Food, flavor, and health (NTD 226)

Nutrition (NTD) Course Number – Farm to table Food, Flavor, and Health
Spring 2024
College of Health Sciences, Department of Nutrition

Professor Information:

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Class location: SECC 201- Th 12:30-2:45PM- Blended (*In-person, Zoom, and asynchronous*)
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Course Schedule:

This course will be a blended course and contains in-class, lab, and online activities. Students might watch video lectures and complete assignments online so that their class time with the instructor can be used for discussions, lab experiments, student oral presentations, completing a worksheet, or other activities.

Course Description:

This course combines online lectures, in-class activities, and laboratory experiments to apply the principles food preservation for increasing the value and shelf-life of local farm crops. Students will gain an understanding of sustainable food production, methods of recording the human responses to food flavor, and conventional food preservation techniques. They will learn how to apply these principles to safely preserve food by canning, pickling, dehydration, and other traditional techniques. Additionally, students will be trained to communicate the steps that are involved in making a healthy and sustainable food product/recipe for consumer acceptability and nutritional qualities.

Course Prerequisites:

None

Tentative Course Schedule (NTD 226)- Spring 2024:

(IP): in person
(AS): Asynchronous
(RS): Remote synchronous

Week	Class Topic	Course material	Assignment

1- Class 1/25 (IP)	• Course Introduction and syllabus • Preserving food from spoilage and sustainability	• A review on mechanism of food preservation • UN sustainable development goals knowledge platform	• Introduce yourself (online activity) • Teams will form
2- class 2/1 (IP) and (AS)	• Sustainable food product/recipe project (step one: justification a recipe selection) (IP) • Principles of food safety (AS)	• USDA Food safety basics	
3- Lab 2/8 (IP)	• Lab safety • Lab protocols • Weight and measures	• Department of nutrition's lab protocol • USDA Foodmaster	• Quiz 1 (introduction and food safety) due • Work on step 1 of the project
4 – class 2/15 (IP)	• Food tasting (sensory evaluation of foods) • sustainable food product/recipe project (step two: plan for sensory evaluation)	Choi, 2017, Sensory evaluation	• Lab report #1 (lab safety and weight and measures) due.
5 – lab 2/22 (IP)	• Sensory evaluation of foods lab	• Sustainable food product/recipe project guidelines on D2L	• Post your recorded presentation for step 1 of the project on D2L (individual presentation)
6- lab 2/26-3/4 (IP)	Canning (high acid foods) lab	READ: • Lab procedure	• Lab report #2 (sensory evaluation) due
7- class 3/7 (AS)	• Principles of canning	READ: • USDA's Guide to Principles of Canning • Farm to table sustainable food product/recipe project guideline	• Lab report#3 (Canning) due
8- spring break	Spring break		
9- class 3/21 (AS)	• Dehydration	Prevention of enzymatic browning in fruits and vegetables	• Quiz #2 (sensory evaluation and canning) due

10- class 3/28 (RS)	• Individual presentation of step 2 of the project	Sustainable food product/recipe project guidelines on D2L	• Quiz #3 (Dehydration) due
11- lab 4/7 (IP)	• Dehydration	• Drying Vegetables (University of Arizona cooperative extension) • University of Georgia- National center for food preservation	
12 – lab 4/14 (IP)	• Groups will conduct taste testing	Sustainable food product/recipe project guidelines on D2L	• Lab report #4 (Dehydration) due
13- lab 4/21 (IP)	• Groups will conduct taste testing	Sustainable food product/recipe project guidelines on D2L	
14- lab 4/28 (IP)	• Groups will conduct taste testing	Sustainable food product/recipe project guidelines on D2L	Follow the procedure for final presentation
15- class 5/4 (IP)	Groups presentation (in-class)	Sustainable food product/recipe project guidelines on D2L	
16- finals week (IP)	Group presentation (in-class)	Sustainable food product/recipe project guidelines on D2L	

Textbook & Required Materials:

Textbooks, online readings, and other sources will be included in the course schedule and in the references section of this syllabus. Instructions on these required readings will be given on the course D2L page or in class. Students are responsible for the content of all readings. Due to the special approach of this course in teaching the application of food preservation and tasting in sustainability, there will be no required text for this course. Students will gain knowledge through multiple resources including reliable websites, books, and articles.

Evaluation:

Assessment Items	Points	%	PLO Standard	C-SLO
Quizzes (3 online quizzes)	100	20%	1-2	1-3
Lab attendance and reports (4 lab reports)	200	40%	1-5	2-4

Sustainable/Plant-based project presentations (recorded, individual, and final group presentations)	200	40%	1, 3-6	1-2, 4-5
Introduction discussion board	10	bonus	N/A	N/A
Total	510	102%		

Grading Scale:

A = 93–100, A- = 90–92, B+ = 87–89, B = 83–86, B- = 80–82, C+ = 77–79, C = 73–76, C-= 70-72, D+ = 67-69, D = 63-66, D- = 60-62, F = <59

Exam Policy:

Students' information will be tested with three quizzes with multiple choice, and true/false (D2L-based). Topics that are covered in lectures will be the focus of each exam; however, the information contained in the assigned readings and experiments will provide the framework for this material and therefore should be well understood. Please ask questions - during both class and office hours - to clarify your understanding of any topic(s) covered in class and in the readings. Generally, there is no make up for exams unless you have a documented and university-approved excuse. Please let me know if you need any special accommodations for the exams.

Attendance Policy:

It is our experience that regular attendance is a good predictor of success in nutrition and courses that have lab sessions. Students are expected to prepare for, attend, and participate fully in all in-person and online activities. Attendance will be taken in all sessions; however, students may have ***one unexcused*** *absence without penalty. Students are responsible for the materials discussed in class on the days they missed. Students are not permitted to miss class on the days when lab activities are scheduled, or assignments are due. Unexcused absence on these days will lead to forfeiture of the points assigned for the lab report or assignment.*

Course Policies:

Specific information about the assignments

All written assignments will be word processed, 12-font, single-spaced, use 1-inch margins, Times New Roman or Calibri font, and APA or AMA formatting for references, citations, indents, and grammar, unless otherwise indicated. Students will hand in assignments via D2L in Word document format (.docx) or PDF. Grading will evaluate content, spelling, sentence structure, composition, organization, neatness, and presentation style.

Lab attendance and lab reports: students are expected to attend and participate in all scheduled labs. Students must report to lab with proper lab attire. Students reporting without proper lab attire will not be permitted to participate in the lab portion of the class. Description of proper lab attire can be found in the content section of the D2L homepage and will be posted in the lab. Lab reports will be completed at the end of each lab assessing comprehension of lab concepts.

Local Food Product Development (individual and group presentation): students will work in groups to develop or make a sustainable or plant-based recipe, preferably using a local food product or a campus garden crop, that can be marketed. The projects involve brain storming, idea conception, finding a sustainable or plant-based recipe, strategies to make and taste-testing the recipe in the department of nutrition food and sensory evaluation labs and presenting the rational, plan, and results in three phases. A detailed guideline, rubric, and supporting materials and examples will be made available to students on D2L.

- **Phase I (rational and justification, group activity, individual recorded presentation)**: Students will work in a group of 3 to prepare a recorded presentation in which they justify their project and selection of their recipe. In these presentations, students will provide background information on sustainable development goals of the United Nations (SDGs), the impact of the type of diet and food waste on the environment, and how diet and food preservation can

contribute to population health and the SDGs. At the end of this presentation students will introduce their recipe and explain the reason for selecting their recipe. Gathering information can be done in groups, however each group member will create their slides and video. The recorded video will be posted on D2L by the deadline (end of the week 5).

- **Phase II (taste-testing plan, group activity, individual presentation to the instructor):** This phase, starts in week 5 of the course. During week 5 of the course, students will learn about the procedure for taste testing (sensory evaluation) and the steps that are involved in conducting a taste testing. Students will adopt and adjust these steps in making, advertising, and taste-testing of their own recipe. The plan will be created in groups but will be presented individually to the instructor via Zoom.
- **Phase III (Final presentation- Group presentation to class):** In this final step, teams will present their recipe, their experiences and challenges of planning and conducting the taste-testing to class and the instructor. They will also share the feedback they received from participants about their recipe and share their overall experience and recommendations for improvement of the recipe. Group members will divide the presentation into equal or similar portion and each member will present one part.

Recommended Reference:

New Food Product Development: From Concept to Marketplace, Third Edition- Gordon W. Fuller. January 18, 2011, by CRC Press. ISBN 9781439818640.

Ball Complete Book of Home Preserving by Judi Kingry, Lauren Devine, and Sarah Page. Robert Rose Publication (May 1, 2020). ISBN 0778801314.

Sensory evaluation techniques by Morten C. Meilgaard, Civille Gail Vance, and Carr B. Thomas. CRC Press; 5th edition (November 23, 2015). ISBN 9781482216905.

Program Learning Outcomes (PLO):

1. To explain the relationship between food preservation, food waste, health, and sustainability.
2. To explain how food preservation techniques (e.g., canning and dehydration) can increase the value and shelf-life of local farm crops.
3. To practice the food presentation techniques.
4. To practice taste testing (sensory evaluation of foods) techniques that are used to study the acceptability of a food product.
5. To gain an understanding of the processes involved in development of new recipes or food products with an emphasis on plant-based and sustainable foods.
6. To communicate the steps of developing and testing a health-promoting and sustainable food product/recipe with variety of written and verbal presentation techniques.

Course-Level Student Learning Outcomes (C-SLO):

Upon completing this course, students should be able to:

1. Explain the factors that contribute to food spoilage and how this knowledge can be applied to preserve local food crops, including the campus, community, and backyard garden crops.
2. Describe the role of food preservation and food quality and taste in reducing food waste and improving population health.
3. Explain the principles of canning and dehydration and apply these techniques in making pickles, canned fruits/vegetables, and dehydrated fruits and fruit leathers.

4. Describe and apply the principles of taste testing (sensory evaluation of foods) in making or developing a sustainable food product or a plant-based recipe.
5. Practice variety of communication skills including a recorded presentation video, individual, and group presentation in a project-based, collaborative food product/recipe development assignment.