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I. Catalog Description

FDNT 212: FOOD PROCESSING AND SAFETY (3 credits)

[REDACTED]

0 laboratory hours
3 credits
(3c-0l-3sh)

Pre-requisites: BIOL 241 and FDNT 212: iunior status

A study of current known effects of food processing techniques on the nutritional value and safety of foods.

Part II. Description of the Curriculum Change

Syllabus of Record (no change except for updated text and bibliography). Course pre-requisite catalog correction with BIOL 241 to replace BIOL 232.

I. Catalog Description

FDNT 447 Nutritional Aspects of Food Technology

3 lecture hours
0 laboratory hours

3 credits
(3c-0l-3sh)

Pre-requisites: BIOL 241 and FDNT 212; junior status

A study of current known effects of food processing techniques on the nutritional value and safety of foods.

II. Course Objectives

The student will

1. identify the nutritional advantages and disadvantages of the various

B. Effects of Food Processing on the Nutritive Value of Foods (9 hours)

1. Dairy Products

- a. Fluid milk products
- b. Canned milks
- c. Dried milks
- d. Cheese and other cultured dairy products
- e. Frozen milk products
- f. Imitation dairy products
- g. Nutraceuticals

2. Protein Foods

- a. Meats, poultry, fish
- b. Eggs

Legumes

3. Fruits and Vegetables

- a. Juice production
- b. Canning
- c. Freezing
- d. Dehydration
- e. Fermentation

4. Cereals

- a. Milling
- b. Ready-to-eat cereals
- c. Dietary Fiber

C. Food Toxicants and Contaminants (9 hours)

- 1. Microbial hazards in foods – molds, bacteria
- 2. Chemical hazards in foods – toxicants, metallic contaminants, industrial contaminants, pesticides
- 3. Protection of the food supply

D. Food Additives (9 hours)

- 1. GRAS (Generally Recognized as Safe) list
- 2. Scientific Evidence and safety status for each classification
 - a. Synthetic nutrients; fortification, enrichment, pharmacological
 - b. Colors and Flavorings

- c. Compounds that inhibit spoilage and microbial growth
- d. Chemicals preventing physical or chemical changes during storage
- e. Agents which emulsify or contribute other textural properties
- d. Synthetic sweeteners
- e. Bulking agents

E. Engineered/Imitation/Functional Foods (14 hours)

- 1. Palatability
- 2. Cost
- 3. Nutritive Value
- 4. Acceptability

III. Evaluation Methods

4. Participation in class discussions 25%

C. Mid-term examination 25%
 D. Final Exam 25%

Grading Scale To Be Used

A = 90 - 100%
 B = 80 - 89%
 C = 70 - 79%
 D = 60 - 69%
 F = 0 - 59%

IV. Required Textbooks

Required:

Henry, C. J. K. and Heppell, N. J. (Eds). (1998). *Nutritional aspects of food processing and ingredients*. Gaithersburg, MD: Aspen Publishers, Inc.

VI Special Resource Requirements

A field trip to a food processing facility in Pittsburgh. Students must provide their own transportation or pay a transportation fee

IV. Bibliography

Akoh, C.C. and Min, D.B. (Eds.). (2002). *Food lipids: Chemistry, nutrition, and biotechnology*. New York, NY: Marcel Dekker.

Foods of tomorrow. (April, 2000). *Food processing*, 41-50.

Gibson, G.R. and Williams, C. M. (Eds.). (2000). *Functional foods:*

Concept to product. Boca Raton, FL: CRC Press.

Hasler, C.M. (1998). Functional foods: Their role in disease prevention and health promotion. *Food Technology*, 52(11), 63-70.

Hollingsworth, P. (2000). Marketing trends fueling healthful foods success. *Food Technology*, 54(10). 53-59.

Igoe, R.S. and Hui, Y.H. (2001). *Dictionary of food ingredients*. Gaithersburg, Md: Aspen Publishers, Inc.

Mazza, G and Oomah, B.D., (Eds.). (2000). *Herbs, botanicals and teas*. Chicago, IL: Technomic Pub. Co.

Mazza, G. (1998). *Functional Foods: Biochemical and processing*. Chicago, IL: Technomic Pub. Co.

Pszczola, D. E., Katz, F., and Giese, J. (Eds.) (2000). Research trends in healthful foods. *Food Technology*, 54(10), 45-52.

Roller, S. and Jones, S.A. (Eds.). (1996). *Handbook of fat replacers*. Boca Raton, FL: CRC Press.

Sams, A.R. (Ed.). (2000). *Poultry meat processing*. Albany, GA: Lewis Publishers, Inc.

_____ (Ed.). (2001). *Food trends & the*

Sloan, A.E. (Ed.) (2000). Bigger, balanced, and very little bites. *Food Technology*, 54(11), 28.

Sloan, A. E. (Ed.). (2000). The top ten functional food trends. *Food Technology*, 54(4), 33-62.

Sloan, A. E. (Ed.). (1999). Top ten trends to watch and work on for the millennium. *Food Technology*, 53(8), 40-60.

Spiller, G.A. (Ed.). (1993). *CRC handbook of dietary fiber in human nutrition*. Boca Raton, FL: CRC Press.

Wilson, C.L., and Droby, S. (Eds.). (2000). *Microbial Food Contamination*. Boca Raton, FL: CRC Press.

2. A summary of the proposed revisions.

Current catalog course prerequisites: BIOL 232 and FDNT 212

New course prerequisite: BIOL 241 and FDNT 212

3. Justification/rationale for the revision

Syllabus of record pre-requisite is stated as BIOL 241 and FDNT 212. Catalog

pre-requisite was changed unofficially when BIOL 232 was taught as a specific course for HRIM and FDNT majors. BIOL 232 is no longer being offered, therefore we request that the pre-requisite be corrected in the catalog.

4. Old syllabus of record

I. Catalog Description

Study of the current known effects of the various food
~~processing techniques upon the nutritive value of~~

II. Course Objectives

~~A. Investigate the nutritive value of various food processing techniques~~

- D. Food Additives
 - 1. GRAS (Generally Recognized as Safe) List
 - 2. Why these substances are added; study of current expert opinion about the safety status of specific components within each class
- E. Engineered/Imitation Foods
 - 1. Palatability
 - 2. Cost
 - 3. Nutritive Value
 - 4. Acceptability

IV. Evaluation

A. Oral Research Reports, Written Essays, and Research Papers

- B. Undergraduate Students - oral presentation of team research project
- C. Graduate Students - present team projects orally and write a research paper

V. Text

Harris, Robert S. and Endel Karmas, Editors. Nutritional Evaluation of Food Processing, 2nd edition. AVI Publishing Company, Westport, Connecticut, 1975.

VI. Supplementary Material

Professional Journals Available in Stabley Library:

~~American Journal of Clinical Nutrition~~

FDA Consumer
Food Engineering
Food Processing
Food Science and Technology Abstracts
Food Technology
Journal of the American Dietetic Association
Journal of the American Medical Association