



University Senate TRANSMITTAL FORM

Senate Document #:	09-10-44
PCC ID #:	09061
Title:	Merge the B.S. Degree Programs in Dietetics, Food Science, and Nutritional Science into a single program titled "Nutrition and Food Science"
Presenter:	Alex Chen, Chair, Senate Programs, Curricula, and Courses Committee
Date of SEC Review:	April 20, 2010
Date of Senate Review:	April 29, 2010
Voting (highlight one):	<ol style="list-style-type: none"> 1. On resolutions or recommendations one by one, or 2. In a single vote 3. To endorse entire report
Statement of Issue:	<p>The College of Agriculture and Natural Resources and the Department of Nutrition and Food Science wish to merge the three B.S. programs in Dietetics, Food Science, and Nutritional Science into a single program titled "Nutrition and Food Science." Each of these areas will remain a specialization within the "Nutrition and Food Science" degree. The purpose of merging these three related programs within the same department is to reduce the overall administrative burden on faculty members of the Nutrition and Food Science department, who were unanimous in their support of this proposal. No changes in admissions or course/program requirements are planned, with the exception of a few minor details that have been approved by the Senate PCC Committee. The accreditation of the individual specializations will not be affected because the curriculum for each specialization will remain the same; it is only the degree that is changing its name. Currently enrolled students may finish the degree as it is currently named.</p> <p>The Senate PCC committee approved the proposal at its meeting on February 19, 2010. The Academic Planning Advisory Committee approved the proposal on February 8, 2010.</p>

Relevant Policy # & URL:	N/A
Recommendation:	The Senate Committee on Programs, Curricula, and Courses recommends that the Senate approve this merger.
Committee Work:	The Committee considered the proposal at its meeting on February 19, 2010. Leon Slaughter, the College's Associate Dean, and Lucy Yu, Acting Chair of Nutrition and Food Science, were present to answer questions. After discussion, the Committee voted unanimously to recommend the proposal.
Alternatives:	The Senate could decline to approve the proposed merger of programs.
Risks:	If the Senate does not approve the proposed program merger, the University will lose an opportunity to create efficiencies within the Nutrition and Food Science department.
Financial Implications:	There are no significant financial implications with this proposal, although there will be some savings from reduced faculty administrative responsibilities.
Further Approvals Required: <i>(*Important for PCC Items)</i>	If the Senate approves these proposals, they would still require further approval by the President and the Chancellor (with notification to the Maryland Higher Education Commission.)

**THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM/UNIT PROPOSAL**

ORIGINAL

• Please email the rest of the proposal as an MSWord attachment to pcc-submissions@umd.edu.

PCC LOG NO.

09001

• Please submit the signed form to the Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.

College/School: **Agriculture and Natural Resources**

Department/Program: **Nutrition and Food Science**

Type of Action (choose one):

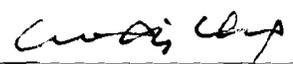
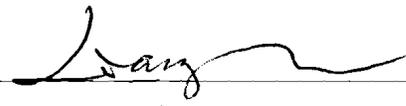
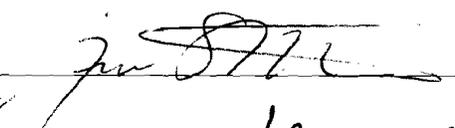
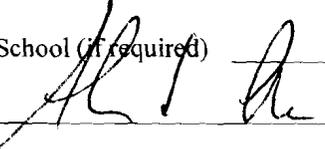
- Curriculum change (including informal specializations)
- Renaming of program or formal Area of Concentration*
- Addition/deletion of formal Area of Concentration
- Suspend/delete program
- New academic degree/award program*
- New Professional Studies award iteration
- New Minor
- Other

Italics indicate that the proposed program action must be presented to the full University Senate for consideration.

Summary of Proposed Action:

Merge three existing B.S. degree majors in Dietetics, Food Science, and Nutritional Science into a single program titled "Nutrition and Food Science" (NFSC) having three Options: 1) Dietetics, 2) Food Science, and 3) Nutritional Science. The three options will maintain the current academic requirements of the current separate programs. All undergraduate courses in the department already have the same prefix of NFSC. This is essentially a merger of three related programs within the same department to reduce the overall academic burden. No changes in admissions or course/program requirements are planned with the exception of a few minor details mentioned in the application below.

APPROVAL SIGNATURES - Please print name, sign, and date. Use additional lines for multi-unit programs.

1. Department Committee Chair **Wen-Hsing Cheng**  12-13-09
2. Department Chair **Mickey Parish**  12-20-2009
3. College/School PCC Chair  11/13/10
4. Dean  1-4-10
5. Dean of the Graduate School (if required)
6. Chair, Senate PCC  3-19-2010
7. University Senate Chair (if required)
8. Vice President for Academic Affairs & Provost

“Nutrition and Food Science” Undergraduate Program

This application is to merge the three related undergraduate programs of Dietetics, Food Science and Nutritional Science to create the single undergraduate degree of “Nutrition and Food Science” (NFSC) having three options in 1) Dietetics, 2) Food Science and 3) Nutritional Science. Separate B.S. degrees are currently offered by each program and are housed within the same department (Nutrition and Food Science). Maintaining options are necessary because both the Dietetics and Food Science programs are accredited/approved by outside professional societies. The American Dietetics Association accredits Dietetics programs, and the Institute of Food Technologists provides official approval for Food Science programs.

A second application to likewise merge the Food Science and Nutrition graduate degree programs into a single “Nutrition and Food Science” M.S. and Ph.D. has been filed separately.

COURSE REQUIREMENTS:

Base curriculum for all options (54 cr):

Original	Changes proposed
3 cr NFSC 100 (CORE LS) – Elements of Nutrition	Same
3 cr NFSC 112 (CORE LS) – Food: Science & Technology	Same
4 cr BSCI 105 (CORE LL) – Principles of Biology I	Same
4 cr BSCI 223 (CORE LL) – General Microbiology	Same
3 cr CHEM 131 (CORE PL) – General Chemistry I	Same
1 cr CHEM 132 – General Chemistry I Laboratory	Same
3 cr CHEM 231– Organic Chemistry I	Same
1 cr CHEM 232 – Organic Chemistry I Laboratory	Same
3 cr CHEM 241– Organic Chemistry II	Same
1 cr CHEM 242 – Organic Chemistry II Laboratory	Same
2 cr CHEM 271 – General Chemistry and Energetics	Same
2 cr CHEM 272 – General Bioanalytical Chemistry Laboratory	Same
3 cr ENGL 101 (CORE WRITING) – Introduction to Writing	Same
3 cr ENGL 391 OR 393 (CORE PROF WRITING) – Adv. Composition, OR Technical Writing	3 cr ENGL 391 OR 393 (CORE PROF WRITING) – Adv. Composition, OR Technical Writing (ENGL 391 or 393 is required and will not be waived by a grade of “A” in ENGL 101)
3 cr MATH 113 (CORE FUND MATH) – College Algebra with Applications	Same
3 cr CORE Social or Political History (SH)	Same
3 cr CORE Literature (HL)	Same
3 cr CORE Diversity	Same
3 cr CORE Advanced Studies (AS)	Same
3 cr CORE History or Theory of Art (HA)	Same

Additional course requirements for option in Dietetics (66 cr):

Original	Changes proposed
<p>4 cr NFSC 250 – Science of Food 3 cr NFSC 315 – Nutrition During the Lifecycle 5 cr NFSC 350 – Foodservice Operations 3 cr NFSC 380 – Nutritional Assessment 4 cr NFSC 440 – Advanced Human Nutrition 4 cr NFSC 460 – Medical Nutrition Therapy 3 cr NFSC 470 – Community Nutrition 3 cr NFSC 491 – Issues and Problems in Dietetics (CORE Capstone) 3 cr BCHM 461 – Biochemistry I 3 cr BCHM 462 – Biochemistry II 3 cr BMGT 360 – Human Resource Management 3 cr BMGT 364 – Management and Organization Theory 4 cr BSCI 330 – Cell Biology and Physiology 4 cr BSCI 440 – Mammalian Physiology 3 cr EDMS 451 OR BIOM 301 – Intro to Educational Statistics, OR Biometrics 3 cr PSYC 100 (CORE SB) – Introduction to Psychology 3 cr SOCY 100 (CORE SB) – Introduction to Sociology 3 cr CORE HL/HA or HO (COMM 200 strongly recommended)</p>	<p>Will be eliminated Same Same Same Same Same Same Same Same List under Restricted Elective Same Same Same Same Same Same Same</p>
<p>2 cr Elective</p>	<p>Add 3 cr NFSC 421 – Food Chemistry Add 3 cr NFSC 430 – Food Microbiology</p> <p>3 cr Elective</p>
<p>3 cr Restricted Elective NFSC 450-Food & Nutrient Analyses; EDCP 310-Peer Counseling Theory and Skills; BSCI 222-Principles of Genetics; BSCI 422-Principles of Immunology; BMGT 220-Principles of Accounting I; HLTH 230-Introduction to Health Behavior; COMM200 Advanced Public Speaking (also meets HO requirement); NFSC498D-Diet and Cancer Prevention; KNES360-Physiology of Exercise; NFSC425-International Nutrition</p>	<p>3 cr Restricted Elective (NFSC 410, NFSC 425, NFSC 450, BMGT 220, BSCI 222, BSCI 422, COMM 200, EDCP 310, KNES 360, BMGT360, AREC365, ENST333, AREC250, or alternate course by approval of advisor)</p>

Additional course requirements for option in Food Science (66 cr):

Original	Changes proposed
4 cr NFSC 250 – Science of Food	Will be eliminated
1 cr NFSC 398 – Food Science Seminar	Same
4 cr NFSC 412 – Food Processing Technology	Same
4 cr NFSC 414 – Mechanics of Food Processing	Same
3 cr NFSC 421 – Food Chemistry lecture	Same
3 cr NFSC 422 – Food Product Research & Development	Same
3 cr NFSC 423 – Food Chemistry lab	Same
3 cr NFSC 430 – Food Microbiology lecture	Same
3 cr NFSC 431 – Food Quality Control	Same
3 cr NFSC 434 – Food Microbiology lab	Same
3 cr NFSC 450 – Food and Nutrient Analysis	Same
3 cr BCHM 463 – Biochemistry of Physiology	Same
3 cr BIOM 301 – Introduction to Biometrics	Same
3 cr COMM 200 (CORE HO) – Critical Thinking and Speaking	Same
3 cr MATH 220 (CORE MS) – Elementary Calculus I	Same
3 cr MATH 221 (CORE MS) – Elementary Calculus II	Same
4 cr PHYS 121 (CORE PL) – Fundamentals of Physics I	Same
6 cr CORE Behavioral and Social Sciences (SB)	Same
3 cr Elective	Change to 8 cr Elective
3 cr Restricted Elective BMGT 360 –Human Resource Management; BMGT 362-Labor Relations; BMGT 364-Management and Organization Theory	3 cr Restricted Elective (NFSC 410, NFSC 425, NFSC 450, BMGT 220, BSCI 222, BSCI 422, COMM 200, EDCP 310, KNES 360, BMGT360, BMGT 364, AREC365, AREC250, ENST333, or alternate course by approval of advisor)

Additional course requirements for option in Nutritional Science (66 cr):

Original	Changes proposed
3 cr NFSC 315 – Nutrition During the Lifecycle	Same
3 cr NFSC 421 – Food Chemistry lecture	Same
4 cr NFSC 440 – Advanced Human Nutrition	Same
3 cr NFSC 450 – Food and Nutrient Analysis	Same
3 cr BCHM 461 – Biochemistry I	Same

3 cr BCHM 462 – Biochemistry II	Same
2 cr BCHM 464 – Biochemistry Lab	Same
3 cr BCHM 465 – Biochemistry III	Same
3 cr BIOM 301 – Introduction to Biometrics	Same
4 cr BSCI 222 – Principles of Genetics	Same
4 cr BSCI 330 – Cell Biology and Physiology	Same
4 cr BSCI 440 – Mammalian Physiology	Same
3 cr MATH 220 (CORE MS) – Elementary Calculus I	Same
4 cr PHYS 121 (CORE PL) – Fundamentals of Physics I	Same
6 cr CORE Behavioral and Social Sciences (SB)	Same
3 cr CORE Literature, Humanities or Art (HL, HO or HA)	Same
3 cr CORE Advanced Studies (AS)	Same
5 cr Elective	Same
3 cr Restricted Elective NFSC 460-Medical Nutrition Therapy; BSCI 447-General Endocrinology; BSCI 430-Developmental Biology; SCI 410-Molecular Genetics; BSCI 413-Recombinant DNA; BSCI 422-General Immunology	3 cr Restricted Elective (NFSC 380, NFSC 410, NFSC 460, NFSC 470, BSCI 410, BSCI 422, BSCI 430, BSCI 447, or alternate course by approval of advisor)

RESOURCES

No new resources are needed. The proposed merger is for three small but robust on-going programs and is for administrative purposes only. No significant additional costs or savings from this merger are expected.

NFSC UNDERGRADUATE COURSES

Courses for Deletion from Approved Courses (Separate PCC documents will be filed with this application.)

NFSC 250 Science of Food (4)
NFSC 403 Medicinal and Poisonous Plants (2)

Remaining Approved Courses in the Undergraduate Catalog (No change in the following courses)

NFSC 100 Elements of Nutrition (3)
NFSC 112 Food: Science and Technology (3)
NFSC 315 Nutrition During the Life Cycle (3)
NFSC 350 Foodservice Operations (5)
NFSC 380 Methods of Nutritional Assessment (3)
NFSC 386 Experiential Learning (3-6)
NFSC 388 Honors Thesis Research (3-6)
NFSC 398 Seminar (1)
NFSC 399 Special Problems in Food Science (1-3)
NFSC 410 Nutritional Genomics (3)
NFSC 412 Food Processing Technology (4)
NFSC 414 Mechanics of Food Processing (4)

NFSC 421 Food Chemistry (3)
NFSC 422 Food Product Research and Development (3)
NFSC 423 Food Chemistry Laboratory (3)
NFSC 425 International Nutrition (3)
NFSC 430 Food Microbiology (3)
NFSC 431 Food Quality Control (4)
NFSC 434 Food Microbiology Laboratory (3)
NFSC 440 Advanced Human Nutrition (4)
NFSC 450 Food and Nutrient Analysis (3)
NFSC 460 Medical Nutrition Therapy (4)
NFSC 468 Practicum in Nutrition (1-6)
NFSC 470 Community Nutrition (3)
NFSC 490 Special Problems in Nutrition (2-3)
NFSC 491 Issues and Problems in Dietetics (3)
NFSC 498 Selected Topics (1-3)

LEARNING OUTCOMES ASSESSMENTS: The current LOA programs for Dietetics, Food Science and Nutritional Science undergraduate programs will be continued for the three options. See appendix for 2009-10 LOA plans with program title changes to reflect the merger.

**APPENDIX: Nutrition and Food Science Proposal
Undergraduate Programs Merger**

Learning Outcome Assessment Plans

B.S. in Nutrition and Food Science (Dietetics Option)

B.S. in Nutrition and Food Science (Food Science Option)

B.S. in Nutrition and Food Science (Nutritional Science Option)



ASSESSMENT METHODS, CRITERIA & RESULTS B.S. in Nutrition and Food Science (Dietetics Option)
(Program of Study / Major / Degree Level, etc.)

For Time Period: Fall 2009 and Spring 2010

Program Contact: Nancy Brenowitz Katz, MS, RD, LD Phone: 5-4532 E-mail: nbkatz@umd.edu

Date submitted to Academic Unit Head: September 28, 2009

Student Learning Outcomes Assessments	Assessment Methods & Criteria (data will be evaluated in Spring, 2008)	Assessment Results	Impact of Results
<p>1. Graduates of the undergraduate program in Dietetics will learn and be able to apply the foundation knowledge and skill statements outline by the American Dietetic Association as necessary for entry-level Dietetics practice.</p>	<p>Scores on Learning Outcomes Assessment questionnaire completed by all students upon graduation (part of Exit Interview): $\geq 80\%$ of students will have an average score of ≤ 2 (scale of 1-5, strongly agree to strongly disagree)</p> <p>Successful completion of Dietetic Internship Program: $\geq 80\%$ of graduates will successfully complete a Dietetic Internship program.</p> <p>Scores on Registration Exam for Dietitians: $\geq 80\%$ of students will pass exam on their first try</p>		
<p>2. Graduates of the undergraduate program in Dietetics will demonstrate an understanding of nutrition and will apply this knowledge to the practice of Dietetics.</p>	<p>Performance on Clinical Case Study Assignment: $\geq 80\%$ of students will obtain a score of B or better on a Clinical Case Study assignment required in NFSC491: Issues and Problems in Dietetics.</p>		

<p>3. Graduates of the undergraduate program in Dietetics will demonstrate critical thinking, teamwork and communication skills.</p>	<p>Performance on Nutrition Education Assignment: ≥80% of students will obtain a score of B or better on a Nutrition Education assignment required in NFSC491: Issues and Problems in Dietetics.</p>		
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ASSESSMENT METHODS, CRITERIA & RESULTS B.S. in Nutrition and Food Science (Food Science Option)
(Program of Study / Major / Degree Level, etc.)

For Time Period: Fall 2009 and Spring 2010

Program Contact: Y. Martin Lo Phone: ext. 5-4509 E-mail: ymlo@umd.edu

Date submitted to Academic Unit Head: Sept 28, 2009

Student Learning Outcomes Assessments	Assessment Methods & Criteria	Assessment Results	Impact of Results
<p>1. Students will demonstrate competency in the chemistry underlying the properties and reactions of various food components.</p>	<p>Measure: Understanding the effects of processing technologies on the chemical composition and nutritional value of food. Analysis every three years. First analysis in 2009.</p> <p>Criteria: 75% of students should receive 80 points or better out of 100 points based on a rubric developed for a semester-long, team-based term project “Effects of Processing Technologies on Food Quality” in NFSC 112 Food: Science and Technology.</p>		
<p>2. Students will demonstrate competency in food safety and microbiology knowledge as well as laboratory skills.</p>	<p>Measure: Correctly use appropriate laboratory skills and knowledge to analyze and identify the important microorganisms in foods, the conditions under which they grow, and food preservation methods. Analysis every three years.</p> <p>Criteria: 75% of students should receive a B or better on the Identification of Bacteria Unknowns assignment based on a specific rubric that requires students to use wide spectrum of technologies to identify the bacteria present in the unknown samples, in the NFSC 434 Food</p>		

	Microbiology Laboratory class.		
3. Students will demonstrate competency in integrating laboratory skills into analysis of food.	<p>Measure: Thoughtfully apply laboratory procedures in the analyses of nutrients and foods, and interpret results.</p> <p>Criteria: 75% of students will demonstrate an understanding and proper application of laboratory techniques as determined by the rubric developed by instructor to evaluate lab practicals and lab reports (NFSC450).</p>		
4. Students will demonstrate competency in various technologies involved in food processing.	<p>Measure: Correctly use appropriate processing steps and knowledge to analyze and identify the critical elements involved in food processing, the quality and safety of the finished products, and product shelf-life. Analysis every three years.</p> <p>Criteria: 75% of students should receive a B or better on the term project assignment based on a specific rubric that requires students to use wide spectrum of technologies to develop a processing scheme for a specific product assigned by the instructor in the NFSC 412 Food Processing Technology class.</p>		
5. Students will be able to integrate and apply Food Science principles in practical, real-world situations and problems.	<p>Measure: Thoroughly apply laboratory procedures and processing steps to work effectively as a team to design, develop, analyze, and report on a novel food product that meets consumer demands and safety regulations. Analysis every three years.</p> <p>Criteria: 75% of students should receive a B or better based on the product development criteria (rubric) designed for the semester-long final report on the product they develop in the NFSC 422 Food Product Research and Development class.</p>		



ASSESSMENT METHODS, CRITERIA & RESULTS B.S. degree in Nutrition and Food Science (Nutritional Science Option)
(Program of Study / Major / Degree Level, etc.)

For Time Period: Fall 2009 and Spring 2010

Program Contact: Thom Castonguay Phone: ext. 5-4503 E-mail: twc@umd.edu

Date submitted to Academic Unit Head: Sept 28, 2009

Student Learning Outcomes Assessments	Assessment Methods & Criteria	Assessment Results	Impact of Results
1. Students will demonstrate competency in the chemistry underlying the properties and reactions of various food components.	<p>Measure: Understanding the effects of processing technologies on the chemical composition and nutritional value of food.</p> <p>Criteria: 75% of students should receive 80 points or better out of 100 points based on a rubric developed for a semester-long, team-based term project “Effects of Processing Technologies on Food Quality” in NFSC 112 Food: Science and Technology.</p>		
2. Nutrition Science majors will demonstrate the ability to utilize and integrate knowledge acquired in the biochemical and physiological science courses into understanding concepts underlying nutrition science.	<p>Measure: Understand nutrient needs within the human life cycle.</p> <p>Criteria: 80% of students will use an effective strategy to solve case studies of nutrient needs within the life cycle in NFSC315 and will provide clear written explanation based on rubric developed by the instructor.</p>		
3. Nutrition Science majors will demonstrate ability to integrate laboratory skills developed through	<p>Measure: Thoughtfully apply laboratory procedures in the analyses of nutrients and foods,</p>		

interdisciplinary work into analysis of nutrients in food.	and interpret results. Criteria: 80% of students will demonstrate an understanding and proper application of laboratory techniques as determined by the rubric developed by instructor to evaluate lab practicals and lab reports (NFSC450).		
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