

**SOUTHEAST MISSOURI STATE UNIVERSITY
COURSE SYLLABUS**

Department of: Human Environmental Studies **Course No.** FN 627

Title of Course: Essentials of Food Science **Revision:** dual enrollment with FN320

New: Sp 2006

I. Catalog Description and Credit Hours of Course:

Application of food science principles and their effects on product quality, recipe development, nutritional value and current assessment techniques (4 cr. Hrs)

II. Prerequisite(s):

FN205, CH181, CH234, PY217 or consent of instructor

III. Purposes or Objectives of the Course:

The student will be able

- A. To identify food components, their properties and their effect on food systems.
- B. To utilize professional and popular food technology literature.
- C. To apply the scientific principles involved in various food systems to development, production, and evaluation of food products.
- D. To design and execute sensory evaluations of food products.
- E. To evaluate the impact of ingredient substitution, quality, and formulation on a final product.
- F. To organize and conduct an experimental food project and to write and present a scholarly paper describing the project.

IV. Expectations of Students:

- A. Students will wear clean lab/chef coats, hair cover, and closed-toe, flat shoes in labs. Jewelry, nail polish and artificial nails are prohibited.
- B. Students will participate in class discussions and group assignments. Students will come to class prepared with assigned readings completed.

- C. Students will participate in lab experiences.
- D. Students will demonstrate competency on individual and lab assignments, quizzes, and exams.
- E. Students will identify areas of interest and conduct studies which include recipe development, utilization of controls, reporting results and evaluation appropriate for their product.
- F. Students will submit their food product research as poster sessions for presentation at a professional meeting.

V. Course Content or Outline:

Unit I.	Food Components and Their Properties 1. Water 2. Protein 3. Carbohydrate 4. Fat 5. Additives	12 hrs
Unit II.	Dispersion Systems 1. Mixtures 2. Solutions 3. Colloids 4. Suspensions	8 hrs
Unit III.	Pigments and Flavor Components 1. Chlorophyll, Carotenoids, Flavonoids 2. Volatile Oils, Organic Acids 3. Effect of Storage 4. Additives and Enhancers	8 hrs
Unit IV	Enzymes in food Systems 1. Browning Reactions 2. Tenderizers 3. Leavening 4. Ripening 5. Crystallization	8 hrs.
Unit V.	Evaluation of Food Quality 1. Research Methodology 2. Sensory Evaluation 3. Color Techniques 4. Texture Evaluation	8 hrs

Unit V	Preservation	8 hrs
	1. Freezing	
	2. Canning	
	3. Dehydration	
	4. Freeze Drying, Radiation, Preservatives	
Unit VII	Research Project	8 hrs.
	Total	60 hrs

VI. Textbook(s) and/or Other Required Materials or Equipment:

Brown,A.(2004). Understanding Food: Principles and Preparation 2nd edition
Belmont, CA: Wadsworth/Thomson Learning.

VII. Basis for Student Evaluation:

Examinations:	45%
Laboratory Assignments:	35%
Research Projects & presentations	20%

The weight of the evaluation criteria may vary according to each instructor and will be communicated at the beginning of the course.

VIII. Grading Scale:

100-90%=	A
89-80% =	B
79-70% =	C
Below 69% =	F

IX. Academic Policy Statement:

Students will be expected to abide by the University Policy for Academic Honesty regarding plagiarism and academic honesty. Refer to:
<http://www6.semo.edu/judaffairs/code.html>.

X. Student with Disabilities Statement:

If a student has a special need addressed by the Americans with Disabilities Act (ADA) and requires materials in an alternative format, please notify the instructor at the beginning of the course. Reasonable efforts will be made to accommodate special needs.