



## BEER PRODUCTION AND QUALITY CONTROL — BREW 1300

### A. Course Description

- **Credits:** 4.00
- **Lecture Hours/Week:** 2.00
- **Lab Hours/Week:** 2.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

Students will gain more in-depth knowledge and hands-on experience of the brewing and beer production process. The course will cover process, procedures, and best practices for each step in the brewing process.

### B. Course Effective Dates: 1/12/15 – Present

### C. Outline of Major Content Areas

As noted on course syllabus

### D. Learning Outcomes

1. Analysis of wort boiling systems.
2. Brew recipe development and related calculations.
3. Cleaning and sanitization processes and procedures.
4. Fermentation systems and vessels.
5. General packaging principles.
6. Identification and handling of main ingredients used in brewing beer.
7. Lautering theory and technology.
8. Malt systems, steep design, and kilning.
9. Maturation vessel design and selection.
10. Measurement and testing procedures.
11. Pasteurization principles.
12. Principles of wort production and brewhouse operations.
13. Properties of finished beer.
14. Quality control measures and procedures applied during the brewing process.
15. Technical ingredient calculations.
16. Types of filtration mechanism and systems.

17. Use and operation of centrifuges.
18. Variable adjustments in the brewing process including wort composition, mashing temperatures, brew size, and time.
19. Volume and density measurements and conversions.

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

**F. Learner Outcomes Assessment**

As noted on course syllabus

**G. Special Information**

None noted