The Science and Production of Wine and Spirits (Enology/Distilling) Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The Science and Production of Wine and Spirits (Enology/Distilling) Training Course offers an in-depth understanding of the scientific, technical, and sensory aspects of fermentation, distillation, and product maturation. This course explores the chemistry, microbiology, and artistry involved in crafting high-quality wines and spirits, focusing on process control, flavor development, and quality assurance. Participants will gain the practical expertise necessary to manage fermentation, select yeast strains, handle raw materials, and optimize production conditions for consistency and excellence.

Through expert-led instruction, laboratory sessions, and global case studies, this course empowers professionals to blend traditional craftsmanship with modern enological and distilling technologies. The program also covers sustainability practices, regulatory compliance, and sensory evaluation techniques that define excellence in contemporary beverage production. It is ideal for individuals seeking to elevate their expertise in fermentation science, quality management, and product innovation in the wine and spirits industry.

Programme Curriculum

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Course Objectives

1. Understand the science of fermentation and distillation.
2. Explore the chemistry and microbiology of wine and spirit production.
3. Learn raw material selection and handling for optimum quality.
4. Apply process control techniques for consistent production.
5. Study yeast metabolism, enzymatic reactions, and alcohol formation.
6. Examine maturation, aging, and flavor development mechanisms.
7. Analyze distillation methods for different spirit categories.
8. Implement quality assurance and sensory evaluation techniques.
9. Understand sustainability and waste management in production.
10. Explore packaging and storage considerations for stability.
11. Study international standards and regulatory compliance.
12. Investigate innovation and product diversification trends.
13. Apply case studies to real-world wine and spirit production systems.

Organizational Benefits

1. Enhanced production efficiency and product quality.
2. Increased understanding of fermentation and distillation processes.
3. Improved compliance with international beverage standards.
4. Strengthened brand reputation through consistent product quality.
5. Reduced production losses through process optimization.
6. Integration of sustainable production and waste minimization practices.
7. Empowered workforce with technical and analytical skills.
8. Expanded capacity for product innovation and diversification.
9. Improved sensory evaluation and consumer satisfaction.
10. Strengthened competitiveness in global wine and spirits markets.

Target Audiences

1. Winemakers and distillers
2. Beverage production and operations managers
3. Quality assurance and laboratory professionals
4. R&D specialists in fermentation and beverage technology
5. Brewery and distillery startup entrepreneurs
6. Agricultural producers and ingredient suppliers
7. Regulatory and compliance officers
8. Hospitality and beverage marketing professionals

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Enology and Distilling Science

- Overview of the wine and spirits industry
- History and evolution of fermentation and distillation
- Key differences between wine, beer, and spirits production
- The role of chemistry and microbiology in beverage science
- Key production equipment and facility design
- Case Study: Modern Innovations in French Winemaking

Module 2: Raw Materials and Ingredient Management

- Grape and grain selection criteria for quality outcomes
- Sugar, starch, and acid balance in raw materials
- Yeast and enzyme selection and preparation
- Handling and storage of grapes, cereals, and molasses
- Impact of terroir and crop management on flavor
- Case Study: Grape Variety Selection in California Vineyards

Module 3: Fermentation Science and Technology

- Principles of alcoholic fermentation
- Microbial metabolism and yeast physiology
- Temperature and pH control in fermentation tanks
- Management of fermentation kinetics
- Troubleshooting stuck or sluggish fermentations
- Case Study: Yeast Performance in Red Wine Production

Module 4: Distillation Principles and Practices

- Fundamentals of distillation and alcohol separation
- Column and pot still technologies
- Fractional distillation and spirit purity control
- Blending and flavor consistency methods
- Spirit classification and regional variations
- Case Study: Traditional Cognac Distillation Processes

Module 5: Maturation, Aging, and Flavor Chemistry

- Role of oak barrels and storage conditions
- Chemical changes during maturation
- Oxygenation and flavor compound development
- Controlling oxidation and microbial stability
- Influence of time and environment on final product quality
- Case Study: Barrel Aging in Premium Whiskey Production

Module 6: Quality Control and Sensory Evaluation

- Analytical testing of wines and spirits
- Detection of defects and off-flavors
- Sensory evaluation techniques and flavor profiling
- Panel training and sensory calibration
- Linking sensory data to consumer preferences

- Case Study: Sensory Analysis of Sparkling Wine

Module 7: Regulatory Compliance and Safety Standards

- Global regulatory frameworks for wine and spirits
- Labeling, certification, and export requirements
- Alcohol tax and excise regulations
- Traceability and record-keeping systems
- Managing hygiene and safety in beverage plants
- Case Study: Regulatory Compliance in EU Spirit Exports

Module 8: Sustainability and Innovation in Beverage Production

- Sustainable viticulture and distillery practices
- Waste and by-product management (pomace, lees, slops)
- Renewable energy and water conservation strategies
- Innovation in low-alcohol and alcohol-free beverages
- Future trends in digitalization and automation
- Case Study: Eco-friendly Distillery Operations in Scotland

Training Methodology

1. Expert-led lectures and guided discussions
2. Practical demonstrations and laboratory experiments
3. Group case study analysis and presentations
4. Interactive sensory and tasting workshops
5. Evaluation through applied projects and reflective assessments

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com