CH E 395V – Brewing Science and Society
Course syllabus
Spring term, 2015
Version 1.0; Revised 01/08/2015

Note: some items in this syllabus are subject to change. You will be notified of these changes if and when they are necessary.

Instructor: Stephen Taylor
Contact information
E-mail: sptaylor@nmsu.edu
or leave a note in the Chemical & Materials Engineering Office in Jett Hall
Office hours: By appointment

Meeting times
Lecture: Tuesdays and Thursdays, 1:10PM – 2:25PM, Jett Hall 283.
This course of study runs from Thursday, January 15, through Thursday, May 07. There will be no class during the week of Spring Break, March 23–27.

Course description
The course constitutes an overview of the science of brewing and the historical interrelationships between society, technology, business, and the evolution of the current beer market. Topics covered in this course will include the history of brewing and the interrelationships between societal attitudes, technology, and cultural preferences in beer; beer styles and evaluation techniques; production and characteristics of ingredients used in brewing; brewing unit operations; biochemistry of malting, mashing, and fermentation; engineering in the brewery; home brewing; and societal and health issues related to beer and alcohol. Students must be at least 21 years of age by the first day of instruction of the semester to enroll in this course.

Prerequisites
Eligibility to take upper division courses. Students must be at least 21 years of age by the first day of instruction of the semester to enroll in this course.
Course objectives

The objective of this course is to provide the undergraduate student with a broad perspective of beer and the brewing industry as well as technical knowledge about the brewing process.

Required text

None

Course outline

Because each class is different and therefore moves at its own pace, a rigid schedule is difficult to construct. The following topics are covered in this course:

• History of brewing and the interrelationships between societal attitudes, technology, and cultural preferences in beer;
• Beer styles and evaluation techniques;
• Ingredients used in brewing;
• Brewing unit operations technology;
• Brewing unit operations science;
• Engineering in the brewery;
• Home brewing; and
• Societal and health issues related to beer and alcohol.

Grading

Grades will be based on total points accumulated compared to the total possible points, subject to a “curve” by the instructor. The distribution of points will be:

- Beer styles quizzes 10%
- Beer tasting exercise 20%
- Brewery tour review 10%
- Home brew project 20%
- Midterm examination 15%
- Final examination 25%
Grading (continued)

Letter grades will be assigned according to the following scale

- Percentage of total points < 60%  F
- 60% ≤ %age < 70%  D
- 70% ≤ %age < 80%  C
- 80% ≤ %age < 90%  B
- %age ≥ 90%  A

Quizzes

You will need to know the characteristics of the beer styles detailed on BJCP Style Guidelines, [http://www.bjcp.org/2008styles/cattedx.php](http://www.bjcp.org/2008styles/cattedx.php) and relevant pages contained therein.

Tasting exercise - 33 Beers

This project goes hand in hand with mastering the beer styles listed in the BJCP guidelines. One goal of this project is to expand and challenge your palate, by sampling beers from a wide geographic range. Another goal is to have you attempt to try at least one example of the major styles of beer mentioned in the BJCP guidelines, so that you can have a concrete reference. Further, since you will be evaluating each beer, this will serve as a writing assignment. You will evaluate them with respect to taste, appearance, etc. A report will be used to summarize the results of this tasting and assist the student in identifying the types of beers and their characteristics. This assignment will be due no later than Tuesday, March 31.

Brewery tour review

Sometime during the semester, near the beginning, I will try to arrange a class tour of High Desert Brewery, here in Las Cruces. It will be incumbent upon each student to take an additional tour of another brewery, and then to summarize and compare the brewery operations in a 1-2 page report. This project will be due no later than the Thursday, April 2.

Home brewing

Students, working in groups no larger than two persons, will be produce a drinkable home brewed beer and the grade will be based on peer evaluation by tasting. You can write a report documenting the process used as well as the quality of the product for a small additional amount of credit. Sufficient time will be provided so that multiple attempts may be made to produce a quality product. The evaluation will be conducted on Thursday, April 30.
Midterm examination

There will be a midterm examination administered near the middle of the semester, on a date to be announced at least three class days in advance. The examination will consist of a combination of various styles of questions and/or problems, and will, of necessity, cover material already tested on quizzes. Ideally, this exam will occur close to, but before the drop deadline on Monday, March 16. Exam make-ups are allowed only in unusual circumstances. You must contact me to be allowed to make-up the exam and it must be made up before the next class period.

Final examination

The final examination will be similar to the midterm examination, but will be directly comprehensive, and as a result, longer and more difficult. It will be administered during the week of May 4.

Course policies

There are a number of specific course policies, relating to university and/or department rules and regulations (e.g. attendance, student disabilities, student conduct) covered by the Chemical & Materials Engineering Department’s Syllabus Addendum, available for viewing at http://chme.nmsu.edu/academics/syllabi/chme-common-syllabus-addendum/

Withdrawal policy

If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by Monday, March 16, to receive a “W” (Withdrawal). Failure to do so will result in your receiving a performance grade, whatever that might be. The final day to withdraw from the university is Friday, April 17.

Smell is the most powerful trigger to the memory there is. Certain flowers, a whiff of smoke can bring up experiences long forgotten. Books smell, musty and rich. Knowledge gained from a computer is ... it has no texture, no context. It's there and then it's gone. If it's to last, the getting of knowledge should be tangible, it should be ... smelly.”
–Rupert Giles, Buffy the Vampire Slayer, “I Robot – You Jane”