

FST 110L: Food Processing Laboratory – 2 units Fall Quarter 2017

Instructors:

Prof. Gail Bornhorst
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Office Hours: Wednesdays 4 – 5 pm

Prof. Juliana Bell
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Office Hours: Tuesdays 4-5 pm

Teaching Assistants (TAs will depend on your section):

Diane Dou (fdou@ucdavis.edu): Sections 3 and 4
Office Hours: Mondays 11 am – 12 pm (3143 Robert Mondavi Institute North)

Yamile Mennah (mennah@ucdavis.edu): Sections 1 and 2
Office Hours: Wednesdays 9 – 10 am (3143 Robert Mondavi Institute North)

Alex Olenskyj (agolenskyj@ucdavis.edu): Sections 1 and 3
Office Hours: Thursdays 1-2 pm (3143 Robert Mondavi Institute North)

Stephen Young (syoung@ucdavis.edu): Sections 2 and 4
Office Hours: Fridays 11 am – 12 pm (3143 Robert Mondavi Institute North)

Discussion:

Mondays 1:10 – 2:00 pm, 55 Roesler Hall

Laboratory (All sections held in BWF – meet in the Classroom 1106):

Section 1, Tuesday 9:00 am – 11:50 am
Section 2, Tuesday 1:10 pm – 4:00 pm
Section 3, Wednesday 1:10 pm – 4:00 pm
Section 4, Friday 1:10 pm – 4:00 pm

Course Description:

Laboratory exercises in food processing reinforce the concepts of mass, momentum and energy balances. Students gain experience with common food processing equipment at pilot plant scale. Laboratory experiences include sizing, mixing, heating, cooling, freezing, pumping, evaporating, drying, packaging, and cleaning.

Course Objectives:

- 1) To describe food processing in terms of unit operations, both conceptually and in the pilot plant
- 2) To understand the use of mass and energy balances for food processing
- 3) To gain experience with common food processing equipment at pilot plant scale
- 4) To gain proficiency in the use of computers (i.e., spreadsheets) to solve food science problems
- 5) To work effectively in teams
- 6) To apply critical thinking skills to new food processing situations

Textbook:

Singh RP and Heldman DR. 2014. *Introduction to Food Engineering*, 5th Edition. Academic Press, Inc.

Email Policy:

Emails should contain: “FST110L - (subject here)” in the subject line of the message to the Instructor or TAs. Response time for emails will be no more than 24 – 48 hrs after they were received. Any emails received after 5 pm will not be answered until the **next business day (Monday-Friday)**.

Attendance Policy:

As in all professional activities, on-time attendance at each scheduled class meeting is presumed. Graded activities may take place during lecture sessions that cannot be made up due to absence. Students are expected to attend all lab sections and arrive on time. If the lab report is not turned in at the start of the lab period, it will not be accepted. If a student misses the pre-lab quiz due to being late, they will receive a zero on the quiz.

Grading:

Lab conduct & safety	5%
Pre-lab quizzes	10%
Lab reports	70%
Final exam	15%
<i>Total</i>	<i>100%</i>

Lab conduct and safety will start at full credit for all students. If a student does not follow TA or Instructor direction or is knowingly acting to cause a disturbance or safety hazard for other students, points will be deducted according to the violation.

Pre-lab quizzes will be administered during the first 5 mins of each lab session. The quizzes will be approximately 5 questions long and will cover material from the discussion.

Lab reports will be due for each laboratory exercise during the week that follows the laboratory at the beginning of the lab period. **No late assignments will be accepted.** These reports are to be completed *individually*, even though the work may be done in teams. Answers to questions on reports should **not be copied** from teammates. If copying is found, all teammates will receive a zero on the lab report. All lab reports must be submitted with a copy of the rubric (available on the course Canvas site) as the first page.

The final exam will be on **Friday December 15 at 10:30 am**. The exam will cover topics discussed in the laboratory. A study guide will be available the week before the final exam.

Discussion and Lab Schedule:

Week	Date	Discussion	Lab	Prof. Responsible
1	2-Oct	Lab 1	Flow Diagram & Data Analysis Tutorials	Bornhorst
2	9-Oct	Lab 2	Mass Balances	Bornhorst
3	16-Oct	Lab 3	Mixing and Agitation	Bornhorst
4	23-Oct	Lab 4	Energy Balances	Bell
5	30-Oct	Lab 5	Physical Properties	Bell
6	6-Nov	Lab 6/7	Virtual Lab (Thermal Processing): No in Class Labs	Bornhorst
7	13-Nov	Lab 6/7	Thermal Processing	Bornhorst
8	20-Nov	Lab 8	No lab!! (Thanksgiving week)	Bell
9	27-Nov	Lab 8	Drying and Psychrometrics	Bell
10	4-Dec	Lab 9	Liquid Transport Systems	Bell

**Finals
Week**

15-Dec Final Exam at 10:30 am on Friday December 15

