

AGRI 1329
Principles of Food Science
Western Texas College

I. Basic Course Information

A. Course Description: Biological and scientific aspects of modern industrial food supply systems. Food classification, modern processing, nutritional quality, and quality control.

II. Student Learning Outcomes

Upon successful completion of this course, students will:

- A. Identify the principles of food science related to food production, quality, safety, nutrition, and distribution.
- B. Describe common and emerging technologies in food science.
- C. Explain how engineering, microbiology, and chemistry are applied in food production and processing systems.
- D. Describe food safety procedures in U.S. production systems.
- E. Demonstrate appropriate food handling/food safety procedures.
- F. Explain nutrient composition and the link between nutrition and health.
- G. Examine the dynamics of global food supply.

III. Course Requirements

- A. Six Major Exams – 600 points
- B. Research Project – 100 points
- C. Food Lab Participation/Activities – 300 points
- D. Comprehensive Final Exam – 200 points

IV. Information On Book

- A. Introduction to Food Science & Food Systems
 ISBN-13: 978-1-4354-8939-4 ISBN-10: 1-4354-8939-X

V. Other Policies, Procedures and important dates. Please refer to the WTC [Catalog](#) for the following:

- A. Campus Calendar
- B. Final exam schedule
- C. How to drop a class
- D. Withdrawal information
- E. Student Conduct/Academic Integrity
- F. Class Attendance
- G. Students with disabilities

VI. Course Content and Tentative Schedule*

Week 1	Introduction Chapter 1: Overview of Food Science Chapter 2: Food Systems and Sustainability
Week 2	Chapter 28: World Food Needs Chapter 30: Careers Activity: Food Company Investigation
Week 3	Exam #1 Chapter 3: Chemistry of Foods Chapter 4: Nutrition and Digestion Activity: Meal Analyzation
Week 4	Chapter 5 Food Composition Chapter 29: Food and Health Exam #2 Activity: Sugar Free and Lactose Free Food Creation
Week 5	Chapter 6: Quality Factors in Food Chapter 7: Unit Operations in Food Processing Chapter 25: Environmental Concerns and Processing Activity: Potato Chip Evaluation

Week 6	Chapter 26: Food Safety Chapter 27: Regulations and Labeling Exam #3 Activity: HACCP Protocols
Week 7	Chapter 8: Food Deterioration Chapter 9: Heat Preservation Chapter 10: Cold Preservation Chapter 11: Drying and Dehydration Activity: Jerky Preparation
Week 8	Chapter 12: Radiant and Electrical Energy Chapter 13: Fermentation Chapter 14: Food Additives Chapter 15: Packaging Exam #4 Activity: Yeast Breads vs. Quick Breads
Week 9	Chapter 16: Milk Chapter 21: Fruits and Vegetables Activity: Canning and Preserving
Week 10	Spring Break Gather Research Project Data
Week 11	Chapter 17: Meat Chapter 18: Poultry and Eggs Chapter 19: Fish and Shellfish Activity: Grilling and Frying to Safe Temperatures
Week 12	Chapter 20: Cereal Grains, Legumes and Oilseeds Chapter 22: Fats and Oils Activity: Fats and Oils Comparison in the Kitchen
Week 13	Chapter 23: Candy and Confectionery Chapter 24: Beverages Exam #5 Activity: Understanding and Using Candy Thermometers
Week 14	Exam #6 (Recipe Book)
Week 15	Research Project Due Review for Final Exam
Week 16	Final Exam

*The above schedule, policies, procedures and assignments in this course are subject to change.