HS 014: PRINCIPLES OF FOOD

Originator
kspurgin

Justification / Rationale
The proposed changes to the learning outcomes are intended to more closely match course objectives. Learning objectives 4, 5, 6, and 7 all relate to food preparation techniques. Food preparation is not clearly represented in the Student Learning Outcomes

Effective Term
Fall 2020

Credit Status
Credit - Degree Applicable

Subject
HS - Health Sciences

Course Number
014

Full Course Title
Principles of Food

Short Title
PRINCIPLES OF FOOD

Discipline

Disciplines List
Health
Culinary Arts/Food Technology (Food service, meat cutting, baking, waiter/waitressing, bartending)

Modality
Face-to-Face

Catalog 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.

Schedule Description
Application of food science principles with lab. Advisory: ENG 061

Lecture Units
2
Lecture Semester Hours
36

Lab Units
1
Lab Semester Hours
54

In-class Hours
90

Out-of-class Hours
72

Total Course Units
3
Total Semester Hours
162

Prerequisite Course(s)
Advisory: ENG 061

Required Text and Other Instructional Materials

Resource Type
Book

Author
Brown, A

Title
Understanding Food, Principles and Preparation

Edition
5th

Publisher
Cengage Learning

Year
2014

College Level
Yes

Resource Type
Manual

Author
Brown, A

Title
Lab Manual for Brown's Understanding Food, Principles and Preparation

Publisher
Cengage Learning

Year
2014-01-01

Class Size Maximum
40

Entrance Skills
Student must be able to read and comprehend textbook and assignments.

Requisite Course Objectives
ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Course Content

1. Basic food science principles, terminology and techniques
2. Ingredient functions and interactions
3. Product standards and sensory evaluation
4. Equipment and utensils
5. Storage standards
6. Sanitation and safety
7. Nutrient composition and retention

Lab Content

1. Basic food science principles, terminology and techniques
2. Ingredient functions and interactions
3. Product standards and sensory evaluation
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5. Storage standards
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7. Nutrient composition and retention

Course Objectives

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

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Synthesize and apply basic principles of food science including food preparation terminology and techniques
Outcome 2	Develop, implement, evaluate and report on a food research problem that mediates a given nutrition problem.
Outcome 3	Appraise, evaluate and effectively judge food quality using objective and sensory methods of assessment.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Activity	Diet Study and calculation of personal caloric needs.
Technology-based instruction	Blog posts- Students will be given a prompt for each blog post to be performed online This will allow students to demonstrate critical thinking skills.
Experiential	Tours of Food Preparation Facilities and/or Agricultural organizations
Lecture	Students will learn about various research methodologies used in food science (including the scientific method); to understand basic concepts of food technology; to understand environmental issues related to food; and to apply microbiological and chemical considerations to process controls.

Laboratory	Through lab exercises, students will gain hands-on experience with standard techniques in food analysis, basic problem-solving in food system applications, and applied sensory evaluation of food products. Students also will demonstrate their ability to apply food science knowledge to the functions of ingredients in foods and to interpret basic statistical information.
Discussion	Students will take part in regular discussions in lab to review and strengthen understanding of lecture concepts.
Demonstration, Repetition/Practice	Throughout the semester course, there will be required demonstrations so students may show proficiency in the required tasks. At this time they will be required to do the tasks such as: 1. Demonstrate proper knife handling skills 2. Make an egg 3. Demonstrate proper cutting of vegetables

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Laboratory projects	Through lab exercises, students will gain hands-on experience with standard techniques in food analysis, basic problem-solving in food system applications, and applied sensory evaluation of food products. Students also will demonstrate their ability to apply food science knowledge to the functions of ingredients in foods and to interpret basic statistical information. Lab project will be assigned and completed each week during the laboratory portion of class and are intended to utilize the entire laboratory time. Laboratory projects will also require independent study at home. Examples of laboratory projects may include: pH and Dilutions, Carbohydrate analysis, Proteins and gluten functionality, Effect of fat on sensory properties of cheese, Quantifying microorganisms in food samples, Biofilms and Sanitation, Factors affecting microbial growth, Food borne illnesses (Case studies), Sensory Lab, Quality of Homemade and Processed Foods, Factors affecting potato chip quality, caramelization lab, and Ice Cream Lab.	In and Out of Class
Mid-term and final evaluations	Midterm and Final examinations wil be used to assess understanding and retention of materials covered in class.	In Class Only
Tests/Quizzes/Examinations	Quizzes will be given regularly to reinforce learning objectives	In Class Only
Written homework	Weekly homework assignments will is intended to enhance student preparation for class.	Out of Class Only
Reading reports	Critical evaluation of articles such as "How to read a medical study? Searching for clarity" (New York Times) and “Typical pH values of biological materials and foods” (CRC Handbook)	In and Out of Class
Student participation/contribution	Case studies to promote critical thinking and information synthesis.	In and Out of Class

Assignments

Other In-class Assignments

Students will demonstrate their ability to understand various research
methodologies used in food science (including the scientific method); to understand
basic concepts of food technology; to understand environmental issues related to food
and to apply microbiological and chemical considerations to process controls. Examples of in class assignments may include:

1. Prepare and present various food recipes
2. Quizzes/Exams on food safety, sanitation, food preparation techniques, and other basic food science principles
3. Sensory attribute project
4. Flow diagrams and Mass balances
5. Critical review of articles such as “Say hello to the bugs in your gut” (Newsweek) and “Probiotics: Their potential to Impact Human Health” (CAST)

Other Out-of-class Assignments

1. Homework
   a. Review of assigned learning materials
   b. Critical evaluation of articles such as "How to read a medical study? Searching for clarity" (New York Times) and “Typical pH values of biological materials and foods” (CRC Handbook)
2. Research
   a. Food safety guidelines
   b. Proper sanitation
   c. Food preparation techniques
   d. Basic food science principles
3. Case studies to promote critical thinking and information synthesis such as:
   a. Case Study: Apple Cider
   b. Case Study: CA Storage of Apples
   c. Case Study: Margarine and Trans Fat
   d. Case Study: Sugar Alcohols Food Nutrition II

Grade Methods

Letter Grade Only

Comparable Transfer Course Information

University System

CSU

Campus

CSU San Bernardino

Course Number

HSCI 245

Course Title

Introduction to Food Science

Rationale

This is an approved C-ID course (NUTR 120) and has been created using the final template.

MIS Course Data

CIP Code

19.0501 - Foods, Nutrition, and Wellness Studies, General.

TOP Code

130600 - Nutrition, Foods, and Culinary Arts

SAM Code

C - Clearly Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience
Not a Coop Course

Course Classification Status
Credit Course

Approved Special Class
Not special class

Noncredit Category
Not Applicable, Credit Course

Funding Agency Category
Not Applicable

Program Status
Program Applicable

Transfer Status
Transferable to CSU only

General Education Status
Not applicable

Support Course Status
Course is not a support course

C-ID
NUTR 120

Allow Audit
No

Repeatability
No

Materials Fee
No

Additional Fees?
No

Approvals

Curriculum Committee Approval Date
5/05/2020

Academic Senate Approval Date
5/14/2020

Board of Trustees Approval Date
6/18/2020

Course Control Number
CCC000579559

Programs referencing this course
Intermediate Culinary Arts Certificate of Achievement (http://catalog.collegeofthedesert.eduundefined?key=125/)
Culinary Management AS Degree (http://catalog.collegeofthedesert.eduundefined?key=23/)
Health Science AS Degree (http://catalog.collegeofthedesert.eduundefined?key=65/)
Nutrition and Dietetics AS-T Degree (http://catalog.collegeofthedesert.eduundefined?key=7/)