



Course Outline

2026-2027 Catalog

FN 12 - Introduction to Food Science

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: Application of food science principles with emphasis on ingredient function and interaction, food preparation techniques, sensory evaluation standards, food safety and sanitation, and nutrient composition of food. This course is recommended for nutrition, dietetics, and food science majors. (C-ID NUTR 120).

Objectives

Upon successful completion of this course, the student should be able to:

1. Prepare and present a variety of products from each major category of food (e.g., dairy, grains, meat, etc.).
2. Apply basic food science principles (e.g., emulsification, preservation, crystallization, starch cookery, protein cookery, sensory evaluation).
3. Describe and utilize accepted food safety and sanitation procedures.
4. Identify and compare preparation methods to optimize nutrient content.
5. Demonstrate basic knowledge of food preparation terminology and techniques.
6. Demonstrate basic knowledge of weights, measures and conversions.
7. Demonstrate the ability to follow a standardized recipe.
8. Evaluate sensory attributes of food.
9. Select, use and maintain laboratory equipment and utensils.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Food Safety and Laboratory Safety using Cooking Equipment and Utensils	1.00
Principles of heat and cooking plus Introduction to Sensory Evaluation	1.00
Fruit and Vegetable Cookery retention of nutrition and visual appeal	5.00
Properties of fats in foods	2.00
Storage standards and food preservation methods	2.00
Principles of Eggs, Egg Products and Egg substitutes	2.00
Milk and Dairy products	2.00
Starches: grains, pasta and gluten free	3.00
Poultry and Red Meat	4.00
Seafood and meat alternatives (legumes)	3.00
Principles of sugar and ice crystallization	2.00
Baking principles: batters and doughs	4.00
Introduction to Food Science	1.00
Emulsions and Salad Dressings	2.00

Total Hours: 34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Introduction to Laboratory, knife safety, personal safety and hygiene	3.00
Recipe anatomy and introduction to sensory evaluation	3.00
Fruit cookery and enzymatic browning	3.00
Vegetable cookery and plant pigments	3.00
Emulsifications, salads and salad dressings	3.00
Preserving Fruits and Vegetables	3.00
Egg cookery and egg substitutes	3.00

Topics	Lab Hrs
Milk cookery and cheese evaluation	3.00
Starch and starch cookery	3.00
Quick Breads and Pastry	3.00
Yeast breads and cakes	3.00
Poultry and meat cookery	3.00
Seafood and legume cookery	3.00
Sugar and ice crystallization: Ice cream and candy	3.00
Measurements and measurement techniques	3.00
Grains and cereal cookery	3.00
Sanitation of equipment and utensils	3.00
Total Hours:	51.00

Methods of Instruction

- A. Class Activities
- B. Collaborative Group Work
- C. Discussion
- D. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- E. Lecture
- F. Reading Assignments
- G. AS-T in Nutrition and Dietetics
AS in Nutrition and Food Science

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Projects
- D. Homework
- E. Written Assignments
- F. Class Discussion
- G. Lab Report(s)

Examples of Assignments

Reading Assignments

1. Read a recipe with at least six ingredients. Be prepared to discuss the recipe construction and the function for each recipe ingredient.
2. Read a food inspection report from the Butte County Public Health Department. Be prepared to discuss the minor and major violations and the impact these would have on food safety.

Writing Assignments

1. Write a 2-page summary of a current food trend (i.e. plant-based milks). Identify potential consumer concerns or other reasons that may be responsible for the trend. Include the impact on the food industry.
2. Find and read a scientific research article relevant to food science. Summarize the article. Discuss how this information is applied in the food industry.

Out-of-Class Assignments

1. Research a food ingredient (i.e. eggs) and prepare a PowerPoint presentation to be given during class. The presentation will include nutrient content, purpose of ingredient in a recipe, and overall consumption of the food ingredient in the United States.
2. Find a "flavor wheel" for a food (i.e. chocolate, coffee, cheese, etc.). Prepare a two-page paper describing terms on the flavor wheel. In the paper, discuss why it is important for sensory scientists to use the same terms (aka "lexicon").

Recommended Materials of Instruction

Bennion and Scheule. (2015). Introductory Foods. *Pearson, 14th*.
McWilliams, M. (2012). Laboratory Manual for Foods: Experimental Perspectives. *Pearson, 9th*.

Minimum Qualifications

Nutritional Science/Dietetics (Masters Required)

Created/Revised by: Stagner, Brenda

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