

Dale Bumpers College of Agricultural, Food and Life Sciences
UNIVERSITY OF ARKANSAS
FDSC 3103: Principles of Food Processing - Fall 2017
Lectures: Mon & Wed 2:00 to 2:50
Lab Wed 3:00 to 4:50
FDSC D1/D2

Instructor

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Office Hours

By appointment. Email the instructor to schedule an appointment.

Catalog Description

The course is designed as an overview of the unit, food processing operations common to all types of food processing plants. Examples will be drawn from international food processing operations processing, fruits and vegetable poultry and meats, oil seeds and cereal grains. Emphasis on oral communication and critical thinking skills.

Prerequisites

Prerequisite: CHEM 1123 and CHEM 1121L and MATH 2043 or MATH 2554. Co-requisite: FDSC 3100L.

Course Objectives

Students will learn the principles of food processing including the most common processing operations found in the food industry. At the end of the semester, students are expected to be able to identify the unit operations and equipment required to make the most common food products.

Course Information

Class format

The format for this class will consist of lectures on Mondays and Wednesdays from 2:00 to 2:50 pm and laboratories on Wednesday from 3:00 to 4:50 pm. The laboratory time will be used for experiments, problem solving, and field trips.

Field Trips

Field trips to local facilities are programmed throughout the semester. These field trips will take place on Wednesdays and will include the lecture and laboratory segments. On field trip days, we will gather in the front of the food science building. Please arrive at

least 10 minutes before our 2:00 pm departure. Read Safety Guidelines for Field Trips at the end of the syllabus

Homework

The food processing class has 3 homework assignments that will be due on the dates stated in the schedule. Homework needs to be **printed**.

Late assignments will not be accepted.

Final Presentation

The class will be divided in groups of 4 to 5 people and students will be assigned randomly to each group. The instructor will assign a food product to each group; and each group will have to prepare a 30-min presentation about how the product is processed and delivered to the consumer. All presentation will take place in the last two weeks of classes. Additional information about the presentations will be provided.

Textbooks (Available as electronic resource at the library)

Food Processing Technology - Principles and Practice (3rd Edition)

By Fellows, P.J. © 2009 Woodhead Publishing

Food Processing - Principles and Applications (2nd Edition)

By Clark, Stephanie, Jung, Stephanie, Lamsal, Buddhi

Other reading assignments may be announced at the end of lectures

Exams

There will be two mid-term exams and a final comprehensive exam. Exams will be based on the covered material.

Attendance

Attendance will not be taken, but if you are not present, you are responsible for and may be tested over the materials covered in class and on the field trips.

Grading

Grade break-down:

2 Midterm exams	40 (20 each)
Final exam (comprehensive)	30
Homework	16
Presentation	14
Total	100

Grading scale:

100-94% = A	89-87% = B+	79-77% = C+	69-67% = D+	Below 60% = F
93-90% = A-	86-83% = B	76-73% = C	66-63% = D	
	82-80% = B-	72-70% = C-	62-60% = D-	

General Course Policy

These are some ground rules that will facilitate learning and will make it an enjoyable experience:

- 1) Please refrain from eating, sleeping, reading the newspaper, doing homework or any other activities non-related to the Food Processing class.
- 2) Turn off your cell phones
- 3) Pay attention in class and avoid multitasking. Participation is encouraged.
- 4) Wear appropriate clothes for the lab. Open-toe shoes or sandals are not allowed. If you have long hair, please tie it back.

Academic Honesty

As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.”

“Each University of Arkansas student is required to be familiar with and abide by the University’s ‘Academic Integrity Policy’ which may be found at <http://honesty.uark.edu/faculty/index.php>

Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.”

Statement Regarding Note Selling and Distributing

There are companies that will try to lure you into selling the notes you take in this class. Don't let these companies take advantage of you. Selling my notes to any commercial service will consider a violation of my intellectual property rights and/or copyright law as well as a violation of the U of A's academic integrity policy. Continued enrollment in this class signifies intent to abide by the policy. Any violation will be reported to the Office of Academic Initiatives and Integrity.

Students with disabilities

Students needing special accommodations should inform the instructor during the first week so that arrangements may be made.

Inclement weather policy

The University guidelines for classes affected by adverse weather conditions will be followed. See the University’s Inclement Weather Policy at <http://vcfa.uark.edu/policies/fayetteville/vcfa/2100.php>. In addition, you may check the University of Arkansas Weather Hotline (479) 575-7000 for recorded messages giving information about possible delays and University closings.

Safety Guidelines for Field Trips to Processing Plants

- Wear comfortable rubber soled shoes (non-slip shoes), like tennis shoes, with closed toe and closed heel. No sandals, platform/ high-heeled shoes, or leather-soled shoes may be worn on the field trips.
- Wear comfortable, non-fuzzy clothing. No shorts
- Please remove all jewelry ahead of time, before entering food processing plants. This includes, but is not limited to, watches, rings, wedding bands, earrings, bracelets, stick pins, body piercing jewelry and necklaces.
- Wear hairnets and ear protection devices when indicated by tour guides. Bearded men are required to cover their beards with a hairnet as well.
- No chewing gum, candy, mints, drinks or other food are allowed in food processing plants.
- Please leave valuables at home or locked in your vehicle including purses, briefcases, cell phones, cameras and recording devices as these items are normally prohibited in most companies.

Emergency Procedures

Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at <http://emergency.uark.edu/>

Severe Weather (Tornado Warning):

- Follow the directions of the instructor or emergency personnel
- Seek shelter in the basement or interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside
- If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building
- Stay in the center of the room, away from exterior walls, windows, and doors

Violence / Active Shooter (CADD):

- **CALL-** 9-1-1
- **AVOID-** If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- **DENY-** Barricade the door with desk, chairs, bookcases, or any items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- **DEFEND-** Use chairs, desks, cell phones, or whatever is immediately available to distract and/or defend yourself and others from attack.

Fall 2017 Schedule (subject to change)

Week	Monday (Lecture 2:00-2:50)		Wednesday (Lecture 2:00-2:50 <i>Laboratory 3:00-4:50</i>)		Homework
1	Aug 21	Introduction to Food Processing	Aug 23	Introduction to Food Processing Raw material preparation	
2	Aug 28	Kinetics of microbial deactivation	Aug 30	Commercial sterilization-I <i>Problem solving: Calculations on thermal processing I</i>	#1 Due Sep 13
3	Sep 04	Labor Day Holiday No class	Sep 06	Field trip (Del Monte Canning Plant in Siloam Springs)	
4	Sep 11	Commercial Sterilization-II Process calculation.	Sep 13	Pasteurization, blanching, baking, roasting and frying <i>Problem solving: Calculations on thermal processing II</i>	#2 Due Sep 27
5	Sep 18	Aseptic processing	Sep 20	First Exam	
6	Sep 25	Chilling and freezing	Sep 27	Chilling and freezing <i>Problem solving: Calculations of freezing time</i>	#3 Due Oct 11
7	Oct 02	Food packaging I	Oct 04	Food packaging II Fermentation and enzyme technology	
8	Oct 09	Fermented beverages: Winemaking (By Dr. Renee Threlfall)	Oct 11	<i>Laboratory: Winemaking Groups 1 and 2</i>	
9	Oct 16	Fall Break No classes	Oct 18	<i>Laboratory: Winemaking Groups 3, 4, and 5</i>	
10	Oct 23	Second Exam	Oct 25	<i>Field Trip TBA</i>	-
11	Oct 30	Statistical process control	Nov 01	Statistical process control. <i>Problem solving: Control charts</i>	#3 Due Nov 15
12	Nov 06	Green bean evaluation	Nov 08	<i>Field Trip to Del Monte Offices. Canned green beans quality evaluation</i>	
13	Nov 13	Liquid concentration	Nov 15	Food Safety Modernization Act (FSMA)	
14	Nov 20	Presentation Group 1	Nov 22	Thanksgiving break	
15	Nov 27	Presentation Group 2	Nov 29	<i>Finish Winemaking laboratory</i>	
16	Dec 04	Presentation Group 3	Dec 06	Presentations Group 4 & 5	

Final Exam: Monday, December 11 at 3:00 to 5:00 pm