



**Oregon State University**  
Professional and  
Continuing Education

# **CIDER MAKING: CRAFT CIDER ESSENTIALS**

## **Summer 2024**

**Instructor name:** Dr. Elizabeth Tomasino

**Instructor email:** [elizabeth.tomasino@oregonstate.edu](mailto:elizabeth.tomasino@oregonstate.edu)

### **Instructor bio**

Dr. Elizabeth Tomasino is an Associate Professor of Enology at Oregon State University. She has had the opportunity to study the wine industry worldwide, including in Europe and New Zealand. Her research interests lie in wine sensory analysis and flavor chemistry, determining relationships between sensory and chemical data, particularly those aroma compounds important for wine quality and regional differentiation.

### **Course Description**

Spend five days learning the fundamental techniques of cider making in Oregon State University's fermentation labs in the Corvallis. Oregon State is one of only a few U.S. institutions offering this sort of training, and our graduates are in great demand.

In addition to intense lab training, you will also visit a local cidery and orchard, provided there is time. The Willamette Valley is home to many excellent cideries and has a strong culture of innovation in this area. Visiting the area will allow you to tap into this culture and benefit from this first-hand knowledge.

The course involves hands-on, practical lab work, lectures and cider tasting, covering:

- Processing techniques from apple to bottle
- An essential grounding in the chemistry and microbiology of cider
- Training in lab analytical methods for sugar, acid and nitrogen content Cleaning and sanitizing
- Sensory analysis of hard cider

***This course is held fully onsite and runs Monday, August 19 through Friday, August 23, 2024 in Corvallis, Oregon.***

### **Prerequisites**

No prerequisites.

### **Course Schedule**

#### **Monday**

8:30	Enrollment and Welcome – Introductions
9:00	Intro to Cider – Dr. Elizabeth Tomasino, OSU <ul style="list-style-type: none"><li>▪ <i>Overview of cider and cider apples</i></li></ul>
9:30	Raw Materials and Background to the Cider Industry – Dr. Nik Wiman, Orchard Crops Specialist, OSU Extension <ul style="list-style-type: none"><li>▪ <i>Apple orcharding, characteristics of cider apples, growing, economics, basics of cider, definitions, terminology</i></li></ul>
11:00	Break



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11:15	Chemistry of Cider – Dr. Elizabeth Tomasino, OSU
12:30-2:00	Lunch
2:00	Group exercise: Choosing apples
2:30	Sanitation – Dr. Elizabeth Tomasino, OSU
3:30-5:00	Break
5:00-8:00	Pilot plant – sanitizing, milling apples, pressing apples <ul style="list-style-type: none"><li>▪ <i>Dinner will be provided</i></li></ul>

**Tuesday**

8:30	Cider Microbiology – TBD
10:30	Break/questions
10:45	Cider Sensory Evaluation – Elizabeth Tomasino, OSU
11:45	Group exercise: Cider production flowchart
12:15-1:45	Lunch
1:45	Group 1, Laboratory – titratable acidity, sugar – Dr. Cole Cerrato, OSU Group 2, Pilot plant – acid & nitrogen addition, yeast inoculation – Dr. Elizabeth Tomasino, OSU
3:00	Break
3:15	Group 1, Pilot plant – acid & nitrogen addition, yeast inoculation – Dr. Elizabeth Tomasino, OSU Group 2, Laboratory – titratable acidity, sugar – Dr. Cole Cerrato, OSU
4:30	Break
4:30	Sensory – Aroma Training - Camilla Sartori, wine sensory manager, OSU

**Wednesday**

8:30	Group exercise, Lab Results – Dr. Cole Cerrato, OSU
9:00	SO <sub>2</sub> Additions: Amount, Timing, and Calculations – Dr. Elizabeth Tomasino, OSU.
10:00	Break
10:15	Group 1 – Laboratory, measuring free and total SO <sub>2</sub> – Dr. Cole Cerrato, OSU Group 2, pilot plant, nitrogen addition, tracking fermentation, heat test, Dr. Elizabeth Tomasino, OSU
11:15	Group 1 - pilot plant, nitrogen addition, tracking fermentation, heat test, Dr. Elizabeth Tomasino, OSU Group 2 - Laboratory, measuring free and total SO <sub>2</sub> – Dr. Cole Cerrato, OSU
12:15 – 1:45	Lunch
1:45	Ciderhouse Equipment, Tanks, Pumps, TBD
3:15	Break
3:30	Introduction to Federal compliance – Dr. Elizabeth Tomasino, OSU
4:00	Sensory – Mouthfeel training - Camilla Sartori, wine sensory manager, OSU

**Thursday**

8:30	Clarification – Dr. Elizabeth Tomasino, OSU
9:30	Heat test results
10:00	Group 1 – Laboratory, TBD, Dr. Cole Cerrato, OSU Group 2 – Pilot plant, fining trials, Dr. Elizabeth Tomasino, OSU
11:00	Group 1 – Pilot plant, fining trials, Dr. Elizabeth Tomasino, OSU Group 2 – Laboratory, TBD, Dr. Cole Cerrato, OSU
12:00-1:30	Lunch
1:30	HAACP – TBD
2:30	Filtration
3:30	Break
4:00	Sensory – Microbial Spoilage – Dr. Elizabeth Tomasino, OSU



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**Friday**

8:30	Carbonation & Pasteurization – Dr. Elizabeth Tomasino, OSU
10:00	Break
10:15	Pilot plant – Blending trials, Dr. Elizabeth Tomasino & Camilla Sartori, OSU
11:45	Hedonic testing – TBD
12:15	Visit to OSU apple orchard in Astoria, OR. Boxed lunches will be provided. <ul style="list-style-type: none"><li>▪ <i>Return to OSU by 5pm, option to be dropped off at pdx airport at 5pm.</i></li></ul>

**Support**

Please contact PACE at (541)737-4197 or email [pace@oregonstate.edu](mailto:pace@oregonstate.edu). We are available Monday through Friday from 8 a.m. until 5 p.m. Pacific time.

**Evaluation and Grading**

All PACE courses are pass / no pass. You must attend all sessions to successfully complete the course. If you are unable to attend part of the course, please discuss your attendance with the instructor before the course begins.

**Disabilities, Accessibility, and Accommodations**

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 [pace@oregonstate.edu](mailto:pace@oregonstate.edu).

**Expectations for Student Conduct**

Student conduct is governed by the university's policies, as explained in the [Student Conduct Code](#). In an academic community, students, faculty, and staff each have responsibility for maintaining an appropriate learning environment, whether online or in the classroom. Learners, instructors, 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 subject to sanctions under university policies.

**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.

**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](mailto:pace@oregonstate.edu).



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**Contact Us**

This course is offered through OSU Professional and Continuing Education. Contact us for more information using any of these methods:

Web: [pace.oregonstate.edu](http://pace.oregonstate.edu)

Email: [pace@oregonstate.edu](mailto:pace@oregonstate.edu)

Tel: 541.737.4197