

Dale Bumpers College of Agricultural, Food and Life Sciences
UNIVERSITY OF ARKANSAS
FDSC 3103: Fundamentals of Food Processing
Fall 2006
M and W 1:30 – 3:20
FDSC D1/D2

Instructor

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Office Hours

Open door policy. Drop by or call in advance to make 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. Corequisite: FDSC 3100L.

Course Objectives

Students will learn the principles of food processing including the most common processing operation found in the food industry. At the end of the semester, students are expected to be able to identify name 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 laboratory sessions on Wednesdays that will be used for problem solving, field trips, pilot plant experiments, exams, and presentations.

Group projects

The class will be divided in four groups and each group is going to be assigned a particular food industry. Every group will have to prepare a 45 minutes Power Point

presentation for the particular industry and present to the rest of the class at the dates assigned in the schedule.

No report is required. However, you need to provide the Power Point presentation to the instructor the Monday prior to the presentation day.

The instructor will provide guidelines that will help you with the topics you need to include in the presentation.

Projects:

Sugar production (Group 1)

Corn milling (Group 2)

Wheat milling (Group 3)

Oil industry (Group 4)

Homework

The food processing class includes 5 homework assignments that will be due at the dates stated in schedule.

Textbook (Available as an electronic resource at the library)

Food Processing Technology - Principles and Practice (2nd Edition)

By: Fellows, P.J. © 2000 Woodhead Publishing

Attendance

Presence at every class and laboratory session is required

Exams

Two mid-term exams will be given covering material discussed in class and reading assignments and one final exam that will be cumulative.

Makeup Exams

Students who have a valid documented reason for missing an exam, such as illness or a class conflict, will be allowed to take a makeup exam. If you are in this situation, you should contact the instructor without delay to schedule the exam. Students with no valid reasons for missing an exam will be allowed to take a comprehensive makeup exam at the end of the semester.

Grading

Grade break-down:

Exams	65% (20% for each midterm and 25% for the final)
Homework	15%
Attendance	5%
Presentations	15%

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-	

Academic honesty

This course will follow University rules and regulations concerning academic honesty. They are contained in the undergraduate catalog, and you are expected to be familiar with them.

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://advancement.uark.edu/info/weather.nclk>. Also, you may check the University of Arkansas Weather Hotline (479) 575-7000 for recorded messages giving information about possible delays and University closings.

Tentative Schedule (subject to change)

Week		Monday (Lecture)		Wednesday (Laboratory)	Homework
1	Aug 21	Introduction to food processing Raw material preparation,	Aug 23	Problem solving session: Dimensional analysis Units conversion	#1 Due Sep 6
2	Aug 28	Preservation process Thermal processing	Aug 30	Problem solving session: Calculations on thermal processing I	#2 Due Sep 13
3	Sep 04	Labor Day Holliday No classes	Sep 06	Pilot plant experiment on thermal processing	
4	Sep 11	Commercial sterilization Process calculation	Sep 13	Problem solving session: Calculations on thermal processing II	#3 Due Sep 20
5	Sep 18	Pasteurization and Blanching Baking, roasting and frying	Sep 20	Field trip (TBA)	
6	Sep 25	Liquid concentration: Evaporation and membrane concentration	Sep 27	First Exam	-
7	Oct 02	Dehydration	Oct 04	Visit to Tyson plant	-
8	Oct 09	Chilling and freezing	Oct 11	Problem solving session: Calculations of freezing time	-#4 Due Nov 01
9	Oct 16	Processing using electric fields, high hydrostatic pressure, light, irradiation or ultrasound	Oct 18	Visit to Newlyweds	
10	Oct 23	Centrifugation/Filtration; Expression, Extrusion	Oct 25	Extrusion: Pilot plant demonstration	-
11	Oct 30	Fermentation and enzyme technology	Nov 01	Second Exam	--
12	Nov 06	Statistical process control	Nov 08	Problem solving session: Control charts	#5 Due Nov 29
13	Nov 13	Food packaging	Nov 15	Final project presentations Group I and II	-
14	Nov 20	Filling and sealing containers Handling and distribution	Nov 22	Fall Break (academic holiday)	-
15	Nov 27	Waste treatment in processing plants	Nov 29	Final project presentations Group III and IV	-
16	Dec 04	Review for final			-

Final Exam: Thursday, December 7 at 12:30-2:30 pm.