

**BREW 122 Course Outline as of Fall 2016****CATALOG INFORMATION**

Dept and Nbr: BREW 122 Title: APPLIED FERMENTATION SCI

Full Title: Applied Fermentation Science

Last Reviewed: 5/23/2016

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	8	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

Operation of pilot scale and commercial brewhouse to produce various beer styles from lager to stout to barley wine. Brewing will be preceded by a short lecture on each beer style.

**Prerequisites/Corequisites:**

Course Completion of BREW 100 and BREW 112;  
AND Concurrent Enrollment in BREW 120

**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

Must be age 18 or older

**Schedule of Classes Information:**

Description: Operation of pilot scale and commercial brewhouse to produce various beer styles from lager to stout to barley wine. Brewing will be preceded by a short lecture on each beer style. (Grade or P/NP)

Prerequisites/Corequisites: Course Completion of BREW 100 and BREW 112;  
AND Concurrent Enrollment in BREW 120

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment: Must be age 18 or older

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Students will be able to:

Apply knowledge of brewery systems and equipment to produce beer on a commercial scale.

### **Objectives:**

Upon completion of this course, students will be able to:

1. Identify different beer styles and their ingredients.
2. Operate both pilot and commercial scale brewhouses.

### **Topics and Scope:**

#### **I. Brewing styles**

- A. Lager
- B. Pilsner
- C. Wheat beer
- D. Lambic
- E. Fruit beer
- F. Saison
- G. Belgian ale
- H. American pale ale
  - I. English pale ale
- J. IPA
- K. Bitter
- L. Scottish ale
- M. Porter
- N. Stout
- O. Barley wine

#### **II. Brewing techniques for each style**

## Assignment:

1. Reading in required text, 20 - 40 pages per week
2. Create a manual of standard operation procedures for operating a small brewhouse
3. Create a poster organizing different beers by flavor
4. Lab Activities:
  - a. Problem solving simulation exercises
  - b. Demonstrate brewing of different styles of beer
  - c. Group evaluation of product
7. Midterm and final exam

## Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Manual of standard operation procedures;

Writing  
10 - 20%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Simulation exercises

Problem solving  
20 - 40%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Brewing and evaluation

Skill Demonstrations  
20 - 40%

**Exams:** All forms of formal testing, other than skill performance exams.

Midterm and final exam: multiple choice, true and false, completion

Exams  
20 - 40%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Poster

Other Category  
5 - 10%

## Representative Textbooks and Materials:

Designing Great Beers: The Ultimate Guide to Brewing Classic Beer Styles, by Ray Daniels 1st edition (1998) Classic

Instructor prepared materials