

**BREWER/DISTILLER
(Time-Based)**

APPENDIX A

O*NET CODE: 51-9012.00

A brewer should be capable of all duties related to beer making, including sourcing ingredients, recipe formulation, sanitation, wort production, fermentation, filtration, packaging, equipment maintenance, and quality control, record keeping, as well as staff supervision and regulatory compliance.

A distiller should be capable of all aspects of production, including mashing, fermentation, distilling spirits, sanitation, record keeping, as well as barreling, blending, bottling, labeling and packaging the spirits.

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

Approximate Hours

A. Safety and Workplace Orientation 150

1. Follow employer-specific safety procedures around power supply, machines, equipment, tools, and manufacturing processes.
2. Recognize and minimize potential workspace hazards.
3. Maintain clean work areas.
4. Learn brewing/distilling terminology, including names of products, processes, raw materials, etc.
5. Develop an understanding of regulatory environment, with particular attention to the United States Food and Drug Administration (FDA) Food Code and the Food Safety Modernization Act (FSMA), where appropriate.
6. Learn and utilize current Good Manufacturing Practices (cGMPs).

B. Beer Production 720

1. Learn to read and follow recipes for appropriate beverages, such as: ales, lagers, porters, sours.
2. Continually maintain all beer production areas, including equipment, such as mill room, brewhouse, fermentation

and filtration, spent grain area, bulk grain and grain storage area.

3. Make brewing calculations, such as: calculating hops/alpha substitution, dilution to correct wort gravity and Alcohol By Volume (ABV).
4. Employ best practices for yeast management: cell counting, pitching, harvesting, handling, and dumping yeast; applies to both dry, and liquid.
5. Understand and demonstrate the basic and universal steps for brewing from start to finish:
 - a. Milling - crushing the grain.
 - b. Mashing - mixing the dry grain with water.
 - c. Lautering/Run Off - separating the solids from the liquid (wort) and transferring the wort to the kettle.
 - d. Boil - boiling the wort and any additions, like hops.
 - e. Rest/Knockout - cooling the wort and transferring it to the fermenter.
6. Clean each of the vessels in the brewhouse using Clean In Place (CIP) protocol(s).

C. Distilling (Optional*)

500

1. Learn and describe various classes/types of spirits:
 - a. classes
 - b. types
 - i. whiskey varieties
 - ii. other regional varieties (cognac, tequila, etc.)
 - c. GNS/vodka
 - d. cocktails & specialties
2. Learn and employ the mashing process:
 - a. differences between spirit mash and beer mash;
 - b. non-grain mash ("wash;" e.g., molasses).
3. Learn and employ distillation processes:
 - a. types of still;
 - b. compounds produced;
 - c. general still operation.
4. Employ standard dilution and gauging practices:
 - a. proof spirit;

- b. blend to desired proof;
 - c. monitor and track spirit between vessels.
5. Store spirit:
- a. barrel anatomy and compounds;
 - b. effects of barrel aging;
 - c. fill barrels;
 - d. diagnose and fix barrel issues;
 - e. track barrel contents and inventory.

D. Sanitation/Cellar Work 410

- 1. Learn to store parts; learn how to handle fittings when not in use.
- 2. Monitor and the beer in process (fermentation), tracking density/ph/temperature
- 3. Clean kegs and prepare dirty kegs for filling.
- 4. Maintain stainless steel to avoid corrosion (Annual Passivation)
- 5. Perform CIP of fermentation vessels and brite tanks.

E. Filtration/Transfer/Carbonation 295

After fermentation the steps and processes used to prepare beer for packaging. This may be clarification to remove solids from the beer, moving the beer between tanks, and adding CO₂.

- 1. Transfer beer between vessels.
- 2. Clarify beer by filtration or fining.
- 3. Carbonate beer.

F. Packaging 1,075

- 1. Perform all manner of packaging: beer into kegs, casks, cans, and bottles.
- 2. Package spirits (if work process "C" selected).

G. Quality Control/Promotional/Miscellaneous 160

- 1. Clean tap room draft beer lines
- 2. Take Safe Server/Cicerone training/exam.
- 3. Become familiar with and operate draft systems.
- 4. Draft Boxes/mobile beer dispense- setup/trouble shooting
- 5. Attend brewfests, and perform usual functions: marketing,

tasting, selling, etc.

6. Keep records: liquid movements, process parameters, compliance.
7. Sensory analysis. Checking taste, aroma, and appearance of product.

H. Maintenance

200

1. Schedule/inspect/repair/replace parts, keep maintenance logs.
2. Perform basic boiler, pump, mill, and packaging equipment maintenance.
3. Operate forklift.

Approximate Total Hours 3,510

***If optional work process is not selected, the hours should be devoted to further mastery of the other required work processes.**

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>

BREWER/DISTILLER
APPENDIX B
RELATED INSTRUCTION

Safety, Health, and the Workplace

1. General Workplace Safety
2. First Aid & CPR (minimum 6.5 hours) Personal Protective Equipment (PPE) Right-to-Know/Safety Data Sheets (SDS) Chemical Safety Training
3. Asbestos Awareness (if present – see Attachment to Appendix B) Lockout/Tagout (LO/TO)
4. Sexual Harassment Prevention Training – MUST comply with section 201-g of the Labor Law
5. Occupational Safety and Health Administration (OSHA) 10-Hour General Industry Training Course

Trade Theory & Skills

1. Trade Math
2. Basic Brewing/Distilling Chemistry
3. Beer Recipes
4. Spirits Recipes (if Work Process “C” selected)
5. Brewing: Processes and Components
6. Distilling: Processes and Components
7. Beer Filtration, Maturation, and Storage
8. Beer Packaging
9. Beer Quality: Quality Control; Process Control; Flavor; Microbiological Contamination Clean In Place (CIP) Protocol(s)
10. Physical Plant Cleaning
11. Physical Plant Maintenance
12. Brewhouse/Stillhouse Equipment Maintenance and Repair
13. Forklift Operation (where applicable)
14. Beverage dispense/serving
15. Sales/presentation: festivals, taproom
16. Inventory Management: Raw materials, finished goods

A Minimum of 144 hours of Related Instruction Per Year For Each Apprentice.

Appendix B topics are approved by New York State Education Department.