Brewing and Distilling Science and Technology Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Brewing and Distilling Science and Technology Training course is designed to equip participants with cutting-edge knowledge, practical skills, and modern innovations in brewing and distilling. This course emphasizes sustainable practices, advanced brewing chemistry, fermentation technologies, and quality assurance measures to meet the demands of today?ÇÖs competitive beverage industry. Participants will gain in-depth exposure to the entire brewing and distillation process, covering raw material selection, yeast management, equipment optimization, sensory evaluation, and packaging systems. With an applied approach, the course integrates real-world case studies and best practices to ensure participants leave with both technical expertise and industry-ready confidence.

This comprehensive training combines scientific principles with modern technological applications, empowering professionals to improve production efficiency, innovation, and product safety. By the end of the course, learners will be equipped to address challenges such as sustainable brewing, global market trends, compliance with regulations, and maintaining product consistency in dynamic production environments. This industry-focused program is suitable for individuals seeking career advancement, entrepreneurs in the craft and commercial sectors, and organizations aspiring to strengthen their technical and operational capacities in brewing and distilling.

Programme Curriculum

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Course Objectives

1. To develop knowledge of brewing science and distilling technology with trending sustainability practices
2. To enhance skills in raw material selection for optimal product innovation
3. To apply advanced fermentation techniques for consistent beverage quality
4. To understand distillation equipment design, operation, and maintenance
5. To integrate modern brewing chemistry and yeast management approaches
6. To apply quality control systems and safety compliance in brewing operations
7. To analyze packaging technologies and sustainable distribution solutions
8. To evaluate sensory characteristics for product development and improvement
9. To explore waste management and circular economy solutions in brewing
10. To implement digital brewing technologies and automation systems
11. To strengthen problem-solving skills through case studies and industry challenges
12. To understand regulatory frameworks and global brewing standards
13. To empower innovation and entrepreneurship in craft brewing and distilling

Organizational Benefits

1. Increased operational efficiency and reduced waste
2. Enhanced product consistency and improved brand image
3. Adoption of sustainable brewing and eco-friendly distilling practices
4. Improved compliance with international regulations and standards
5. Enhanced innovation capacity and competitive market advantage
6. Reduced production costs through optimized processes
7. Improved technical expertise among staff members
8. Better customer satisfaction through consistent quality products
9. Enhanced ability to integrate new brewing technologies
10. Strengthened organizational resilience in the global beverage industry

Target Audiences

1. Brewery and distillery professionals
2. Beverage production supervisors
3. Food and beverage technologists
4. Quality assurance managers

5. Brewing and fermentation scientists
6. Entrepreneurs in craft brewing and distilling
7. Production engineers and technologists
8. Regulatory and compliance officers

Course Duration: 10 days

Course Modules

Module 1: Introduction to Brewing and Distilling Science

- Overview of brewing and distilling industries
- Fundamentals of fermentation science
- History and evolution of brewing technologies
- Industry trends and consumer demands
- Global market opportunities
- Case study: Growth of craft brewing industry

Module 2: Raw Materials in Brewing and Distilling

- Selection of barley, wheat, and grains
- Role of hops in flavor and aroma
- Water chemistry and its influence
- Yeast strains and their applications
- Sugar sources in distillation
- Case study: Craft brewery raw material sourcing

Module 3: Brewing Chemistry and Biochemistry

- Starch breakdown and enzymatic activity
- Protein modification and foam stability
- Yeast metabolism and alcohol production
- Influence of pH and temperature
- Flavor chemistry in brewing
- Case study: Managing off-flavors in beer production

Module 4: Fermentation Technologies

- Fermentation vessel design
- Temperature and oxygen management
- High-gravity brewing applications
- Monitoring fermentation progress
- Automation in fermentation control
- Case study: Advanced fermentation in whiskey production

Module 5: Distillation Principles and Practices

- Pot stills versus column stills
- Fractional distillation techniques
- Heat management and energy efficiency
- Distillate cuts and flavor control
- Safety in distillation operations

- Case study: Vodka distillation processes

Module 6: Yeast Management and Propagation

- Yeast culture preservation
- Yeast propagation systems
- Genetic selection of yeast strains
- Impact of yeast health on product quality
- Contamination prevention strategies
- Case study: Yeast management in large-scale breweries

Module 7: Equipment and Technology in Brewing

- Brewhouse design and layout
- Boilers and heat exchangers
- Milling and mashing equipment
- Fermentation and storage tanks
- Bottling and canning systems
- Case study: Equipment optimization in microbreweries

Module 8: Quality Assurance and Control

- Quality management systems (QMS)
- Laboratory testing methods
- Microbiological monitoring
- Sensory panel evaluations
- HACCP in brewing and distilling
- Case study: Quality failures and corrective measures

Module 9: Packaging and Distribution Systems

- Bottle, can, and keg technologies
- Sustainable packaging solutions
- Carbonation and stability control
- Labeling regulations and requirements
- Distribution strategies and logistics
- Case study: Sustainable packaging in beer exports

Module 10: Sustainability in Brewing and Distilling

- Water and energy conservation
- Renewable energy applications
- Circular economy in brewing
- Eco-friendly packaging
- Waste reduction technologies
- Case study: Brewery waste-to-energy initiatives

Module 11: Digital Brewing Technologies

- Automation in brewing processes
- IoT applications in breweries
- AI and data analytics in production

- Predictive maintenance systems
- Digital monitoring dashboards
- Case study: Smart brewery operations

Module 12: Regulatory Compliance and Safety

- International brewing regulations
- Food safety laws and standards
- Alcohol licensing frameworks
- Workplace safety protocols
- Environmental protection compliance
- Case study: Regulatory compliance in EU breweries

Module 13: Innovation and Product Development

- Flavor innovation and recipe development
- Experimental distilling techniques
- Consumer-driven product design
- Small-batch production models
- Branding and marketing innovation
- Case study: Flavored beer and spirits market success

Module 14: Sensory Analysis and Evaluation

- Tasting methodologies
- Identifying off-flavors
- Aroma profiling techniques
- Consumer sensory testing
- Linking sensory data to product design
- Case study: Beer sensory evaluation research

Module 15: Business and Entrepreneurship in Brewing

- Starting a craft brewery or distillery
- Financial planning and investment models
- Supply chain management
- Marketing and distribution strategies
- Scaling up production sustainably
- Case study: Entrepreneurial success in craft distilling

Training Methodology

- Interactive classroom sessions with expert trainers
- Hands-on laboratory demonstrations and brewing practice
- Group projects and case study analysis
- Field visits to breweries and distilleries
- Simulations of real-world brewing challenges
- Continuous assessments and feedback sessions

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

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