

CUL 229 - FUNDAMENTALS OF FOOD SCIENCE

Learning How to Learn:

- Practice strategies for interpreting scientific information related to food chemistry.
- Develop inquiry-based learning habits that support continued growth in food science knowledge beyond the course.

Course Description

Unwrap the molecular world of food through an investigation of macro nutrients and their food sources. This lecture class will explore the chemical structure of foods, including their biological metabolism. An emphasis on the transformation of texture and taste of food items will be highlighted through group discussion and experiential learning. Group 2 course.

Credit Hours

3

Contact Hours

3

Lecture Hours

3

Required Prerequisites

BIO 106, BIO 106L, CUL 102, CUL 110, CUL 111, CUL 118, CUL 201, CUL 210, CUL 213

General Education Outcomes supported by this course

Critical Thinking - Direct

Course Learning Outcomes

Knowledge:

- Identify the chemical structures and properties of macro nutrients and their primary food sources.
- Explain how molecular composition influences metabolism, taste, and texture in foods.

Application:

- Analyze how key chemical reactions (e.g., denaturation, caramelization, emulsification) affect food preparation outcomes.
- Apply food chemistry concepts to interpret sensory and textural changes observed during experiential learning activities.

Integration:

- Connect food chemistry principles with culinary techniques to explain how cooking methods alter structure and flavor.
- Integrate concepts from chemistry, biology, and culinary arts to understand real-world food transformations.

Human Dimension:

- Recognize how scientific literacy enhances their identity and capability as evidence-based culinary professionals.
- Reflect on how understanding food chemistry supports their growth and confidence in culinary and nutrition-related fields.

Caring - Civic Learning:

- Value the role of food chemistry in improving food quality, consistency, and nutrient integrity.
- Demonstrate increased appreciation for scientific inquiry as a vital component of culinary excellence.