

Course Title: Beer Quality and Analysis Series: Microbiology and Beer Analysis | Quality Assurance | Brewery and Hop Farm Tour

Term Offered: CEUs:

Instructors name: Scott Lafontaine; Tom Shellhammer; Jeff Clawson Instructors email: scott.lafontaine@oregonstate.edu

Instructors bio:

Scott Lafontaine

Scott is a graduate research assistant at Oregon State University and a member of Dr. Thomas Shellhammer's laboratory. Scott received his Master of Science in Chemistry at Oregon State University in 2015, and his Master of Science in Biotechnology in 2012. Scott is a member if the American Society of Brewing Chemists and a member of the Master Brewers Association if Americas.

Tom Shellhammer

Tom is the Nor'Wester Professor of Fermentation Science in the Department of Food Science and Technology at Oregon State University, where he directs the brewing education component of the fermentation science program and teaches courses about brewing science and technology, beer and raw materials analyses, plus the history, business, and technology of the wine, beer, and spirits industries. In addition to his research, Dr. Shellhammer is a sought-after educator of beer brewing science classes and was a featured expert in the 2011 Discovery Channel documentary "How Beer Saved the World."

Jeff Clawson

Jeff is the Pilot Brewery and Food Processing Plant Manager in the Department of Food Science and Technology at Oregon State University. As part of the undergraduate Brewing Science program, he assists in the Brewing Analysis course. Additionally, he oversees the pilot brewing activities involved in all brewing research projects conducted at OSU. He has been executing descriptive/analytical and consumer sensory panels for beer since 1993 and educating students and the use of sensory science in the brewery for 17 years.

Course Description

In this course series, you will learn microbiological, chemical, and physical analyses for assessing beer quality. Quality systems help you as the brewer or technician to make proper, consistent beer that meets you consumer's expectations – every time. This class has been designed using data from a survey of your peers – brewers and quality managers at successful U.S. breweries both big and small. We requested their input regarding analytical methods they feel are important to monitoring process quality. The techniques we will be teaching you feature the top methods from that list, and they are a great start to

quality program regardless of the size of your brewing operation. Furthermore, they are methods that are recognized by the American Society of Brewing Chemists (ASBC), and as a benefit of enrolling in this course you will have access to all of the ASBC methods.

The materials presented in the online modules will provide you with stepwise and video guides to perform each quality method. The principles and rationale behind for each method will be discussed in the context of beer quality. When you come to Corvallis, we will work through the content from online modules in a laboratory format and you will get practical, hands-on experience using and operating analytical equipment and methods from the OSU staff and various industry professionals such as Jeff Edgerton, Brewmaster – Bridgeport Brewing Co., Dr. Linda Bruslind, Senior Instructor II – Oregon State University, and Shawn Theriot, Quality Assurance Manager – Deschutes Brewing Co. These folks provide perspectives on quality measurements as they come from technical and commercial operations.

Prerequisites

None.

Course Sequencing None.

Communication

Please post all course-related questions in the Help discussion thread so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. I will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Course Mode

This is an instructor-led course. It is not self-paced. It is important that you firmly grasp the concepts from each week before moving on to the next week's assignments. There is also a five day On-site portion of this course in Corvallis, Oregon.

Canvas

This course will be delivered via Canvas where you will access the syllabus, learning materials, tutorials, discuss issues and/or display your projects. If you are having problems accessing Canvas <u>check your computer compatibility</u>.

Technology Support

If you experience difficulties, errors, or problems in Canvas, please click the Help button located at the bottom of the left sidebar within your Canvas course. Tier 1 technical support is available to you 24 hours a day, 7 days a week.

If you have difficulties accessing your course in Canvas, please contact PACE at (541)737-4197 or email <u>pace@oregonstate.edu</u>. We are available Monday through Friday from 8 a.m. until 5 p.m. Pacific time.

Learning Resources

Learning material will be provided on Canvas.

Measurable Learning Outcomes

After successful completion of this course, participants will be able to:

- Make quality measurements that can benefit their brewing enterprice
- Make informed decisions relating to process quality

Evaluation and Grading

All PACE courses are evaluated with the grade option of A-F. Students do have an option to take the course with a Pass/No Pass grading option. The student must request this change through the course instructor. Changes in the grading option must be made prior to the course end date.

Evaluation Scale

Your grade will be based on the following scale:

A = 93-100%	A- = 90-92%	B+ = 87-89%	B = 83-86%	B- = 80-82%	C+ = 77-79%
C = 73-76%	C- = 70-72%	D+ = 67-69%	D = 63-66%	D- = 60-62%	F = < 60%

This course has an option of Pass/ No Pass

Course Outline

Module	Торіс	Learning Activities	Assessments
1	Beer and Wort	Readings	Practice Problems 1
	Fundamentals	Narrated Lectures 1.1 – 1.3	Quiz 1
2	Packaged Beer Analysis	Readings	Practice Problems 2
		Narrated Lectures 2.1 – 2.4	Quiz 2
3	Introduction to	Readings	Practice Problems 3
	Microbiology	Narrated Lectures 3.1 – 3.6	Quiz 3
4	Microbiology for the	Readings	Practice Problems 4
	Brewer	Narrated Lectures 4.1 – 4.3	Quiz 4
1-4			Final Exam
7	Corvallis - Onsite	Laboratory Experience	
	Portion		

Statement Regarding Students with Disabilities

PACE seeks to accommodate the diverse experiences and learning styles of the students. Accessibility accommodations are collaborative efforts between learners and PACE. If you require accommodations please email <u>pace@oregonstate.edu</u>.

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the <u>Student</u> <u>Conduct Code</u>. In an academic community, student, faculty, and staff each have responsibility for maintaining an appropriate learning environment, whether online or in the classroom. Students, faculty, and staff have the responsibility to treat each other with understanding, dignity and respect. Disruption of teaching, administration, research, and other institutional activities is prohibited by Oregon Administrative Rule 576-015-0015 (1) and (2) and is subject to sanctions under university policies, OSU Office of Student Conduct.

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty, defined as: An intentional act of deception in which a student seeks to claim credit for the work or effort of another person or uses unauthorized materials or fabricated information in any academic work.

Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in a civil manner. Students will be expected to treat all others with the same respect, as they would want afforded themselves. Disrespectful behavior to others (such as harassing behavior, personal insults, inappropriate language) or disruptive behaviors in the course (such as persistent and unreasonable demands for time and attention both in and out of the classroom) is unacceptable.

Netiquette

In an online classroom, your primary means of communication is written. The written language has many advantages: more opportunity for reasoned thought, more ability to go in-depth, and more time to think through an issue before posting a comment. However, written communication also has its disadvantages. This includes a lack of the face-to-face signaling that occurs through body language, intonation, pausing, facial expressions and gestures. As a result, please recognize the possibility of miscommunication and compose your comments in a clear, positive, supportive, and constructive manner. Please be sure to be professional by demonstrating tolerance for diverse points of view and give each other the benefit of the doubt about any unclear intended meanings.

Evaluation

Course evaluation results are extremely important and are used to help improve this course and the learning experience of future students.

If you have feedback for improving the course, either during this session or for subsequent sessions, we would like to know. To provide direct feedback, please email pace@oregonstate.edu.

This syllabus is subject to change prior to the course start date.