

ORIGINATOR'S SECTION:														
1. College: <input type="checkbox"/> CHABSS <input type="checkbox"/> CoBA <input type="checkbox"/> CoEHHS <input checked="" type="checkbox"/> CSM	Desired Term and Year of Implementation (e.g., Fall 2008): Fall 2017													
2. Course is to be considered for G.E.? (If yes, also fill out appropriate GE form*) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No														
3. Course will be a variable-topics (generic) course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ("generic" is a placeholder for topics)														
4. Course abbreviation and Number:* ENGB 350														
5. Title: (Titles using jargon, slang, copyrighted names, trade names, or any non-essential punctuation may not be used.) <u>Process EngiBeerTM I</u>														
6. Abbreviated Title for PeopleSoft: (no more than 25 characters, including spaces) Process Engb I														
7. Number of Units: <u>3</u>														
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 <u>not</u> count toward the 80-word limit.) This course is the first in a two-course sequence designed to familiarize students with large-scale/commercial brewing production, including equipment and techniques. Topics covered include brewery design and layout, equipment acquisition and use, ingredients, creating and adjusting recipes, along with basic sanitation, brewery safety and legal requirements. Curriculum includes creative projects and real world advice from experienced brew-masters. Students enrolling in this course should have prior knowledge of beer-making and the brewing process. <i>Pre-requisite: ENGB 300, 301 or substantial brewing experience with consent of instructor</i>														
9. Why is this course being proposed? Course is being proposed as part of EngiBeer TM certificate program through extended learning.														
10. Mode of Instruction* <i>For definitions of the Course Classification Numbers:</i> http://www.csusm.edu/academic_programs/curriculum/scheduling/catalogcurricula/DOCUMENTS/Curricular_Forms_Tab/Instructional%20Mode%20Conventions.pdf														
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Type of Instruction</th> <th style="text-align: center;">Number of Credit Units</th> <th style="text-align: left;">Instructional Mode (Course Classification Number)</th> </tr> </thead> <tbody> <tr> <td>Lecture</td> <td style="text-align: center;">3</td> <td>C-02</td> </tr> <tr> <td>Activity</td> <td></td> <td></td> </tr> <tr> <td>Lab</td> <td></td> <td></td> </tr> </tbody> </table>	Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)	Lecture	3	C-02	Activity			Lab			
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Lecture	3	C-02												
Activity														
Lab														
11. Grading Method:* <input checked="" type="checkbox"/> Normal (N) (Allows Letter Grade +/-, and Credit/No Credit) <input type="checkbox"/> Normal Plus Report-in-Progress (NP) (Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress) <input type="checkbox"/> Credit/No Credit Only (C) <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Faculty <input type="checkbox"/> Credential Analyst <input type="checkbox"/> Dean <input type="checkbox"/> Program/Department - Director/Chair														
14. Course Can be Taken for Credit More than Once? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, how many times? (including first offering)														

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

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BY: _____

Tracker _____

RP _____

PS _____

15. Is Course Crosslisted: Yes No
 If yes, indicate which course _____ and check "yes" in item #22 below.

16. Prerequisite(s): Yes No **ENGB 300, ENGB 301**

17. Corequisite(s): Yes No

18. Documentation attached: Syllabus Detailed Course Outline

19. If this course has been offered as a topic, please enter topic abbreviation, number, and suffix:*

20. How often will this course be offered once established? * As part of Engineering™ program through Extended Learning.


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:
 Required course in the Basic EngiBeering™ Certificate

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

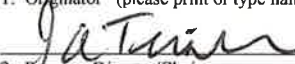


If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.

Physics Discipline  10/17/17 Support Oppose
 Signature Date

Discipline _____ _____ Support Oppose
 Signature Date

SIGNATURES : (COLLEGE LEVEL) :

(UNIVERSITY LEVEL)

- 1. Originator (please print or type name) Charles De Leone 2/3/17
Date
- 2. Program Director/Chair  10/23/17
Date
- 3. College Curriculum Committee  10/27/17
Date
- 4. College Dean (or Designee)  10/31/17
Date

- 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 350 – Process EngiBeering™ I

PROSPECTIVE COURSE OUTLINE

Instructor TBD

Email TBD

Office TBD

Best contact number TBD

Text: Practical Handbook for Specialty Brewer: Volumes 1-3 (v.1 Raw Materials and Brewhouse Operations), (v.2 Fermentation Cellaring, and Packaging Operations), (v.3 Brewing Engineering and Plant Operations), Edited by Ockert, Karl.

Course Description: This course is the first in a two-course sequence designed to familiarize students with large-scale/commercial brewing production, including equipment and techniques. Topics covered include brewery design and layout, equipment acquisition and use, ingredients, creating and adjusting recipes, along with basic sanitation, brewery safety and legal requirements. Curriculum includes creative projects and real world advice from experienced brew-masters. Students enrolling in this course should have prior knowledge of beer-making and the brewing process.

Students will learn about laying out a brewery, acquiring equipment and ingredients, proper use of equipment, and creating and adjusting recipes. The course is designed to act as a jump-start for making the transition into commercial brewing. A mix of sections from the MBAA Practical Handbooks, real world advice and creative projects will combine to express to students that brewing is not just a science, but also an art. Brewery safety, equipment and ingredient knowledge will be the backbone to learning about a profession where ingenuity and craftsmanship stand at the forefront. The legal, safety, and financial requirements of operating a brewery will be touched on to help students decide if they are interested in joining an established brewery or starting their own.

Student Learning Outcomes:

1. Upon successful completion of the course, students will be able to:
2. Understand the steps involved in brewing a batch of beer on commercial equipment.
3. Be able to adjust/scale beer recipes to make alcohol (ABV), bitterness (IBU), color (SRM), carbonation (volumes), etc. fall within certain parameters based on the possible efficiency of large scale equipment.
4. Be able to create large-scale beer recipes along with understanding basic recipe formulation software.
5. Understand basic brewery sanitation.
6. Have an understanding of the legal steps required for starting a brewery along with basic brewery safety.
7. Be able to give equipment size/quantity recommendations based on a brewery's production estimates.

8. Understand the various raw materials required to create beer including malt, hops, yeast, water and so on, as well as where and how to acquire necessary quantities.
9. Be able to create their own brewery layout.

Prerequisite: ENGB 300, ENGB 301 (or consent of instructor for those with substantial brewing experience)

Course Activities: Homework will include the reading of specified chapters in the MBAA Practical Handbooks.

Quizzes: There will be 11 quizzes. One after reading each assigned chapter in the MBAA Practical Handbooks.

Tests: There will be a mid term to cover Student Learning Outcomes #7 and #1 followed by an end of the year exam covering #2, #4 and #6. Both exams will be worth an equal number of points.

Final Project: Project will be designed to engage the students' creativity while working within real-world constraints. Examples of project include assigning students a budget and a list of brewery equipment and other necessities. Students would then be required to design a brewery layout showing the equipment, tasting room, restrooms, cooler etc. locations. Finally they will draw up a menu showing an assigned number of beer styles, their own beer names, ABV, SRM, IBU stats and beer descriptions. The final project would then be presented to the class. Calibrated peer-review of the project and presentation would be considered as part of the final project grade. Grading rubric would include items from all topics discussed in the course.

Project Term Paper: This assignment fulfills the All-University Writing Requirement. Students will write a seven to ten page paper describing the commercial brewing process from start to finish. From milling the grain and mashing in through bottling and kegging the finished product. One-classroom session will be dedicated to supporting the writing process.

Grading Scheme: 100 points total

	# of Items	Pts. Per Item	Total Points
Homework Quizzes	11*	2.5	25
Project Term Paper	1	25	25
Midterm Exam	1	20	20
Final Exam	1	20	20
End of Class Project	1	10	10

*Note that the lowest quiz grade will be dropped.

Letter grades will be determined based on total points, and be assigned as follows:

- A – 90-100
- B – 80-90
- C – 70-80
- D – 60-70
- F – less than 60

Anticipated schedule:

<u>Lectures</u>	<u>Topics</u>	<u>Readings</u>
Week 1	Introduction, Water	Vol. 1 Ch. 1
Week 2	Malting, Specialty	Vol. 1 Ch. 2 and 3
Week 3	Hops	Vol.1 Ch. 4
Week 4	Adjuncts	Vol.1 Ch. 5
Week 5	Brewhouse Operations	Vol.1 Ch. 6
Week 6	Fermentation	Vol. 2 half Ch. 1
Week 7	Fermentation (cont.)	Vol. 2 half Ch. 1
Week 8	Finishing, Midterm	Vol. 2 Ch. 2
Week 9	Racking	Vol. 2 Ch. 3
Week 10	Equipment	Vol. 3 Ch. 1

Week 11	Sanitation	Vol. 3 Ch. 2
Week 12	Brewery Safety and Legal Requirements	
Week 13	Review	
Week 14	Project Term Paper	
Week 15	Final Exam	
Week 16	End of Class Project	