

# Minnesota State University Moorhead

## CHEM 600: Chemistry of Food and Cooking

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This class will expand and apply chemistry topics from physical, analytical, organic, and biochemistry to modern food chemistry applications. The main focus will be on understanding how chemistry principles and experimental techniques are used to understand and inform our interaction with food and cooking. Specifically, this course will address the molecular properties and changes that occur during processing, storage, and cooking of different types of foods. Emphasis will be on evidence derived from original research literature, interpretation of research findings, and problem solving based on the scientific principles of food chemistry.

**B. COURSE EFFECTIVE DATES:** 02/01/2021 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Molecular composition of foods
2. Chemistry of lipids, carbohydrates, proteins, and other food molecules
3. Current applications of chemistry in food science

### D. LEARNING OUTCOMES (General)

1. Describe the chemical properties of major food molecules, including lipids, carbohydrates, protein, and water.
2. Apply the principles of chemistry to understand the behavior of macromolecules in food during cooking and storage.
3. Critically evaluate what current experimental techniques can and cannot tell us about food molecules.
4. Synthesize primary literature to describe current knowledge of food macromolecular behavior.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted