

# CUSC-350 : Microbial Ecology of Food Systems

The physiology, metabolism, and ecology of the unicellular organisms that impact the safety and quality of food will be examined in this course. Focus will be on the application of culinary practices to control the growth of microorganisms in the kitchen. Food fermentations will be explored in detail and will provide ecological perspective on microorganisms. Additional topics include traditional and novel preservation techniques, cleaning and sanitation technology, and flavor transformation through fermentation. Through lab sections, students will become familiar with aseptic technique, traditional and molecular isolation and culturing methods, and the role of microbiology in shelf life testing and process validation. Dairy-, vegetable-, and meat-based fermentations will be prepared and evaluated.

**Credits** 3

**Prerequisites**

Culinary Science: Principles and Applications (CUSC-200), College Algebra (MTSC-110) or Calculus I (MTSC-205), Science Fundamentals (MTSC-115), Introduction to Statistics (MTSC-200), Culinary Chemistry (CUSC-310), Dynamics of Heat Transfer and Properties of Food (CUSC-315), Flavor Science and Perception (CUSC-320), and Research Methods: Scientific Evaluation of Traditional Cooking Techniques (CUSC-325).