

**MICHIGAN STATE  
UNIVERSITY**

April 9, 2012

**MEMORANDUM**

**TO:** Dr. Douglas Estry, Associate Provost for Undergraduate Education  
and Dean of Undergraduate Studies

**FROM:** Dr. Linda O. Stanford, Associate Provost for Academic Services

**RE:** Request for a New Coordinate Major in Lyman Briggs College – Food  
Science

For Transmittal to the University Committee on Undergraduate Studies

The request referenced above is being sent to the University Committee on Undergraduate Studies in accordance with the *Bylaws for Academic Governance*, 4.4.

Response Requested:

Please ask the committee to consider the request referenced above and provide consultative commentary. Please mail the related materials referenced under the heading Attachments at the end of this memorandum to the committee members.

After receiving the committee's consultative response, the Provost will make a determination to forward or not to forward the request to the University Committee on Curriculum for its approval of curriculum and degree requirements.

If you have any questions, please call Joy Speas, University Curriculum Administrator, at 5-8420.

Thank you.

Attachments:

1. Request to Establish a New Academic Program form dated March 15, 2012: Coordinate Major in Food Science, Lyman Briggs College and attachments.



**University  
Curriculum and  
Catalog**

176 Administration Bldg.  
East Lansing, MI  
48824-1046

517-355-8420  
Fax: 517-353-1935

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**LYMAN BRIGGS COLLEGE**

1. Request to recognize the **Food Science** major leading to the Bachelor of Science degree in the Department of Food Science and Human Nutrition as a **Coordinate Major in Lyman Briggs College**.

Effective Spring 2013.

<b>View a Program</b>		<b>Main Menu</b>
Joy Speas, RO	Thursday, 3/15/2012	
<b>Program Name: LB Food Science</b> <b>Degree: BS Sequence Number: 1</b>	Program Request ID: 2095	
<b>Effective Dates: Summer 2012 - Open Status: Interim Initial Action: New</b>		
<b>Requested Date: 11/3/2011 4:47:35 PM</b>		
<p><b>1. Department/School/College:</b> 28546 .... Lyman Briggs College</p> <p><b>2. Name of Program:</b> LB Food Science</p> <p><b>3. Name of Degree:</b> BS</p> <p><b>4. Type of Program:</b> Major</p> <p><b>5. Effective Start Semester:</b> Summer 2012</p> <p><b>6. Target student audience for the program:</b> LBC Students</p> <p><b>7. Enrollment:</b> <b>What is the expected enrollment per year: 15</b> <b>What is the minimum enrollment acceptable: 1</b></p> <p><b>8. Source of budget for the program:</b> To align academic planning and curricular change, ALL requests for NEW funds must be included in the College's annual planning letter. Provost approval of new funds and the effective date for the new program must align. If funding is not approved, then the program request will not be forwarded to Faculty Senate.  Internal reallocation  If new funds, was this request included in the College's annual planning letter? Indicate yes or no. If no, then this is a department or college fund reallocation (If the program is implemented, no additional resources are required.).</p> <p><b>9. Projected Costs as compared to other programs in unit:</b> Same</p> <p><b>10. Staff requirement:</b> How many additional staff will be required: 0  Who will provide the primary instruction. Describe any external linkages(industry, government, etc.):</p>		

Existing MSU faculty in existing MSU courses.

**11. Will additional equipment be required:**

Approximate cost: 0

Source of funding:

**12. Will additional library materials be required:**

Approximate cost: 0

Source of funding: None

**13. Will additional space be required:**

Type:

Approximate amount: None

**14. If the program requirements contain a named concentration, do you wish for the concentration to be noted on the student's transcript?:**

No

**15. Detailed Description:**

**UNIVERSITY REQUIREMENTS (20 credits)**

		<u>Credits</u>
Tier I Writing	LB 133 - Introduction to History, Philosophy, and Sociology of Science	4
Tier II Writing	<i>Satisfied by completing the Lyman Briggs College History, Philosophy and Sociology of Science and Senior requirements listed below.</i>	
IAH 201-210*	Integrative Studies Arts and Humanities (IAH)	4
IAH 211-241*	Integrative Studies Arts and Humanities (IAH)	4
ISS 200-level course*	Integrative Studies in Social, Behavioral & Economic Sciences (ISS)	4
ISS 300-level course*	Integrative Studies in Social, Behavioral & Economic Sciences (ISS)	4

\*National, International, & Multicultural Diversity - Students must include at least one "N" course and one "I" course in their Integrative Studies programs. A "D" course may meet either an "N" or an "I" requirement, but not both.

Mathematics, Biological and Physical Sciences

Satisfied by the Lyman Briggs College requirements in Mathematics, Biological and Physical Sciences (see below).

**LYMAN BRIGGS COLLEGE REQUIREMENTS (36-44 credits)**

*Biological Sciences (9-10 cr.)*

Complete ONE of the following groups of courses

LB 144, 145	Biology I: Organismal Biology, Biology II: Cellular and Molecular Biology	9
BS 161, 162, 171, 172	Cell and Molecular Biology, Organismal and Population Biology, Cell and Molecular Biology Laboratory, Organismal and Population Biology Laboratory	10
BS 181H, 191H, 182H, 192H	Honors Cell and Molecular Biology, Honors Cell and Molecular Biology Laboratory, Honors Organismal and Population Biology, Honors Organismal and Population Biology Laboratory	10
<u>Chemistry (8-10 cr.)</u>		
Complete ONE of the following groups of courses		
LB 171, 171L, 172, 172L	Principles of Chemistry I, Introductory Chemistry Laboratory I, Principles of Chemistry II, and Principles of Chemistry II - Reactivity Laboratory	9
LB 171, 171L, CEM 143	Principles of Chemistry I, Introductory Chemistry Laboratory I, Survey of Organic Chemistry	9
LB 171, 171L, CEM 251	Principles of Chemistry I, Introductory Chemistry Laboratory I, Organic Chemistry I	8
CEM 141, 142, 161	General Chemistry, General and Inorganic Chemistry, Chemistry Laboratory I	9
CEM 141, 143, 161	General Chemistry, Survey of Organic Chemistry, Chemistry Laboratory I	9
CEM 141, 161, 251	General Chemistry, Chemistry Laboratory I, Organic Chemistry I	8
CEM 151, 152, 161	General and Descriptive Chemistry, Principles of Chemistry, Chemistry Laboratory I	9
CEM 181H, 182H, 185H	Honors Chemistry I, Honors Chemistry II, Honors Chemistry Laboratory I	10
<u>Physics (6-8 cr.)</u>		
Complete ONE of the following groups of courses		
LB 273, 274	Physics I, Physics II	8
PHY 183, 184	Physics for Scientists and Engineers I, Physics for Scientists and Engineers II	8
PHY 231, 232, 251, 252	Introductory Physics I, Introductory Physics II, Introductory Physics Laboratory I, Introductory Physics Laboratory II	8
PHY 183B, 184B	Physics for Scientists and Engineers I, Physics for Scientists and Engineers II	8
PHY 193H, 294H	Honors Physics I-Mechanics, Honors Physics II-Electromagnetism	6
<u>Mathematics (6-8 cr.)</u>		
Complete ONE of the following groups of courses		
LB 118, 119	Calculus I, Calculus II	8
LB 118, STT 231	Calculus I, Statistics for Scientists	7
MTH 132, STT 231	Calculus I, Statistics for Scientists	6
MTH 132, 133	Calculus I, Calculus II	7
<u>History, Philosophy &amp; Sociology of Science (7-8 cr.)</u>		
Complete TWO of the following courses		
LB 330	Topics in History, Philosophy, and Sociology of Science (W)	4
LB 331	Literature and Science (W)	4
LB 332	Technology and Culture (W)	4
LB 333	Topics in History of Science (W)	4
LB 334	Science, Technology, and Public Policy (W)	4
LB 335	The Natural Environment: Perceptions and Practices (W)	4
LB 336	Gender, Science, Technology (W)	4
LB 355	Philosophy of Technology (W)	4

LB 490E	Advanced Directed Study--History, Philosophy, Sociology of Science (W)	3-4
ENG 473A	Literature and Medicine	3
HST 425	American and European Health Care since 1800	4
SOC 368	Science, Technology and Society	3
<i>Senior Seminar (4 cr.)</i>		
LB 492	Senior Seminar (W)	4

Students may consult with a Lyman Briggs advisor regarding a possible substitution for the Lyman Briggs Senior Seminar for this major.

### **MAJOR REQUIREMENTS (66-69 cr.)**

Complete ALL of the following courses (33 cr.)

BE	429	Fundamentals of Food Engineering	3
FSC	211	Principles of Food Science	3
FSC	325	Food Processing: Unit Operations	3
FSC	401	Food Chemistry	3
FSC	402	Food Chemistry Lab	1
FSC	410	Sensory Analysis and Consumer Research	3
FSC	440	Food Microbiology	3
FSC	441	Food Microbiology Lab	2
FSC	455	Food aAnalysis	3
FSC	470	Integrated Approaches to Food Product Development	3
HNF	260	Principles of Human Nutrition	3
MMG	301	Introductory Microbiology	3

Complete TWO of the following courses (6 cr.)

FSC	430	Food Processing: Fruits & Vegetables	3
FSC	431	Food Processing: Cereals	3
FSC	432	Food Processing: Dairy Foods	3
FSC	433	Food Processing: Muscle Foods	3

Complete ONE of the following courses (3 cr.)

ACR	205	Agriculture and Natural Resources Communication Theory and Practice	3
COM	100	Human Communication	3
COM	225	An Introduction to Interpersonal Communication	3

Complete ONE of the following FOUR TRACKS:

- 1) Basic Science (25 cr.)

Complete ALL of the courses (16 cr.)

CEM	251	Organic Chemistry I	3
CEM	252	Organic Chemistry II	3
CEM	255	Organic Chemistry Laboratory	2
BMB	401	Biochemistry	4
STT	201	Statistical Methods	4

Complete NINE CREDITS from the following courses (9 cr.)

ANS	407	Food and Animal Toxicology	3
ANS	417	Topics in Toxicology	1
CEM	262	Quantitative Analysis	3
CEM	333	Instrumental Methods and Applications	3
CEM	383	Physical Chemistry I	3
FSC	342	Food Safety and HACCP Program	3
FSC	421	Food Laws and Regulations	3
FSC	423	Functional Foods and Human Health	3
MMG	409	Eukaryotic Biology	3
MMG	425	Microbial Ecology	3
MMG	431	Microbial Genetics	3
MMG	445	Basic Biotechnology	3
MMG	451	Immunology	3
PHM	350	Human Pharmacology	3
PHM	450	Chemical Toxicology	3

## 2) Business and Industry (23 cr.)

Complete ALL of the following courses (17 cr.)

BMB	200	Basic Biochemistry	4
CEM	143	Survey of Organic Chemistry	4
ACC	230	Survey of Accounting Concepts	3
MKT	327	Introduction to Marketing	3

STT	315	Introduction to Probability and Statistics for Business	3
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Complete TWO of the following courses (6 cr.)

ABM	100	Decision-making Agri-Food System	3
ABM	222	Agribusiness and Food Industry Sales	3
ABM	435	Financial Mgt in Agri-Food System	3
or FI	311	Financial Management	3
FIM	220	Food Product Marketing	3
FIM	335	Food Marketing Management	3
MKT	302	Consumer & Orgz Buyer Behavior	3

## 3) Packaging (26 cr.)

Complete ALL of the following courses (26 cr.)

BMB	200	Basic Biochemistry	4
CEM	143	Survey of organic Chemistry	4
PKG	101	Principles of Packaging	3

PKG	221	Packaging with Glass and Metal	3
PKG	322	Packaging with Paper/Paperboard	4
PKG	323	Packaging with Plastics	4
STT	201	Statistical Methods	4

## 4) Technology (23 cr.)

Complete ALL of the following courses (14 cr.)

BMB	200	Basic Biochemistry	4
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CEM	143	Survey of Organic Chemistry	4
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FSC	420	Quality Assurance	2
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STT	201	Statistical Methods	4
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Complete NINE CREDITS from the following courses (9 cr.)

FSC	342	Food Safety and HACCP Program	3
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FSC	421	Food Laws & Regulations	3
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FSC	430	Food Processing: Fruits & Vegetables	3
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FSC	431	Food Processing: Cereals	3
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FSC	432	Food Processing: Dairy Foods	3
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FSC	433	Food Processing: Muscle Foods	3
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HB	100	Hospitality Management	2
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HB	265	Food Management: Safety and Nutrition	3
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HB	267	Management of Food/Beverage Systems	3
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HNF	300	Experimental Approaches to Food	4
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**16. Are there admissions requirements for this program?:**

Grade or grade-point average requirements and if so in which course(s), portfolio requirement, audition, essay, etc. If there are not admission requirements other than those required by the University policy indicate "none".

None.

**DEPARTMENT LEVEL APPROVAL STATUS**

Approved: Lyman Briggs College  
2/28/2012 11:20:54 AM by Kelly Millenbah for Elizabeth H. Simmons, Dean

**SIGNOFFS STATUS**

No Response by: College of Agriculture and Natural Resources

Signed Off: Department of Food Science and Human Nutrition  
3/8/2012 9:55:59 AM by Frederik Derksen for Frederik Derksen, Chairperson



**COLLEGE LEVEL APPROVAL STATUS**

Approved: Lyman Briggs College  
3/15/2012 2:47:00 PM by Kelly Millenbah for Elizabeth H. Simmons, Dean

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**Speas, Joy**

**From:** Brandenburg, Richard <branden4@anr.msu.edu>  
**Sent:** Wednesday, March 21, 2012 10:36 AM  
**To:** Speas, Joy  
**Cc:** Millenbah, Kelly  
**Subject:** LB Food Science

**Importance:** High

Joy,  
I would like to sign-off on the Lyman Briggs Food Science major, but it's not on my screen. What to do?  
Thanks.  
Rick

**DEPARTMENT LEVEL APPROVAL STATUS**

Approved: Lyman Briggs College  
2/28/2012 11:20:54 AM by Kelly Millenbah for Elizabeth H. Simmons, Dean

**SIGNOFFS STATUS**

No Response by: College of Agriculture and Natural Resources

Signed Off: Department of Food Science and Human Nutrition  
3/8/2012 9:55:59 AM by Frederik Derksen for Frederik Derksen, Chairperson

**COLLEGE LEVEL APPROVAL STATUS**

Approved: Lyman Briggs College  
3/15/2012 2:47:00 PM by Kelly Millenbah for Elizabeth H. Simmons, Dean

**Academic Programs - Signoffs and Approvals List**

[Main Menu](#)

Richard Brandenburg, Agriculture and Natural Resources

Wednesday, 3/21/2012

To signoff or approve a program, click on "Action" in the corresponding row.

**LEGEND:**

- ✓ - action approved
- ? - waiting for action
- - action not needed or not needed yet
- ~ - not all additional reviews received

"Program Changed" in the Primary Dept column indicates that a program has been changed after reviews were received. The Primary Dept must return to the Pending Request program form and review/recreate any additional approvals/signoffs.

Program	Status	Effective Dates	Approval Start Date	Primary Dept	Non-Primary Coll or Dept (Jointly Administered)	Additional Dept Signoffs
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<u>Interior Design BA</u>	Request Change	FS11 - Open	12/9/2010	Action	?	-
<u>Packaging Engineering BS</u>	Request New	FS13 - Open	3/7/2012	Action	-	-
<u>Political Economy SPCU</u>	Pending Change	FS12 - Open	3/14/2012	✓	-	-
<u>Specialization in Beverage Science and Technology SPCU</u>	Request New	FS12 - Open	1/20/2012	Action	?	-

Richard Brandenburg, Ph.D.  
Associate Dean Academic Programs  
College of Agriculture and Natural Resources  
121 Agriculture Hall  
Michigan State University  
517-355-0234

**MICHIGAN STATE  
UNIVERSITY**

## UNDERGRADUATE PROGRAM

The Lyman Briggs College program leads to the Bachelor of Science Degree.

### Requirements for the Bachelor of Science Degree in Lyman Briggs College

1. The University requirements for bachelor's degrees as described in the *Undergraduate Education* section of this University catalog; 120 credits, including general elective credits, are required for the Bachelor of Science degree in Lyman Briggs College.

Students who are enrolled in the College of Natural Science may complete the alternative track to Integrative Studies in Biological and Physical Sciences that is described in item 1. under the heading *Graduation Requirements* in the College statement. Certain courses referenced in requirement 3. below are equivalent to courses in the alternative track and, therefore, may be used to satisfy the alternative track.

The completion of the Lyman Briggs College mathematics and statistics requirement [referenced in item 3.c.(4) below] may also satisfy the University mathematics requirement.

The completion of Lyman Briggs 133 or one of the approved alternatives [referenced in requirement 3.a.(5)(a) below] may also be counted toward the University Tier I writing requirement.

The University's Tier II writing requirement for the Major and Coordinate Majors in Lyman Briggs College is met by completing Lyman Briggs College 492 and one of the following courses: English 473A; History 425; Lyman Briggs College 332, 333, 334, 335, 336, 355. Those courses are referenced in items 3. a. (5) and 3. a. (6) below.

2. The requirements of Lyman Briggs College for the Bachelor of Science degree, referenced in item 3. a. below.

The credits earned in certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate.

3. The following requirements of Lyman Briggs College for the Bachelor of Science degree:

	CREDITS
a. CORE PROGRAM .....	46 to 55

- (1) **Biology:** One of the following groups of courses (8 to 10 credits):
  - (a) Lyman Briggs 144, 145.
  - (b) Biological Science 181H, 191H, 182H, 192H.
  - (c) Biological Science 161, 171, 162, 172.
- (2) **Chemistry:** One of the following groups of courses (8 to 10 credits):
  - (a) Lyman Briggs 171, 171L, 172, 172L.
  - (b) Lyman Briggs 171, 171L; Chemistry 143
  - (c) Lyman Briggs 171, 171L; Chemistry 251.
  - (d) Chemistry 141, 142, 161.
  - (e) Chemistry 141, 143, 161.
  - (f) Chemistry 141, 161, 251.
  - (g) Chemistry 151, 152, 161.
  - (h) Chemistry 181H, 182H, 185H.
- (3) **Mathematics and Statistics:** One of the following groups of courses (6 to 8 credits):
  - (a) Lyman Briggs 118, 119.
  - (b) Lyman Briggs 118; Statistics and Probability 231.
  - (c) Mathematics 132, 133.
  - (d) Mathematics 132; Statistics and Probability 231.
  - (e) Mathematics 152H, 153H.
- (4) **Physics:** One of the following groups of courses (6 to 8 credits):
  - (a) Lyman Briggs 273, 274.
  - (b) Physics 231, 232, 251, 252.
  - (c) Physics 183, 184.
  - (d) Physics 181B, 182B, 251, 252.
  - (e) Physics 231B, 232B, 251, 252.
  - (f) Physics 183B, 184B.
  - (g) Physics 193H, 294H.
- (5) **History, Philosophy and Sociology of Science:** A total of 11 or 12 credits from the courses in groups (a), (b), and (c) below. In addition to completing one course from each of the three groups, the student must complete one of the following courses from group (b) or group (c): English 483; History 425; Lyman Briggs 332, 333, 334, 335, 336, 355.
  - (a) One of the following courses: Lyman Briggs 133; Writing, Rhetoric and American Cultures 110, 115, 120, 125, 130, 135, 140, 145, 150, 195H.
  - (b) One of the following courses: Lyman Briggs 331, 332, 333, 334, 335, 336, 355.
  - (c) One of the following courses: Lyman Briggs 330, 331, 332, 333, 334, 335, 336, 355, 490E; English 473A; History 425.

Each of the following courses may be used to meet either requirement 3.a.(5)(b) or requirement 3.a.(5)(c), but not both of those requirements: Lyman Briggs 331, 332, 333, 334, 335, 355.

- (6) **Senior Seminar:** Lyman Briggs 492 (4 credits).
- b. MAJOR or COORDINATE MAJOR.  
 Each student must complete the requirements of a Major or a Coordinate Major. The Major or Coordinate Major must be chosen

from the lists of options below. Both the Major or Coordinate Major and the related courses must be approved by the student's academic advisor. With the approval of the appropriate Lyman Briggs College Curriculum Coordinator or Undergraduate Director, courses other than those that are listed as requirements for a Major or Coordinate Major may be used to satisfy degree requirements.

**Majors:**

Biology  
Computer Science  
Earth Science  
Environmental Science and Management  
Physical Science  
History, Philosophy and Sociology of Science

**Coordinate Majors:**

(1) College of Agriculture and Natural Resources:

Animal Science  
Fisheries and Wildlife  
Entomology

*Food Science*

(2) College of Engineering:

Computer Science

Students are admitted to this Coordinate Major after they have reached junior standing and have met certain other requirements specified by Lyman Briggs College.

(3) College of Natural Science:

Actuarial Science  
Astrophysics  
Biochemistry and Molecular Biology  
Biochemistry/Biotechnology  
Biological Science—Interdepartmental  
Biomedical Laboratory Science  
Chemical Physics  
Chemistry  
Computational Chemistry  
Computational Mathematics  
Diagnostic Molecular Science  
Earth Science—Interdepartmental  
Environmental Biology/Microbiology  
Environmental Biology/Plant Biology  
Environmental Biology/Zoology  
Environmental Geosciences  
Genomics and Molecular Genetics  
Geological Sciences  
Human Biology  
Mathematics  
Mathematics, Advanced  
Microbiology  
Nutritional Sciences  
Physical Science—Interdepartmental  
Physics  
Physiology  
Plant Biology  
Statistics  
Zoology