SOUTHEAST MISSOURI STATE UNIVERSITY  
COURSE SYLLABUS

Department of: Human Environmental Studies  Course No. FN 320

Title of Course: Essentials of Food Science  Revision: Spring 2007

New: __________

I. Catalog Description and Credit Hours of Course:

Application of food science principles and their effects on product quality, recipe development, nutritive 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 and nail polish 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. Failure to attend and participate in entire lab will result in loss of points from lab grade.

D. Students will demonstrate competency on individual and lab assignments, quizzes, and exams.

E. Students will identify an area of interest and conduct a study which includes recipe development, utilization of controls, reporting results and evaluation appropriate for their product.

V. Course Content or Outline:

Unit I. Food Components and Their Properties 12 hrs.
   1. Water
   2. Protein
   3. Carbohydrate
   4. Fat
   5. Additives

Unit II. Dispersion Systems 8 hrs.
   1. Mixtures
   2. Solutions
   3. Colloids
   4. Suspensions

Unit III. Pigments and Flavor Components 8 hrs.
   1. Chlorophyll, Carotenoids, Flavonoids
   2. Volatile Oils, Organic Acids
   3. Effect of Storage
   4. Additives and Enhancers

Unit IV. Enzymes in Food Systems 8 hrs.
   1. Browning Reactions
   2. Tenderizers
   3. Leavening
   4. Ripening
   5. Crystallization

Unit V. Evaluation of Food Quality 8 hrs.
   1. Research Methodology
   2. Sensory Evaluation
   3. Color Techniques
   4. Texture Evaluation
Unit VI. 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:


VII. Basis for Student Evaluation:

Examinations: 45%
Laboratory Assignments: 35%
Research Project: 20%

VIII. Grading Scale:

100-90% = A
89-80% = B
79-70% = C
69-60% = D
Below 60% = 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.