

CUSC-315 : Dynamics of Heat Transfer and Physical Properties of Food

Exploring the two fundamental aspects of cooking--heat and water--this course will delve into details of the physics underlying the culinary techniques and their effects on safety and quality of food. The course will cover effects of energy transfer into foods on their nutritional, sensory, and microbial quality; the definition and measure of the physical properties of food; the solid, liquid, and gas phases in foods; and the laws of thermodynamics as they apply in the kitchen. The effects of convection conduction and radiant energy on the structural changes in plant- and animal-based ingredients will be discussed and explored in the kitchen-based labs. Labs will provide students with an opportunity to better understand how culinary techniques and industrial analogs alter the physical state of food.

Credits 3

Prerequisites

Culinary Science: Principles and Applications (CUSC-200) and Science Fundamentals (MTSC-115).

Prerequisite or Corequisite

College Algebra ([MTSC-110](#)) or Calculus I ([MTSC-205](#)).