BREW 100 Fundamentals of Fermentation Science
Fall 2018 Schedule

Date	Topic
Aug. 21	Introduction. History of Fermentation. Basics of Brewing Process
Aug. 28	Water- History and current practices; composition and influence on beer style
Sept. 4	**No Class- Professional Development Day**
Sept. 11	Carbohydrates: the body of beer
Sept. 18	Quiz. Yeast and Bacteria; Fermentation
Sept. 25	Field Trip: Moonlight Brewing
Oct. 2	Hops: the heart of beer
Oct. 9	Quiz. Midterm Review
Oct. 16	**Midterm**
Oct. 23	Guest Speaker-Doug Muhleman: Lager Brewing
Oct. 30	Hops: sensory hands on and introduction to sensory science/statistics
Nov. 6	Quiz. Wort Production
Nov. 13	Fermentation and Maturation; Finishing-clarification, filtration, and carbonation
Nov. 20	Guest Speaker-Charles Bamforth: the Pope of Foam.
Nov. 27	Recipe Development
Dec. 4	Quiz. Packaging: Bottling, Canning and Kegging
Dec. 11	Student Presentations and Review
Dec. 18	Final exam: **6:00-9:00PM**

This syllabus is a living document and subject to change at any time (except tests). All changes will be communicated via email, Canvas and in class.

BREW 100 Fundamentals of Fermentation Science

Instructor: Bryan Donaldson, email: bdonaldson@santarosa.edu
Office hours: Half Hour before class and/or by appt: Lecture room (or other as needed)
Meeting times: Tuesday **6:00-9:00PM**

Text:
Required-Practical Handbook for the Specialty Brewer, Volumes 1-3 (MBAA)
Suggested-Water: A Comprehensive Guide for Brewers (Brewing Elements), by John Palmer and Colin Kaminski 1st Edition (2013)

Grading: Presentation/Report – 20%
Participation/quizzes – 30%
Exam/Final – 50%

Course outline: To see the official course outline for this or other classes, follow the following link and enter the course name and number:
https://portal.santarosa.edu/SRweb/SR_CourseOutlines.aspx

Outcomes and Objectives
Upon completion of this course, the student will be able to:

1. Describe the raw materials used in brewing and their sources
2. Describe the impact of brewing water composition on final product
3. Demonstrate the impact of various ingredients on finished beer through creation of beer recipes
4. Identify different microbes encountered in beer production and their influence on the finished product
5. Describe the biochemical pathways of fermentation and environmental impact
6. Identify different carbohydrate sources and how to use them to achieve the desired finished product
7. Describe the cultivation and processing of hops and how they influence beer
8. Describe the stages of the brewing process
9. Create beer recipes to show knowledge of ingredients and process
10. Troubleshoot problems in brewing, fermentation, finishing and packaging

Student Presentation and Report
Students will research a creative new ingredient or procedure being used in the brewing industry. Report should cover genesis of the ingredient or procedure, how it is used, and what the effect on the final product is. Report will be 5-10 pages. Each student will also present a 5 minutes talk to the class on their ingredient or procedure.

Student conduct
All students must abide by the code of conduct (see link):
http://www.santarosa.edu/for_students/rules-regulations/scs/section1.shtml