LSC Use Only
Number:
Submission Date: ______
Action-Date: ______

RECEIVED
APR 29 2002
LIBERAL STUDIES

02-21b

UWUCC USE Only
Number:
Submission Date: ______
Action-Date: UWUCC App 4/15/03
Senate App 4/29/03

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. **CONTACT**

Contact Person Dr. Joanne B. Steiner Phone 7-4440

Department Food and Nutrition Department

II. **PROPOSAL TYPE (Check All Appropriate Lines)**

______ **COURSE** ______
Suggested 20 character title

____ New Course* ______
Course Number and Full Title

XX Course Revision FDNT 447 Nutritional Aspects of Food Technology
Course Number and Full Title

____ Liberal Studies Approval + for new or existing course ______
Course Number and Full Title

____ Course Deletion ______
Course Number and Full Title

____ Number and/or Title Change ______
Old Number and/or Full Old Title

______
New Number and/or Full New Title

____ Course or Catalog Description Change ______
Course Number and Full Title

______ **PROGRAM:** ______ Major ______ Minor ______ Track

____ New Program* ______
Program Name

____ Program Revision* ______
Program Name

____ Program Deletion* ______
Program Name

____ Title Change ______
Old Program Name

______
New Program Name

III. **Approvals** (signatures and date)

Joanne B. Steiner
Department Curriculum Committee

Joanne B. Steiner
Department Chair

Mary C. Sucher 4/25/02
College Curriculum Committee

Carleen C. Zoni
College Dean

______
+Director of Liberal Studies (where applicable)

______
*Provost (where applicable)

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.

Part II. Description of the Curriculum Change

Syllabus of Record (no change except for updated text and bibliography). Course pre-requiste 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

A. investigate the nutritional advantages and disadvantages of the various methods of food processing and preservation.

B. describe the effects of harvesting, transportation, and storage on the nutrient composition of foods.

C. assess the effects of refining operations on the nutrients in foods.

D. research the current status, as stated by experts, of the safety and function of the various classes of food additives, and utilize this research in oral or written reports.

E. compare the palatability and cost of selected engineered or imitation foods, and examine the nutritive value and acceptability of these foods.

II. **Detailed Course Outline** (44 hours including final examination)

A. Principles of Food Processing and Preservation (3 hours)

1. Cold – refrigeration, freezing
2. Heat – blanching, pasteurization, canning
3. Dehydration – drying, freeze-drying
4. Irradiation

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
   c. 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

A.	Participation in class discussions	25%
B.	Term project	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.

Recommended:

Committee to Ensure Safe Food from Production to Consumption. (1998). *Ensuring safe food: From production to consumption.* Washington,DC: National Academy Press.

Heasman, M. and Mellentin, J. (2001). *The functional foods revolution: healthy people, healthy profits?.* London, UK: Earthscan Publications Ltd.

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.

Senauer, B., Asp, E., and Kinsey, J. (Eds.). (1991). *Food trends & the changing consumer.* St. Paul, MN: Eagan Press.

Si, J.X., Gazza, G. and Maguer, M. L. (Eds.). (2002). *Functional foods: Biochemical and processing aspects, Volume II.* Boca Raton, FL: CRC Press.

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**

   Atached. There are no changes except for a current textbook and bibliography.

FN 447/547 Nutritional Aspects of Food Technology 3 s.h.

I. Catalog Description

Study of the current known effects of the various food processing techniques upon the nutritional value and safety of foods. Prerequisites: FN 212 Nutrition and BI 241 Microbiology

II. Course Objectives

A. Investigate the nutritional advantages and disadvantages of the various methods of food processing and preservation.

B. Describe the effects of harvesting, transportation, and storage on the nutrient composition of foods.

C. Assess the effects of refining operations on the nutrients in foods.

D. Research the current status, as stated by experts, of the safety and function of the various classes of food additives, and utilize this research in oral or written reports.

E. Compare the palatability and cost of selected engineered or imitation foods, and examine the nutritive value and acceptability of these foods.

III. Course Outline

A. Principles of Food Processing and Preservation
   1. Cold - refrigeration, freezing
   2. Heat - blanching, pasteurization, canning
   3. Dehydration - drying, freeze-drying
   4. Irradiation

B. Effects of Food Processing on the Nutritive Value of Foods
   1. Dairy Products
   2. Protein Foods
   3. Fruits and Vegetables
   4. Cereals

C. Food Toxicants and Contaminants
   1. Microbial Hazards in Foods - molds, bacteria
   2. Chemical Hazards in Foods - toxins, metallic contaminants, industrial contaminants, pesticides
   3. How the food supply is protected

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 Exams, 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
Journal of Food Science
Journal of Environmental Health
Journal of Nutrition Education
New England Journal of Medicine
Nutrition Reviews
Nutrition Today