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:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>2 Midterm exams</td>
<td>40 (20 each)</td>
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<tr>
<td>Final exam (comprehensive)</td>
<td>30</td>
</tr>
<tr>
<td>Homework</td>
<td>10</td>
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<tr>
<td>Presentation</td>
<td>20</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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</tbody>
</table>

Grading scale:

- 100-94% = A
- 93-90% = A-
- 89-87% = B+
- 86-83% = B
- 79-77% = C+
- 76-73% = C
- 69-67% = D+
- 66-63% = D
- 62-60% = D-
- Below 60% = F
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://catalogofstudies.uark.edu/2882.php

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

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 2016 Schedule (subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday (Lecture 2:00-2:50)</th>
<th>Wednesday (Lecture 2:00-2:50)</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 22 Introduction to Food Processing</td>
<td>Aug 24 Raw material preparation. Video: From Farm to Table</td>
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<td>Labor Day Holiday No classes</td>
<td>#1 Due Sep 14</td>
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<td>2</td>
<td>Aug 29 Kinetics of microbial deactivation</td>
<td>Aug 31 Commercial sterilization-I Problem solving: Calculations on thermal processing I</td>
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<tr>
<td>3</td>
<td>Sep 05 Labor Day Holiday No classes</td>
<td>Sep 07 Finish Commercial Sterilization-II Process calculation. Problem solving: Calculations on thermal processing II</td>
<td>#2 Due Sep 26</td>
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<tr>
<td>4</td>
<td>Sep 12 Pasteurization, blanching, baking, roasting and frying</td>
<td>Sep 14 - Finish Pasteurization, blanching, baking, roasting and frying - Food packaging I</td>
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<tr>
<td>5</td>
<td>Sep 19 First Exam</td>
<td>Sep 21 Field trip (Del Monte Canning Plant in Siloam Springs)</td>
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<tr>
<td>6</td>
<td>Sep 26 Food packaging II</td>
<td>Sep 28 Food packaging lab: Determination of film permeability</td>
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<td>7</td>
<td>Oct 03 Fermentation and enzyme technology</td>
<td>Oct 05 Laboratory: Production of high fructose corn syrup</td>
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<td>8</td>
<td>Oct 10 Fermented beverages: Winemaking (By Dr. Renee Threlfall)</td>
<td>Oct 12 Laboratory: Winemaking Groups 1 and 2</td>
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<tr>
<td>9</td>
<td>Oct 17 Fall Break No classes</td>
<td>Oct 19 Laboratory: Winemaking Groups 3, 4, and 5</td>
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<td>10</td>
<td>Oct 24 Second Exam</td>
<td>Oct 26 Field Trip TBA</td>
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<tr>
<td>11</td>
<td>Oct 31 Statistical process control</td>
<td>Nov 02 Statistical process control. Problem solving: Control charts</td>
<td>#3 Due Nov 16</td>
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<tr>
<td>12</td>
<td>Nov 07 Green bean evaluation</td>
<td>Nov 09 Field Trip to Del Monte Offices. Canned green beans quality evaluation</td>
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<tr>
<td>13</td>
<td>Nov 14 Liquid concentration</td>
<td>Nov 16 Centrifugation, filtration, extrusion Chilling and Freezing</td>
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<tr>
<td>14</td>
<td>Nov 21 Presentation Group 1</td>
<td>Nov 23 Thanksgiving holiday</td>
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<tr>
<td>15</td>
<td>Nov 28 Presentation Group 2</td>
<td>Nov 30 Finish Winemaking laboratory</td>
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<tr>
<td>16</td>
<td>Dec 05 Presentation Group 3</td>
<td>Dec 07 Presentations Group 4 &amp; 5</td>
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**Final Exam: 12/16/2016 1:00PM – 3:00PM**