

ORIGINATOR'S SECTION:

1. College: CHABSS CoBA CoEHHS CSM
 Desired Term and Year of Implementation (e.g., Fall 2008):
 Fall 2018

2. Course is to be considered for G.E.? (If yes, also fill out appropriate GE form*) Yes No

3. Course will be a variable-topics (generic) course? Yes No
 ("generic" is a placeholder for topics)

4. Course abbreviation and Number:* ENGB 501

5. Title: (Titles using jargon, slang, copyrighted names, trade names, or any non-essential punctuation may not be used.)
Brewing Science II

6. Abbreviated Title for PeopleSoft:
 (no more than 25 characters, including spaces)
 Brewing Science II

7. Number of Units: 3

8. Catalog Description: (Not to exceed 80 words; language should conform to catalog copy. Please consult the catalog for models of style and format; include all necessary information regarding consent for enrollment, pre- and/or corequisites, repeated enrollment, crosslisting, as detailed below. Such information does not count toward the 80-word limit.)

 Second course in a two-part series on the brewing process from fermentation to final production. Presents a comprehensive study of the microbiology of beverage production, including microbial growth, fermentation processes and procedures, beverage finishing in addition to food safety and scientific hazard analysis. *Three hours of lecture. Prerequisite: ENGB 500.*

9. Why is this course being proposed?

 This course is one of the core courses of the Brewing Science Certificate of the Engineering™ Certificate program.

10. Mode of Instruction*
 For definitions of the Course Classification Numbers:
http://www.csusm.edu/academic_programs/curriculumsheduling/catalogcurricula/DOCUMENTS/Curricular_Forms_Tab/Instructional%20Mode%20Conventions.pdf

Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)
Lecture	3	C2
Activity		
Lab		

11. Grading Method:*
 Normal (N) (Allows Letter Grade +/-, and Credit/No Credit)
 Normal Plus Report-in-Progress (NP) (Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress)
 Credit/No Credit Only (C)
 Credit/No Credit or Report-in-Progress Only (CP)

12. If the (NP) or (CP) grading system was selected, please explain the need for this grade option.

13. Course Requires Consent for Enrollment? Yes No

 Faculty Credential Analyst Dean Program/Department - Director/Chair

14. Course Can be Taken for Credit More than Once? Yes No
 If yes, how many times? (including first offering)

15. Is Course Crosslisted: Yes No

 If yes, indicate which course _____ and check "yes" in item #22 below.

16. Prerequisite(s): Yes No ENGB 500

17. Corequisite(s): Yes No

18. Documentation attached:
 Syllabus Detailed Course Outline

* If Originator is uncertain of this entry, please consult with Program/Department Director/Chair

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19. If this course has been offered as a topic, please enter topic abbreviation, number, and suffix:* Not offered as a topic course.

20. How often will this course be offered once established? Once per year.

PROGRAM DIRECTOR/CHAIR - COLLEGE CURRICULUM COMMITTEE SECTION:
(Mandatory information – all items in this section must be completed.)

21. Does this course fulfill a requirement for any major (i.e., core course or elective for a major, majors in other departments, minors in other departments)? Yes No

If yes, please specify:

22. Does this course impact other discipline(s)? *(If there is any uncertainty as to whether a particular discipline is affected, check "yes" and obtain signature.)* Yes No

If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.

Biological Sciences
 Discipline


 Signature

4/17/17
 Date

Support Oppose



Discipline

Signature

Date

Support Oppose

SIGNATURES : (COLLEGE LEVEL) :

- 1. James Jancovich 2/1/17
 Originator (please print or type name) Date
-  2/3/17
 Date
- 2. Bill Gust 10/27/17
 Program Director/Chair Date
- 3.  10/21/17
 College Curriculum Committee Date
- 4.
 College Dean (or Designee) Date

(UNIVERSITY LEVEL)

- 5.
 UCC Committee Chair Date
- 6.
 Vice President for Academic Affairs (or Designee) Date
- 7.
 President (or Designee) Date

* If Originator is uncertain of this entry, please consult with Program/Department Director/Chair.

ENGB 501: Brewing Science II

CSUSM Fall 2018 (3 units)

Instructor: tbd

Office: tbd
Phone: tbd
Email: tbd
Office Hours: day/time tbd
or by appointment

Lectures: location tbd
day/time tbd

Course Description

Second course in a two-part series on the brewing process from fermentation to final production. Presents a comprehensive study of the microbiology of beverage production, including microbial growth, fermentation processes and procedures, beverage finishing in addition to food safety and scientific hazard analysis. *Three hours of lecture. Prerequisite: ENGB 500.*

The specific Course Learning Outcomes for ENGB 501 are that upon completion of this course, a successful student should be able to:

- understand basic concepts of microbiology, microbial growth and sanitation.
- know the defining characteristics of fermentation and the metabolic properties of microorganisms used in the brewing industry.
- understand details of beverage production, including finishing, carbonation and stabilization, and quality control and safety analysis.
- develop critical thinking and analytical skills including collecting, analyzing, and presenting data and drawing appropriate conclusions based on the results.
- develop the ability to work collaboratively and improve communications skills through class presentations and group exercises.

Reading Materials:

- Ockert, Karl. "Raw Materials and Brewhouse Operations. Vol. 1 of MBAA Practical Handbook for the Specialty Brewer." Published by Master Brewers Association of America, 2006.
- White, Chris and Jamil Zainasheff . "Yeast: The Practical Guide to Beer Fermentation." Brewers Publications, 2010.
- Access to **Cougar Courses** – this will be a primary resource for course information.

Exams and Grading:

Lecture: Two hourly exams (100 points each) will be given during the semester (see Lecture Schedule) along with a *comprehensive* final exam (200 points). The final can count for as much as two-thirds, or as little as one-third of your final lecture exam grade. This is because your score on the final will be divided by "2" to generate two - "one hour" exam equivalents. Along with the two hourly exam grades, this will give you a *total of 4 exam scores*. The top three of these four scores will be summed to yield your lecture exam points (*maximum = 300 points*). This system

effectively allows you to “drop” an hourly exam; therefore **NO MAKEUP EXAMS WILL BE GIVEN FOR ANY REASON**. All exams may consist of multiple choice, matching, objective and critical analysis essay questions. Exams will also include any information covered in the laboratory component of the course.

In addition to lecture exams, you will be required to complete a collaborative term project (100 points). More information on this project will be distributed on Cougar Courses. However, this project will be based on designing fermented beverages, analyzing data, problem solving and beverage production.

Participation: Students are required to actively participate in lecture discussions throughout the semester.

Quizzes/Assignments: There will be a number of lecture quizzes/assignments throughout the semester. Some of these quizzes/assignments may be given without notice (i.e. “pop quiz”). In addition, some quizzes/assignments may be demonstration(s) of proper laboratory technique(s).

Grading Summary:

Exams		
Lecture exams	2 x 100 points	
Final Exam	1 x 200 points	
= 4 x 100 pt exams (drop lowest exam score)		300 points
Term Project		100 points
Quizzes/Assignments		50 points
	TOTAL	450 points

Grades will be assigned on a straight percentage:

- 100-90% = A
- 89-80% = B
- 79-70% = C
- 69-60% = D
- < 60% = F

Credit Hour Policy Statement:

For the lecture part of the class, each unit of credit corresponds to an “hour” of class-time and two hours of student learning outside of class. Therefore, just for the lecture portion of the class you should expect to spend 3 hours a week in class and 6 additional hours outside of class.

All-University Writing Requirement:

This will be satisfied in the lecture component of the course in exams, writing assignments and the term project.

Academic Honesty and Integrity:

Students are responsible for honest completion and representation of their work. *There will be **NO tolerance** for infractions.* The instructor reserves the right to discipline any student for academic dishonesty, in accordance with the general rules and regulations of the University. Disciplinary action may include the lowering of grades or the assignment of a failing grade for an

exam, assignment, or the class as a whole. Incidents of academic dishonesty will also be reported to the Dean of Students for sanctions at the University level.

It is recommended that students review the full Academic Honesty Policy at http://www.csusm.edu/policies/active/documents/Academic_Honesty_Policy.html.

Disabled Students:

Students with disabilities who require reasonable accommodations must be approved for services by providing appropriate and recent documentation to the Office of Disabled Student Services (DSS). This office is located in Craven Hall 4300, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with me during my office hours in order to ensure confidentiality.

Tentative Lecture Schedule*

Week #	Topics
1	Course Introduction Overview of Beverage Fermentation and Finishing
2	Microbiology of Food and Water
3	Cultivating Microorganisms
4	Sterile Techniques and Sanitation
5	Exam I
6	Introduction to Fermentation and Microbial Metabolism
7	Biochemistry of Fermentation
8	Fermentation Kinetics
9	Large-scale Fermentation and Beverage Production
10	Exam II
11	Beverage Maturation and Finishing
12	Introduction to Food-borne Disease
13	Term Project Presentations
14	Food Safety

15	Hazard Analysis of Food and Beverage Products
16	FINAL EXAM

*NOTE: Any changes to the course schedule will be announced in lecture/lab and/or posted on Cougar Courses.