals.

Key: 2931