

Certificate of Proficiency in Brewing Science (BREWCP)

This program is designed to provide students with a theoretical and practical introduction to brewing and fermentation. This certificate requires 15 credit hours of coursework, selected from the list below.

REQUIRED COURSES – 9 hours.

___ FDSC 45203/55203 – Brewing Science

___ BREW 45703/55703 Production design and analysis of Beer

___ Required internship, special problems, or honors research project – 3 hours course credit.

Internship: Students could participate in an approved three credit hour internship with a brewing industry partner. The internship should involve approximately 120-130 hours of work with the industry partner. The internship work can be completed in one semester or over multiple semesters with enrollment during the final semester. At the end of the final semester of the internship, students would have to present a written and oral report of the work performed and lessons learned.

Special problems or research hours: Students could complete three credit hours working on a practical research problem under the supervision of a faculty member in FDSC, BISC, CHEM, BENG or CHEG. The topic of this work should be approved for relevance to the certificate before the work begins and reviews if it changes substantially during the course of the work. Work that involves industry partners is particularly encouraged. At the end of the final semester of the work, students would have to present a written and oral report of the work performed and lessons learned. Credit hours and work done for an honors degree can satisfy this requirement, but if honors work is used, it must include at least one credit hour in three different semesters.

ELECTIVE COURSES – 6 hours

Select at least two courses from the list below. To broaden the student's exposure to the skills needed in brewing and fermentation, for currently enrolled undergraduate students, *at least one of these courses must be in a different department from the department of the student's major, and that course must also be outside of those already required for the student's major(s)*. If the student already holds a degree, the course must be a new one outside of the previous degree program.

Courses to choose from:

___ BIOL 20003 General Microbiology *OR* BIOL 40403 Prokaryote Biology

___ BIOL 25473 Cell Biology *OR* BIOL 23373 General Genetics

___ CHEM 26103 Organic Physiological Chemistry *OR* CHEM 36203 Organic Chemistry II

___ CHEM 22673. Analytical Chemistry Lecture

___ FDSC 27401 - Brewing Brilliance: Exploring the General Science of Fermented Beverages (Beer, Wine, and Spirits)

___ FDSC 24001 Uncorked: Vines to Wines

___ FDSC 31003 Principles of Food Processing

___ FDSC 25203 Sanitation and Safety in Food Processing Operations

___ FDSC 41202 Food Microbiology

___ FDSC 44103 Sensory Evaluation of Food

___ CHEG 21303 Fluid Mechanics

___ CHEG 31404 Heat and Mass Transfer

___ BENG 31103 Measurement and Control for Biological Systems

___ BENG 37303 Transport Phenomena in Biological Systems