

## New Proposal

Date Submitted: 09/28/21 11:44 am

Viewing: : **Food Science, BS**

Last edit: 01/28/22 4:17 pm

Changes proposed by: Rebecca Snook

### In Workflow

1. **U Program Review**
2. **1698 Committee Chair**
3. **1698 Head**
4. **KL Committee Chair**
5. **KL Dean**
6. **University Librarian**
7. **Provost**
8. **Senate EPC**
9. Senate
10. U Senate Conf
11. Board of Trustees
12. IBHE
13. HLC
14. DMI

### Approval Path

1. 09/28/21 4:10 pm  
Deb Forgacs  
(dforgacs):  
Approved for U  
Program Review
2. 09/29/21 9:27 am  
Rebecca Snook  
(snook): Approved  
for 1698  
Committee Chair
3. 10/02/21 10:06  
pm  
Yuan-Xiang Pan  
(yxpan):  
Approved for 1698  
Head
4. 10/08/21 1:57 pm  
Brianna Gregg  
(bjgray2):  
Approved for KL  
Committee Chair
5. 10/11/21 10:31

- am  
Anna Ball (aball):  
Approved for KL  
Dean
6. 10/11/21 10:35  
am  
John Wilkin  
(jpwilkin):  
Approved for  
University  
Librarian
7. 10/11/21 3:00 pm  
Kathy Martensen  
(kmartens):  
Approved for  
Provost
8. 10/12/21 9:29 am  
Barbara Lehman  
(bjlehman):  
Rollback to  
Provost for Senate  
EPC
9. 11/08/21 2:49 pm  
Kathy Martensen  
(kmartens):  
Rollback to KL  
Committee Chair  
for Provost
10. 12/07/21 10:09  
am  
Brianna Gregg  
(bjgray2):  
Approved for KL  
Committee Chair
11. 12/07/21 10:40  
am  
Anna Ball (aball):  
Approved for KL  
Dean
12. 12/07/21 10:43  
am  
John Wilkin  
(jpwilkin):  
Approved for  
University  
Librarian
13. 12/07/21 1:27 pm  
Kathy Martensen

(kmartens):  
Approved for  
Provost

## Proposal Type

Proposal Type:  
Major (ex. Special Education)

## Administration Details

Official Program Name	Food Science, BS	
Sponsor College	Agr, Consumer, & Env Sciences	
Sponsor Department	Food Science and Human Nutrition	
Sponsor Name	Yuan-Xiang Pan	
Sponsor Email	yxpan@illinois.edu	
College Contact	Brianna Gregg	College Contact Email
	bjgray2@illinois.edu	
College Budget Officer	Tosha Waller-Mumm	
College Budget Officer Email	wallermu@illinois.edu	

List the role for rollbacks (which role will edit the proposal on questions from EPC, e.g., Dept Head or Initiator) and/or any additional stakeholders. *Purpose: List here who will do the editing work if proposal needs rolled back. And any other stakeholders.*

Roll back to 1698 Committee Chair role.

Does this program have inter-departmental administration?  
No

## Proposal Title

Effective Catalog Term      Fall 2022

Provide a brief, concise description (not justification) of your proposal.

Propose new major, Food Science, BS in the Department of Food Science and Human Nutrition, College of ACES to replace the Food Science Concentration.

List here any related proposals/revisions and their keys. *Example: This BS proposal (key 567) is related to the Concentration A proposal (key 145) and the Concentration B proposal (key 203).*

This BS in Food Science proposal (key 1101) will replace the Food Science and Human Nutrition, BS (key 81) along with the Food Science Concentration (key 646).

## Program Justification

Provide a **brief** justification of the program, including highlights of the program objectives, and the careers, occupations, or further educational opportunities for which the program will prepare graduates, when appropriate.

Many students are highly interested in acquiring employable skillsets in the science of food to contribute to a safe, nutritious, and sustainable food supply. The proposed new Bachelor of Science in Food Science degree incorporates courses in chemistry, microbiology, and processing to provide a comprehensive education in Food Science. This interdisciplinary curriculum prepares students for careers in a variety of different fields. This major also allows enough flexibility for students to take courses in various disciplines within the 126 total hours. Among which 44 hours are achieved in upper division courses (300- and 400- level coursework).

The proposed new degree is the existing Food Science concentration under the Bachelor of Science in Food Science and Human Nutrition degree program. This new major has the advantage of consolidating relatively low enrollments in the current concentration into a more visible major for recruitment. Additionally, this major addresses a need identified by faculty in FSHN upon review of undergraduate enrollment and curriculum.

## Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

Yes

Please describe

Additional capacity currently exists within the departmental courses that will serve as core courses for the major, such that we anticipate a two-fold increase in current enrollment (from 10-15 to 20-30 students per cohort) would not significantly affect existing courses. Additional sections and/or offerings of certain core courses can be added as necessary.

The existing Food Science concentration under the BS in Food Science and Human Nutrition major that would be addressed by the proposed Food Science major will be gradually phased out as students currently enrolled in the program graduate or transfer to the new degree program, and would be eliminated once there are no longer any students enrolled in the concentration (by approximately 2026).

Does this new program/proposed change result in the replacement of another program?

Yes

Choose program 646  
being replaced

Does the program include other courses/subjects impacted by the creation/revision of this program?

Yes

Required courses

CHEM 102 - General Chemistry I  
CHEM 103 - General Chemistry Lab I  
CHEM 104 - General Chemistry II  
CHEM 105 - General Chemistry Lab II  
CHEM 232 - Elementary Organic Chemistry I  
CPSC 116 - The Global Food Production Web  
IB 100 - Biology in Today's World  
LEAD 230 - Leadership Communications  
LEAD 260 - Foundations of Leadership  
MATH 220 - Calculus  
MCB 100 - Introductory Microbiology  
MCB 450 - Introductory Biochemistry  
PHYS 101 - College Physics: Mech & Heat

Explain how the  
inclusion or  
removal of the  
courses/subjects  
listed above  
impacts the  
offering  
departments.

This major will be supported by course offerings in the Department of Chemistry, Crop Sciences, the School of Integrative Biology (IB), the Department of Organizational & Community Leadership, Mathematics, the School of Molecular and Cell Biology, and the Department of Physics. All of these courses are at the introductory level or serve as required courses for these programs, therefore they are offered regularly and have large capacities. Our concentration students currently take these courses, and thus we do not anticipate that the new degree program would have any significant impact on these courses.

Attach letters of  
support or  
acknowledgement  
from other  
departments.

## Program Regulation and Assessment

Briefly describe the plan to assess and improve student learning, including the program’s learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student’s achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning. (Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable).

Our Food Science Undergraduate Program currently holds approval from the Institute of Food Technologists (IFT). In 2019, IFT revised the requirements for approval of undergraduate food science and food technology programs. The new requirements include 11 Standards and 55 Essential Learning Outcomes (ELOs). We submitted information on the institutional profile, food science facilities, undergraduate teaching faculty, foundational courses, IFT program goals, and five-year assessment plan in 2019. We obtained the initial approval from the IFT Higher Education Review Board (HERB) in December 2019. Per this plan, the assessment would start in Fall 2020, and the first annual report was due October 2021, covering data collected in semesters of Fall 2020 and Spring 2021. However, due to the COVID-19 pandemic, the due date of the first annual report has been postponed to October 2022. Therefore, we will collect assessment data in Fall 2021 and Spring 2022 to prepare for this report.

To develop the five-year assessment plan, we first identified all the required Food Science courses in our program, 18 courses total. Then, through a survey, we asked the instructors of each course to select the ELOs that their courses cover to some extent or to a significant extent. Based on our survey results, we have scheduled when each course will be evaluated, meeting the assessment requirement for maintaining IFT approval (Appendix 1 attached as document to the Program of Study section). In this plan, all 11 Standards are covered across Assessment Years 1-5. Two Standards per year will be covered for Assessment Years 1-4, with three corresponding ELOs assessed per Standard. Three (3) Standards will be covered for Assessment Year 5, with two corresponding ELOs assessed per Standard. By the end of Assessment Year 5, the assessment plan includes 11 Standards and 30 ELOs (out of 55 ELOs total).

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

## Program of Study

*"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: <https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf>). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.*

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

For new programs, attach Program of Study [Appendix 1\\_IFT Program Assessment Plan 2021 to 2026.docx](#)  
[Food Science, BS Program of Study Proposal.docx](#)  
[FSHN BS Concentration in Food Science \(for comparison\).docx](#)

Text for Overview tab on the Catalog Page. This is not official content, it is used to help build the new catalog page for the program. Can be edited in the catalog by the college or department.

department website: <https://fshn.illinois.edu>  
department faculty: <https://fshn.illinois.edu/directory/faculty/>

overview of college admissions & requirements: Agricultural, Consumer & Environmental Sciences  
college website: <https://aces.illinois.edu/>

The Food Science major exposes students to all components of food production: harvesting and raw-product handling, food-processing procedures and techniques, packaging, and food storage. Students selecting this major are prepared for careers in many areas of the food industry.

Statement for Programs of Study Catalog

Prescribed Courses including [Campus General Education Requirements](#)

Course List		Hours
Code	Title	Hours
Requirement		Hours
Composition I and Speech		6-7
Select one of the following:		
<a href="#">RHET 105</a>	Writing and Research	
& <a href="#">CMN 101</a>	and Public Speaking (or equivalent; see college Composition I requirement)	
<a href="#">CMN 111</a>	Oral & Written Comm I	
& <a href="#">CMN 112</a>	and Oral & Written Comm II	
Advanced Composition		3-4
Select one course from campus approved list of Advanced Composition courses.		
Cultural Studies		9
<a href="#">CPSC 116</a>	The Global Food Production Web	
Select one course from Western culture campus approved list.		
Select one course from U.S. minority culture campus approved list.		
Foreign Language		
Coursework at or above the third level is required for graduation.		
Quantitative Reasoning I		4-5
<a href="#">MATH 220</a>	Calculus	
or <a href="#">MATH 221</a>	Calculus I	
Quantitative Reasoning II		3-4
Select one of the following:		
<a href="#">ACE 262</a>	Applied Statistical Methods and Data Analytics I	
<a href="#">CPSC 241</a>	Intro to Applied Statistics	
<a href="#">ECON 202</a>	Economic Statistics I	
<a href="#">PSYC 235</a>	Intro to Statistics	
<a href="#">STAT 100</a>	Statistics	
Natural Sciences and Technology		11
<a href="#">CHEM 102</a>	General Chemistry I	
& <a href="#">CHEM 103</a>	and General Chemistry Lab I	

Code	Title	Hours
<a href="#">CHEM 104</a> & <a href="#">CHEM 105</a> <a href="#">MCB 100</a>	General Chemistry II and General Chemistry Lab II Introductory Microbiology	
Humanities and the Arts	Select 6 credit hours from campus approved list.	6
Social and Behavioral Sciences		6
<a href="#">LEAD 230</a> or <a href="#">LEAD 260</a>	Leadership Communications Foundations of Leadership	
	Select 3 credit hours from campus approved list.	
ACES Requirements		2
<a href="#">ACES 101</a>	Contemporary Issues in ACES	
Other Natural Sciences and Technology Required Courses		11 or 12
<a href="#">CHEM 232</a> <a href="#">PHYS 101</a> <a href="#">IB 100</a> or <a href="#">IB 105</a>	Elementary Organic Chemistry I College Physics: Mech & Heat Biology in Today's World Environmental Biology	
Major Required Courses		53-54
<a href="#">FSHN 101</a> <a href="#">FSHN 120</a> or <a href="#">FSHN 220</a> <a href="#">FSHN 201</a> <a href="#">FSHN 230</a> <a href="#">FSHN 232</a> <a href="#">FSHN 260</a> <a href="#">FSHN 302</a> <a href="#">FSHN 414</a> <a href="#">FSHN 416</a> <a href="#">FSHN 418</a> <a href="#">FSHN 419</a> <a href="#">FSHN 460</a> <a href="#">FSHN 466</a> <a href="#">FSHN 471</a> <a href="#">FSHN 472</a> <a href="#">FSHN 481</a> <a href="#">FSHN 482</a> <a href="#">FSHN 483</a> <a href="#">FSHN 484</a> <a href="#">ANSC 350</a> or <a href="#">MCB 450</a>	The Science of Food and How it Relates to You Contemporary Nutrition Principles of Nutrition Math for Food Science Food Sci Professional Issues Science of Food Preparation Raw Materials for Processing Sensory Evaluation of Foods Food Chemistry Food Chemistry Laboratory Food Analysis Food Ingredient Technology Food Processing Engineering Food Product Development Food & Industrial Microbiology Applied Food Microbiology Food Processing Unit Operations I Food Processing Unit Operations I Lab Food Processing Unit Operations II Food Processing Unit Operations II Lab Cellular Metabolism in Animals Introductory Biochemistry	
Major Electives:		9
	Select 9 hours from the Food Science-related course list below. 6 hours must be at the 300-400 level:	
<a href="#">FSHN 175</a> <a href="#">FSHN 231</a> <a href="#">FSHN 249</a> <a href="#">FSHN 293</a>	Science of Fermented Foods Food Systems: Cacao & Chocolate Food Service Sanitation Off Campus Internship (up to 3 credit hours will count toward degree)	3 2 1 0 to 4



Code	Title	Hours
<a href="#"><u>FSHN 295</u></a>	UG Research or Thesis (up to 3 credit hours will count toward degree)	1 to 4
<a href="#"><u>FSHN 345</u></a>	Strategic Operations Management	3
<a href="#"><u>FSHN 417</u></a>	Neuroscience of Eating & Drinking	3
<a href="#"><u>FSHN 425</u></a>	Food Marketing	3
<a href="#"><u>FSHN 464</u></a>	Beverage Science & Technology	2
<a href="#"><u>FSHN 469</u></a>	Package Engineering	3
<a href="#"><u>FSHN 480</u></a>	Basic Toxicology	3
<a href="#"><u>ACE 161</u></a>	Microcomputer Applications	3
<a href="#"><u>ACE 306</u></a>	Food Law	3
<a href="#"><u>CHEM 233</u></a>	Elementary Organic Chem Lab I	2
Minimum of 40 hours of advanced credit required		
Total Minimum Hours		126

Corresponding Degree      BS Bachelor of Science

## Program Features

Academic Level      Undergraduate

Does this major have transcribed concentrations?      No

What is the typical time to completion of this program?  
4 years

What are the minimum Total Credit Hours required for this program?  
126

CIP Code      011001 - Food Science.

Is This a Teacher Certification Program?  
No

Will specialized accreditation be sought for this program?

Yes

Describe the plans for seeking specialized accreditation:

Our Food Science Undergraduate Program receives approval from the Institute of Food Technologists (IFT). The process involves annual assessment/programmatic reviews.

## Delivery Method

This program is available:

On Campus - Students are required to be on campus, they may take some online courses.

# Institutional Context

University of Illinois at Urbana-Champaign

Describe the historical and university context of the program's development. Include a short summary of any existing program(s) upon which this program will be built.

Explain the nature and degree of overlap with existing programs and, if such overlap exists, document consultation with the impacted program's home department(s).

This program has been in existence for more than 50 years, as Food Science; however, early it was a separate department. As of 1995 the College (now ACES) redesign merged Food Science with the Division of Foods & Nutrition – resulting in 4 diverse undergraduate concentrations. We are now seeking movement of these concentrations to majors to increase their visibility and positive identities.

Enrollment in the Food Science concentration under the Bachelor of Science in Food Science and Human Nutrition degree program has been decreasing recently. Through self-evaluation of our curriculum and FSHN faculty discussions, we determined that lack of visibility of the Food Science concentration, is limiting student enrollment in the program and not presenting accurate degree program info of students to pursue key employment opportunities. The proposed new major is a direct replacement of the existing Food Science concentration under the Bachelor of Science in Food Science and Human Nutrition degree program. This new major has the advantage of consolidating relatively low enrollments in the current concentration into a more visible major for recruitment and reducing the confusion from students about the Food Science major. Also, their degree will state BS in Food Science as opposed to BS in Food Science and Human Nutrition. The current concentration that will be replaced by this major has recently undergone strict curriculum revision, making it a stronger Food Science program.

The creation of this new major would enhance student identity, provide greater prominence to this area of diverse expertise in Food Science, and address student needs while preparing them with skillsets for known employment opportunities in the field of agriculture. There is no overlap with other curricula on this campus.

University of Illinois

Briefly describe how this program will support the University's mission, focus and/or current priorities. Demonstrate the program's consistency with and centrality to that mission.

Our new major in Food Science addresses the University of Illinois mission as a land grant institution by providing education and putting knowledge to work on the science of food. We anticipate that increasing our number of B.S. graduates will increase our regional and national standing as a leader in the Food Science field, and would help us fortify current and develop new corporate partnerships to support student education and research efforts. Our Food Science students will be strongly trained in the key Food Science disciplinary areas of food chemistry, food processing and food microbiology and will be engaged in experiential activities including product development, food fermentations, working in ISFP (Illinois Sustainable Farm Project – turning produce from the student sustainable farm into useful products for campus/dining services; as well as a host of other internships and study abroad activities. These students will graduate with a strong trajectory for success in the food industry and/or graduate schools.

Since we have information regarding student enrollment in the corresponding concentration for the past 10+ years, we will be able to assess whether the new degree program results in increased student enrollment. We also collect career information on these graduates for demonstration of continued successful placement in the food industry and related career paths.

## Admission Requirements

Desired Effective      Fall 2023  
Admissions Term

Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.

The minimum GPA for admission consideration is 2.50 (A=4.00). Transfer coursework equivalent to the University of Illinois courses listed must be successfully completed prior to the desired term of entry.

Freshman-level and Sophomore-level transfer admission requires completion of transfer coursework equivalent to the following University of Illinois courses:  
CHEM 102, General Chemistry I and CHEM 103, General Chemistry Lab I  
MATH 220, Calculus

Junior-level transfer admission requires completion of transfer coursework equivalent to the following  
University of Illinois courses:  
CHEM 102, General Chemistry I and CHEM 103, General Chemistry Lab I  
CHEM 104, General Chemistry II and CHEM 105, General Chemistry Lab II  
MATH 220, Calculus

Describe how critical academic functions such as admissions and student advising are managed.

FSHN has separated, dedicated advisors for each concentration/major. Our Food Science Undergraduate Advisor engages with prospective and admitted students via marketing, recruitment events, campus visits, etc. Once students accept their offer of admission, our Undergraduate Advisor becomes their primary academic advisor and guides them through degree requirements; additionally, the Advisor encourages student participation in undergraduate research and internship opportunities.

## Enrollment

Number of Students in Program (estimate)		
Year One Estimate	25	5th Year Estimate (or when fully implemented)
35		
Estimated Annual Number of Degrees Awarded		
Year One Estimate	0	5th Year Estimate (or when fully implemented)
25		
What is the matriculation term for this program?		
Fall		

## Budget

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

No

Additional Budget Information

Attach File(s)

## Financial Resources

How does the unit intend to financially support this proposal?

As this program is currently offered as a concentration under an existing major, the existing infrastructure exists with the Department of Food Science and Human Nutrition to support the program.

Will the unit need to seek campus or other external resources?

No

Attach letters of support

What tuition rate do you expect to charge for this program? e.g, Undergraduate Base

Tuition, or Engineering Differential, or Social Work Online (no dollar amounts necessary)

FSHN Differential that is currently used

## Resource Implications

### Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

### Technology

Will the program need additional technology beyond what is currently available for the unit?

No

### Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

## Resources

For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.

Attach File(s)

### Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

Current departmental teaching loads and class sizes are generally low, and the undergraduate-to-faculty FTE ratio is less than 15. We therefore have the capacity to increase student enrollment without significant negative impacts on faculty resources. Current faculty who are teaching the Food Science concentration will be responsible for teaching this major.

### Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

Current library resources, including collections and services, are sufficient to address the needs of this new major request since it is replacing the current concentration.

## Market Demand

What market indicators are driving this proposal? If similar programs exist in the state, describe how this program offers a unique opportunity for students:

Many of our peer institutions with whom we compete for agricultural science students offer a Food Science major. However, in Illinois there is no Food Science major. With the rise in the need of addressing critical issues with food (e.g., global hunger, food insecurity, sustainability), foundational knowledge in the science of food provided by a major in Food Science is important.

The U.S. Bureau of Labor Statistics projects a 7% increase in demand for agricultural scientists during the 2019-2029 period, which they classify as “faster than average”. Within the jobs categorized as agricultural science, the classification of “Agricultural and Food Scientists” – the classification mostly closely aligned with Food Science – is projected to be 6%. Having this major unique from the previous FSHN major – will allow our students to compete well for these positions. Additionally it will enhance our marketing potential.

Explain how the program will meet the needs of regional and state employers, including any state agencies, industries, research centers, or other educational institutions that expressly encouraged the program's development.

Discuss projected future employment and or additional educational opportunities for graduates of this program. Compare estimated demand with the estimated supply of graduates from this program and existing similar programs in the state. Where appropriate, provide documentation by citing data from such sources as employer surveys, current labor market analyses, and future workforce projections.

*(Whenever possible, use state and national labor data, such as that from the Illinois Department of Employment Security at <http://ides.illinois.gov/> and/or the U.S. Bureau for Labor Statistics at <http://www.bls.gov/>).*

We anticipate that, similar to past graduates, our future graduates will readily find job opportunities in the food industry. Employment opportunities for the Food Science major include quality assurance, research and development, etc. Private sector includes the ingredient and food production industries as quality assurance technicians and managers, food chemists, flavor chemists, food scientists, food technologists, research and development scientists. Public sector (state and federal agencies) also employ food scientists as extension specialists, county extension directors, research associates, and in other science-based professional positions.

What resources will be provided to assist students with job placement?

The Food Science academic advisor offers general assistance to students regarding their university career, while ACES Career Services provides career-related assistance. Additionally, each student is connected with the Food Science academic advisor in their first year to help prepare them for their future careers. Not only does the Food Science academic advisor provide specific career-related advice, he/she/they also assists students throughout their four years by guiding them to the most appropriate courses, helping them find and apply to internships or research programs, and serving as recommendation letter writers for post-graduation opportunities. In addition, our student organization, the Association of Food Technologist, host company recruitment visits for our students. We anticipate that our departmental post-graduation placement rate of >90% (including graduates either employed or pursuing advanced degrees) will remain high in the future.

If letters of support are available attach them here:

EP Documentation

EP Control Number	EP.22.074
Attach Rollback/Approval Notices	<a href="#">EP22074_email to sponsor and sponsor response_20220128.pdf</a> <a href="#">ep22074_Food Science BS_Program of Study_Proposalnew_20220128.pdf</a>
This proposal requires HLC inquiry	Yes

DMI Documentation

Attach Final Approval Notices			
Banner/Codebook Name			
Program Code:			
Minor Code	Conc Code	Degree Code	Major Code
Senate Approval Date			
Senate Conference Approval Date			

BOT Approval

Date

IBHE Approval

Date

HLC Approval

Date

Effective Date:

Attached

Document

Justification for  
this request

Program Reviewer  
Comments

**Brianna Gregg (bjgray2) (09/16/21 10:49 am):** Rollback: Would it be possible to review for the total 130 hours required. Could review to match the college at 126. Also, could review to see if Calc for Business would be an option for the degree requirements.

**Barbara Lehman (bjlehman) (10/12/21 9:29 am):** Rollback: per your request

**Kathy Martensen (kmartens) (11/08/21 2:49 pm):** Rollback: Rollback for packaging with remainder of FSHN proposals.

Key: 1101



## FOOD SCIENCE AND HUMAN NUTRITION, BS

### CONCENTRATION IN FOOD SCIENCE

Prescribed Courses including Campus General Education

Course List		
Code	Title	Hours
Composition I and Speech		
Select one of the following:		6-7
<a href="#"><u>RHET 105</u></a> & <a href="#"><u>CMN 101</u></a>	Writing and Research and Public Speaking(or equivalent) (see college Composition I requirement)	
<a href="#"><u>CMN 111</u></a> & <a href="#"><u>CMN 112</u></a>	Oral & Written Comm I and Oral & Written Comm II	
Advanced Composition		
Select one course from campus approved list of Advanced Composition courses.		3-4
Cultural Studies		
Select one course from Western culture, one from non-Western culture, and one from U.S. minority culture from campus approved lists. <sup>1</sup>		9
Foreign Language		
Coursework at or above the third level is required for graduation.		
Quantitative Reasoning I		
Select one of the following: <sup>2</sup>		4-5
<a href="#"><u>MATH 220</u></a>	Calculus	
<a href="#"><u>MATH 221</u></a>	Calculus I	
<a href="#"><u>MATH 234</u></a>	Calculus for Business I (This course does not count for students in the Food Science Concentration; choose from the other two options.)	
Quantitative Reasoning II		
Select one of the following:		3-4
<a href="#"><u>ACE 261</u></a>	Applied Statistical Methods	
<a href="#"><u>CPSC 241</u></a>	Intro to Applied Statistics	
<a href="#"><u>ECON 202</u></a>	Economic Statistics I	
<a href="#"><u>PSYC 235</u></a>	Intro to Statistics	
<a href="#"><u>STAT 100</u></a>	Statistics	
Natural Sciences and Technology		
Chemistry <sup>3</sup>		3 or 8
<a href="#"><u>CHEM 101</u></a>	Introductory Chemistry	

Course List		
Code	Title	Hours
<a href="#">CHEM 102</a> & <a href="#">CHEM 103</a>	General Chemistry I and General Chemistry Lab I	
<a href="#">CHEM 104</a> & <a href="#">CHEM 105</a>	General Chemistry II and General Chemistry Lab II	
<a href="#">MCB 100</a>	Introductory Microbiology	3
<a href="#">MCB 101</a>	Intro Microbiology Laboratory <sup>4</sup>	2
Humanities and the Arts		
Select from campus approved list.		6
Social and Behavioral Sciences		
Select from campus approved list and/or see individual concentration. <sup>5</sup>		9
ACES Prescribed Course		
<a href="#">ACES 101</a>	Contemporary Issues in ACES	2
Required Concentration		
Concentration prescribed courses. See specific requirements for each concentration listed below.		
Total Hours <sup>6</sup>		126 or 130

<sup>1</sup> Students in the Food Science Concentration must choose CPSC 116, and one course from Western cultures, from U.S. minority cultures from campus approved lists.

<sup>2</sup> Students in the Food Science Concentration must select from [MATH 220](#) or [MATH 221](#).

<sup>3</sup> Students in the Hospitality Management Concentration must take CHEM 101. All other concentrations take 102 + 103 & CHEM 104 + 105, which are **not** required for the Hospitality Management Concentration.

<sup>4</sup> Not required for the Food Science Concentration

<sup>5</sup> AGED 230 or 260 and 3 hours selected from the campus approved list for students in the Food Science Concentration - 6 hours total.

<sup>6</sup> The Food Science Concentration requires a minimum of 130 hours; the Dietetics, Human Nutrition, and Hospitality Management Concentrations each require a minimum of 126 hours.

Course List		
Code	Title	Hours
Other Natural Sciences and Technology Required Courses		
<a href="#">CHEM 232</a>	Elementary Organic Chemistry I	4
<a href="#">PHYS 101</a>	College Physics: Mech & Heat	5
<a href="#">IB 100</a>	Biology in Today's World	3
or <a href="#">IB 105</a>	Environmental Biology	
Food Science Concentration Required Courses		
<a href="#">FSHN 101</a>	The Science of Food and How it Relates to You	3

Course List		
Code	Title	Hours
<a href="#"><u>FSHN 120</u></a>	Contemporary Nutrition	3
or <a href="#"><u>FSHN 220</u></a>	Principles of Nutrition	
<a href="#"><u>FSHN 201</u></a>	Math for Food Science	3
<a href="#"><u>FSHN 230</u></a>	Food Sci Professional Issues	1
<a href="#"><u>FSHN 232</u></a>	Science of Food Preparation	3
<a href="#"><u>FSHN 260</u></a>	Raw Materials for Processing	4
<a href="#"><u>FSHN 302</u></a>	Sensory Evaluation of Foods	3
<a href="#"><u>FSHN 414</u></a>	Food Chemistry	3
<a href="#"><u>FSHN 416</u></a>	Food Chemistry Laboratory	3
<a href="#"><u>FSHN 418</u></a>	Food Analysis	4
<a href="#"><u>FSHN 419</u></a>	Food Ingredient Technology	3
<a href="#"><u>FSHN 460</u></a>	Food Processing Engineering	3
<a href="#"><u>FSHN 466</u></a>	Food Product Development	4
<a href="#"><u>FSHN 471</u></a>	Food & Industrial Microbiology	3
<a href="#"><u>FSHN 472</u></a>	Applied Food Microbiology	3
<a href="#"><u>FSHN 481</u></a>	Food Processing Unit Operations I	2
<a href="#"><u>FSHN 482</u></a>	Food Processing Unit Operations I Lab	1
<a href="#"><u>FSHN 483</u></a>	Food Processing Unit Operations II	2
<a href="#"><u>FSHN 484</u></a>	Food Processing Unit Operations II Lab	1
<a href="#"><u>ANSC 350</u></a>	Cellular Metabolism in Animals	3
or <a href="#"><u>MCB 450</u></a>	Introductory Biochemistry	
Select 9 hours from the Food Science-related course list below. 6 hours must be at the 300-400 level:		9
<a href="#"><u>FSHN 175</u></a>	Science of Fermented Foods	3
<a href="#"><u>FSHN 249</u></a>	Food Service Sanitation	1
<a href="#"><u>FSHN 293</u></a>	Off Campus Internship (up to 3 credit hours will count toward degree)	0 to 4
<a href="#"><u>FSHN 295</u></a>	UG Research or Thesis (up to 3 credit hours will count toward degree)	1 to 4
<a href="#"><u>FSHN 345</u></a>	Strategic Operations Management	3
<a href="#"><u>FSHN 417</u></a>	Neuroscience of Eating & Drinking	3
<a href="#"><u>FSHN 425</u></a>	Food Marketing	3
<a href="#"><u>FSHN 464</u></a>	Beverage Science & Technology	2
<a href="#"><u>FSHN 469</u></a>	Package Engineering	3
<a href="#"><u>FSHN 480</u></a>	Basic Toxicology	3
<a href="#"><u>ACE 161</u></a>	Microcomputer Applications	3
<a href="#"><u>ACE 306</u></a>	Food Law	3
<a href="#"><u>CHEM 233</u></a>	Elementary Organic Chem Lab I	2



## FOOD SCIENCE, BS

Prescribed Courses including [Campus General Education Requirements](#)

Course List		
Code	Title	Hours
Requirement		Hours
Composition I and Speech		6-7
Select one of the following:		
<a href="#">RHET 105</a> & <a href="#">CMN 101</a>	Writing and Research and Public Speaking(or equivalent; see college Composition I requirement)	
<a href="#">CMN 111</a> & <a href="#">CMN 112</a>	Oral & Written Comm I and Oral & Written Comm II	
Advanced Composition		3-4
Select one course from campus approved list of Advanced Composition courses.		
Cultural Studies		9
<a href="#">CPSC 116</a>	The Global Food Production Web	
Select one course from Western culture campus approved list.		
Select one course from U.S. minority culture campus approved list.		
Foreign Language		
Coursework at or above the third level is required for graduation.		
Quantitative Reasoning I		4-5
<a href="#">MATH 220</a>	Calculus	
or <a href="#">MATH 221</a>	Calculus I	
Quantitative Reasoning II		3-4
Select one of the following:		
<a href="#">ACE 261</a>	Applied Statistical Methods	
<a href="#">CPSC 241</a>	Intro to Applied Statistics	
<a href="#">ECON 202</a>	Economic Statistics I	
<a href="#">PSYC 235</a>	Intro to Statistics	
<a href="#">STAT 100</a>	Statistics	
Natural Sciences and Technology		11
<a href="#">CHEM 102</a> & <a href="#">CHEM 103</a>	General Chemistry I and General Chemistry Lab I	
<a href="#">CHEM 104</a> & <a href="#">CHEM 105</a>	General Chemistry II and General Chemistry Lab II	
<a href="#">MCB 100</a>	Introductory Microbiology	
Humanities and the Arts		6

Course List		
Code	Title	Hours
Select 6 credit hours from campus approved list.		
Social and Behavioral Sciences		6
<a href="#"><u>LEAD 230</u></a>	Leadership Communications	
or <a href="#"><u>LEAD 260</u></a>	Foundations of Leadership	
Select 3 credit hours from campus approved list.		
ACES Requirements		2
<a href="#"><u>ACES 101</u></a>	Contemporary Issues in ACES	
Other Natural Sciences and Technology Required Courses		11 or 12
<a href="#"><u>CHEM 232</u></a>	Elementary Organic Chemistry I	
<a href="#"><u>PHYS 101</u></a>	College Physics: Mech & Heat	
<a href="#"><u>IB 100</u></a>	Biology in Today's World	
or <a href="#"><u>IB 105</u></a>	Environmental Biology	
Major Required Courses		53-54
<a href="#"><u>FSHN 101</u></a>	The Science of Food and How it Relates to You	
<a href="#"><u>FSHN 120</u></a>	Contemporary Nutrition	
or <a href="#"><u>FSHN 220</u></a>	Principles of Nutrition	
<a href="#"><u>FSHN 201</u></a>	Math for Food Science	
<a href="#"><u>FSHN 230</u></a>	Food Sci Professional Issues	
<a href="#"><u>FSHN 232</u></a>	Science of Food Preparation	
<a href="#"><u>FSHN 260</u></a>	Raw Materials for Processing	
<a href="#"><u>FSHN 302</u></a>	Sensory Evaluation of Foods	
<a href="#"><u>FSHN 414</u></a>	Food Chemistry	
<a href="#"><u>FSHN 416</u></a>	Food Chemistry Laboratory	
<a href="#"><u>FSHN 418</u></a>	Food Analysis	
<a href="#"><u>FSHN 419</u></a>	Food Ingredient Technology	
<a href="#"><u>FSHN 460</u></a>	Food Processing Engineering	
<a href="#"><u>FSHN 466</u></a>	Food Product Development	
<a href="#"><u>FSHN 471</u></a>	Food & Industrial Microbiology	
<a href="#"><u>FSHN 472</u></a>	Applied Food Microbiology	
<a href="#"><u>FSHN 481</u></a>	Food Processing Unit Operations I	
<a href="#"><u>FSHN 482</u></a>	Food Processing Unit Operations I Lab	
<a href="#"><u>FSHN 483</u></a>	Food Processing Unit Operations II	
<a href="#"><u>FSHN 484</u></a>	Food Processing Unit Operations II Lab	
<a href="#"><u>ANSC 350</u></a>	Cellular Metabolism in Animals	
or <a href="#"><u>MCB 450</u></a>	Introductory Biochemistry	
Major Electives:		9

Course List		
Code	Title	Hours
Select 9 hours from the Food Science-related course list below. 6 hours must be at the 300-400 level:		
<a href="#"><u>FSHN 175</u></a>	Science of Fermented Foods	3
<a href="#"><u>FSHN 231</u></a>	Food Systems: Cacao & Chocolate	2
<a href="#"><u>FSHN 249</u></a>	Food Service Sanitation	1
<a href="#"><u>FSHN 293</u></a>	Off Campus Internship (up to 3 credit hours will count toward degree)	0 to 4
<a href="#"><u>FSHN 295</u></a>	UG Research or Thesis (up to 3 credit hours will count toward degree)	1 to 4
<a href="#"><u>FSHN 345</u></a>	Strategic Operations Management	3
<a href="#"><u>FSHN 417</u></a>	Neuroscience of Eating & Drinking	3
<a href="#"><u>FSHN 425</u></a>	Food Marketing	3
<a href="#"><u>FSHN 464</u></a>	Beverage Science & Technology	2
<a href="#"><u>FSHN 469</u></a>	Package Engineering	3
<a href="#"><u>FSHN 480</u></a>	Basic Toxicology	3
<a href="#"><u>ACE 161</u></a>	Microcomputer Applications	3
<a href="#"><u>ACE 306</u></a>	Food Law	3
<a href="#"><u>CHEM 233</u></a>	Elementary Organic Chem Lab I	2
Minimum of 40 hours of advanced credit required		
Total Minimum Hours		126

### Corresponding Degree

BS Bachelor of Science

### Program Features

#### Academic Level

Undergraduate

#### Does this major have transcribed concentrations?

No

#### What is the typical time to completion of this program?

4 years

#### What are the minimum Total Credit Hours required for this program?

130

#### CIP Code

011001 - Food Science.

#### Is This a Teacher Certification Program?

No

**Will specialized accreditation be sought for this program?**

Yes

**Describe the plans for seeking specialized accreditation:**

Our Food Science Undergraduate Program receives approval from the Institute of Food Technologists (IFT). The process involves annual assessment/programmatic reviews.

## Delivery Method

**This program is available:**

On Campus - Students are required to be on campus, they may take some online courses.

## Institutional Context

University of Illinois at Urbana-Champaign

Describe the historical and university context of the program's development. Include a short summary of any existing program(s) upon which this program will be built.

**Explain the nature and degree of overlap with existing programs and, if such overlap exists, document consultation with the impacted program's home department(s).**

This program has been in existence for more than 50 years, as Food Science; however, early it was a separate department. As of 1995 the College (now ACES) redesign merged Food Science with the Division of Foods & Nutrition – resulting in 4 diverse undergraduate concentrations. We are now seeking movement of these concentrations to majors to increase their visibility and positive identities.

Enrollment in the Food Science concentration under the Bachelor of Science in Food Science and Human Nutrition degree program has been decreasing recently. Through self-evaluation of our curriculum and FSHN faculty discussions, we determined that lack of visibility of the Food Science concentration, is limiting student enrollment in the program and not presenting accurate degree program info of students to pursue key employment opportunities. The proposed new major is a direct replacement of the existing Food Science concentration under the Bachelor of Science in Food Science and Human Nutrition degree program. This new major has the advantage of consolidating relatively low enrollments in the current concentration into a more visible major for recruitment and reducing the confusion from students about the Food Science major. Also, their degree will state BS in Food Science as opposed to BS in Food Science and Human Nutrition. The current concentration that will be replaced by this major has recently undergone strict curriculum



revision, making it a stronger Food Science program.

The creation of this new major would enhance student identity, provide greater prominence to this area of diverse expertise in Food Science, and address student needs while preparing them with skillsets for known employment opportunities in the field of agriculture. There is no overlap with other curricula on this campus.

University of Illinois

**Briefly describe how this program will support the University's mission, focus and/or current priorities. Demonstrate the program's consistency with and centrality to that mission.**

Our new major in Food Science addresses the University of Illinois mission as a land grant institution by providing education and putting knowledge to work on the science of food. We anticipate that increasing our number of B.S. graduates will increase our regional and national standing as a leader in the Food Science field, and would help us fortify current and develop new corporate partnerships to support student education and research efforts. Our Food Science students will be strongly trained in the key Food Science disciplinary areas of food chemistry, food processing and food microbiology and will be engaged in experiential activities including product development, food fermentations, working in ISFP (Illinois Sustainable Farm Project – turning produce from the student sustainable farm into useful products for campus/dining services; as well as a host of other internships and study abroad activities. These students will graduate with a strong trajectory for success in the food industry and/or graduate schools.

Since we have information regarding student enrollment in the corresponding concentration for the past 10+ years, we will be able to assess whether the new degree program results in increased student enrollment. We also collect career information on these graduates for demonstration of continued successful placement in the food industry and related career paths.

State of Illinois

**Indicate which of the following goals of the Illinois Board of Higher Education's Strategic Initiative are supported by this program: (choose all that apply)**

Integration of Educational, Research and Innovation Assets - Better integrate Illinois' educational, research and innovation assets to meet economic needs of the state and its regions.

**Describe how the proposed program supports these goals.**

Integration of Educational, Research and Innovation Assets: The Food Science and Human Nutrition Department is already a leader in developing superior employees/leaders in the field of Food Science. By more critically focusing the Food Science core curriculum, the students graduating from this program will be more prepared and therefore more beneficial

to potential employers. Having Food Science as a major will also let more students self-identify with the program and therefore increase visibility, while also linking to employment opportunities that commonly advertise for 'Food Science' skillsets. It will also help potential employers, including the department's traditional stakeholders, to more successfully identify our students with their true discipline. FSHN strongly encourages undergraduate research, including providing an updated list each term of faculty who will take undergraduate research assistant and what those responsibilities would be. We also have the students apply for financial research support from the ACES Undergraduate Research Scholarship program. These students are encouraged to submit their research to the Undergraduate Research Symposium and to scientific conferences. We anticipate that a major in Food Science, which is offered by many of our peer and competing institutions (e.g., Iowa State, Purdue) will meet the demand for specific credentials and justify cost for students and their families and provide career-ready Food Science graduates to the Chicagoland area – the hub of the food industry.

## Admission Requirements

### Desired Effective Admissions Term

Fall 2023

**Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.**

The minimum GPA for admission consideration is 2.50 (A=4.00). Transfer coursework equivalent to the University of Illinois courses listed must be successfully completed prior to the desired term of entry.

Freshman-level and Sophomore-level transfer admission requires completion of transfer coursework equivalent to the following University of Illinois courses:  
CHEM 102, General Chemistry I and CHEM 103, General Chemistry Lab I  
MATH 220, Calculus

Junior-level transfer admission requires completion of transfer coursework equivalent to the following  
University of Illinois courses:  
CHEM 102, General Chemistry I and CHEM 103, General Chemistry Lab I  
CHEM 104, General Chemistry II and CHEM 105, General Chemistry Lab II  
MATH 220, Calculus

**Describe how critical academic functions such as admissions and student advising are managed.**

FSHN has separated, dedicated advisors for each concentration/major. Our Food Science Undergraduate Advisor engages with prospective and admitted students via marketing,

recruitment events, campus visits, etc. Once students accept their offer of admission, our Undergraduate Advisor becomes their primary academic advisor and guides them through degree requirements; additionally, the Advisor encourages student participation in undergraduate research and internship opportunities.

## Enrollment

### **Number of Students in Program (estimate)**

#### **Year One Estimate**

25

#### **5th Year Estimate (or when fully implemented)**

35

### **Estimated Annual Number of Degrees Awarded**

#### **Year One Estimate**

0

#### **5th Year Estimate (or when fully implemented)**

25

### **What is the matriculation term for this program?**

Fall

## Budget

### **Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?**

No

### **Additional Budget Information**

### **Attach File(s)**

## Financial Resources

### **How does the unit intend to financially support this proposal?**

As this program is currently offered as a concentration under an existing major, the existing infrastructure exists with the Department of Food Science and Human Nutrition to support the program.

### **Will the unit need to seek campus or other external resources?**

No

### **Attach letters of support**

**What tuition rate do you expect to charge for this program? e.g, Undergraduate Base Tuition, or Engineering Differential, or Social Work Online (no dollar amounts necessary)**

FSHN Differential that is currently used

### **Resource Implications**

#### **Facilities**

**Will the program require new or additional facilities or significant improvements to already existing facilities?**

No

#### **Technology**

**Will the program need additional technology beyond what is currently available for the unit?**

No

#### **Non-Technical Resources**

**Will the program require additional supplies, services or equipment (non-technical)?**

No

#### **Resources**

**For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.**

#### **Attach File(s)**

#### **Faculty Resources**

**Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.**

Current departmental teaching loads and class sizes are generally low, and the undergraduate-to-faculty FTE ratio is less than 15. We therefore have the capacity to increase student enrollment without significant negative impacts on faculty resources. Current faculty who are teaching the Food Science concentration will be responsible for teaching this major.

## Library Resources

**Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.**

Current library resources, including collections and services, are sufficient to address the needs of this new major request since it is replacing the current concentration.

## Market Demand

**What market indicators are driving this proposal? If similar programs exist in the state, describe how this program offers a unique opportunity for students:**

Many of our peer institutions with whom we compete for agricultural science students offer a Food Science major. However, in Illinois there is no Food Science major. With the rise in the need of addressing critical issues with food (e.g., global hunger, food insecurity, sustainability), foundational knowledge in the science of food provided by a major in Food Science is important.

The U.S. Bureau of Labor Statistics projects a 7% increase in demand for agricultural scientists during the 2019-2029 period, which they classify as “faster than average”. Within the jobs categorized as agricultural science, the classification of “Agricultural and Food Scientists” – the classification mostly closely aligned with Food Science – is projected to be 6%. Having this major unique from the previous FSHN major – will allow our students to compete well for these positions. Additionally it will enhance our marketing potential.

**What type of employment outlook should these graduates expect? Explain how the program will meet the needs of regional and state employers, including any state agencies, industries, research centers, or other educational institutions that expressly encourage the program's development.**

We anticipate that, similar to past graduates, our future graduates will readily find job opportunities in the food industry. Employment opportunities for the Food Science major include quality assurance, research and development, etc. Private sector includes the ingredient and food production industries as quality assurance technicians and managers, food chemists, flavor chemists, food scientists, food technologists, research and

development scientists. Public sector (state and federal agencies) also employ food scientists as extension specialists, county extension directors, research associates, and in other science-based professional positions.

**What resources will be provided to assist students with job placement?**

The Food Science academic advisor offers general assistance to students regarding their university career, while ACES Career Services provides career-related assistance. Additionally, each student is connected with the Food Science academic advisor in their first year to help prepare them for their future careers. Not only does the Food Science academic advisor provide specific career-related advice, he/she/they also assists students throughout their four years by guiding them to the most appropriate courses, helping them find and apply to internships or research programs, and serving as recommendation letter writers for post-graduation opportunities. In addition, our student organization, the Association of Food Technologist, host company recruitment visits for our students. We anticipate that our departmental post-graduation placement rate of >90% (including graduates either employed or pursuing advanced degrees) will remain high in the future.

**If letters of support are available attach them here:**

EP Documentation

**Attach Rollback/Approval Notices**

DMI Documentation

**Attach Final Approval Notices**

**Banner/Codebook Name**

**Program Code:**

**Attached Document**

**Justification for this request**

**Program Reviewer Comments**

## IFT Program Assessment Plan 2021 to 2026 Draft

### Assessment Year 1 (2021 to 2022, Annual Assessment Report #1 due Oct 2022)

Standards	ELOs	Courses	LATs
Food Chemistry	FC.1. <b>Discuss</b> the major chemical reactions that limit shelf life of foods.	FSHN 414	
Food Chemistry	FC.2. <b>Explain</b> the chemistry underlying the properties and reactions of various food components.	FSHN 414	
Food Chemistry	FC.8. <b>Design</b> an appropriate analytical approach to solve a practical problem.	FSHN 416	
Professionalism & Leadership	PL.1. <b>Demonstrate</b> the ability to work independently and in teams.	FSHN 230	
Professionalism & Leadership	PL.2. <b>Discriminate</b> tasks to achieve a given outcome.	FSHN 416	
Professionalism & Leadership	PL.4. <b>Discuss</b> examples of ethical issues in food science.	FSHN 130	

### Campus Assessment Plan Year 1 (Report due Oct 2022)

Assess Program Level Learning Outcomes:

- 1 Graduates are competent in core food science areas and can integrate and apply their knowledge to solve real-world problems and make decisions
- 4 Graduate possess impactful professional and leadership skills.

**Note:** To collect data for FC.2., we will work with Dr. Shelly Schmidt (water section of FSHN 414), Dr. Nicki Engeseth (lipid section of FSHN 414), and Dr. Dawn Bohn (carbohydrate section of FSHN 414).

**Assessment Year 2 (2022 to 2023, Annual Assessment Report #2 due Oct 2023)**

Standards	ELOs	Courses	LATs
Sensory Science	SS.1. <b>Discuss</b> the physiological and psychological basis for sensory evaluation.	FSHN 302	
Sensory Science	SS.2. <b>Apply</b> experimental designs and statistical methods to sensory studies.	FSHN 302	
Sensory Science	SS.3. <b>Select</b> sensory methodologies to solve specific problems in food.	FSHN 302	
Data and Statistical Analysis	DS.1. <b>Use</b> statistical principles in food science applications.	FSHN 302	
Data and Statistical Analysis	DS.2. <b>Employ</b> appropriate data collection and analysis technologies.	FSHN 302	
Data and Statistical Analysis	DS.3. <b>Construct</b> visual representation of data.	FSHN 201	

**Campus assessment plan (Report due Oct 2023)**

Assess Program Level Learning Outcomes:

- 1 Graduates are competent in core food science areas and can integrate and apply their knowledge to solve real-world problems and make decisions
- 2 Graduates processes strong critical thinking and problem-solving skills.



**Assessment Year 3** (2023 to 2024, Annual Assessment Report #3 due Oct 2024)

Standards	ELOs	Courses	LATs
Food Microbiology	FM.1. <b>Identify</b> relevant beneficial, pathogenic, and spoilage microorganisms in foods and the conditions under which they grow.	FSHN 471	
Food Microbiology	FM.2. <b>Describe</b> the conditions under which relevant pathogens are destroyed or controlled in foods.	FSHN 471	
Food Microbiology	FM.3. <b>Apply</b> laboratory techniques to identify microorganisms in foods.	FSHN 472	
Food Safety	FS.5. Select appropriate environmental sampling techniques.	FSHN 472	
Food Safety	FS.2. <b>Describe</b> routes of physical, chemical, and biological contamination of foods.	FSHN 466	
Food Safety	FS.6. <b>Design</b> a food safety plan for the manufacture of a specific food.	FSHN 466	

**Campus assessment plan** (Report due Oct 2024)

Assess Program Level Learning Outcome:

- 1 Graduates are competent in core food science areas and can integrate and apply their knowledge to solve real-world problems and make decisions.

**Assessment Year 4** (2024 to 2025, Annual Assessment Report #4 due Oct 2025)

Standards	ELOs	Courses	LATs
Food Engineering & Processing	FE.2. Formulate mass and energy balances for a given food manufacturing process.	FSHN 460	
Food Engineering & Processing	FE.4. Design processing methods that make safe, high-quality foods.	FSHN 481/483	
Food Engineering & Processing	FE.5. Use unit operations to produce a given food product in a laboratory or pilot plant.	FSHN 482/484	
Quality Assurance	QA.1. Define food quality and food safety terms.	FSHN 232	
Quality Assurance	QA.2. Apply principles of quality assurance and control.	FSHN 418	
Quality Assurance	QA.4. Evaluate food quality assessment systems (e.g. statistical process control).	FSHN 418	

**Campus assessment plan** (Report due Oct 2025)

Assess Program Level Learning Outcome:

- 1 Graduates are competent in core food science areas and can integrate and apply their knowledge to solve real-world problems and make decisions.

**Assessment Year 5** (2025 to 2026, Annual Assessment Report #5 due Oct 2026)

Standards	ELOs	Courses	LATs
Food Laws & Regulations	FL.2. <b>Describe</b> the processes involved in formulating food policy.	FSHN 101	
Food Laws & Regulations	FL.4. <b>Examine</b> issues related to food laws and regulations.	FSHN 120	
Critical Thinking	CT.2. <b>Apply</b> critical thinking skills to solve problems.	FSHN 419	
Critical Thinking	CT.3. <b>Apply</b> principles of food science in practical, real-world situations and problems.	FSHN 419	
Food Science Communication	CM.1. <b>Write</b> relevant technical documents.	FSHN 260	
Food Science Communication	CM.2. <b>Create</b> oral presentations.	FSHN 260	

**Campus assessment plan** (Report due Oct 2026):

Assess Program Level Learning Outcomes:

- 1 Graduates can integrate and apply their knowledge to solve real-world problems and make decisions
- 2 Graduates processes strong critical thinking and problem-solving skills
- 3 Graduates are proficient communicators.

**FSHN Food Science courses (18)**

Course Number	Course Name	Credit Hours	Instructor	Year and term of data collection
FSHN 101	The Science of Food	3	Bohn & Schmidt	2025 Fall or 2026 Spring
FSHN 120	Contemporary Nutrition	3	Burkhalter	2025 Fall or 2026 Spring
FSHN 130	Introduction to Food Science	1	Ma	2021 Fall
FSHN 201	Math for Food Science	3	Takhar	2023 Spring
FSHN 230	Food Sci Professional Issues	1	Ma	2021 Fall
FSHN 232	Science of Food Preparation	3	Ma	2024 Fall or 2025 Spring
FSHN 260	Raw Materials for Processing	4	Padua	2026 Spring
FSHN 302	Sensory Evaluation of Foods	3	Lee	2022 Fall
FSHN 414	Food Chemistry	3	Engeseth	2021 Fall
FSHN 416	Food Chemistry Laboratory	3	De Mejia	2021 Fall
FSHN 418	Food Analysis	4	Cadwallader	2025 Spring
FSHN 419	Food Ingredient Technology	3	Bohn	2025 Fall
FSHN 460	Food Processing Engineering	4	Wang	2024 Fall
FSHN 481/482	Food Processing I and Lab	3	Feng, Lee	2024 Spring
FSHN 483/484	Food Processing II and Lab	3	Feng, Lee	2025 Fall
FSHN 466	Food Product Development	4	Bohn	2024 Spring
FSHN 471	Food & Industrial Microbiology	3	Miller	2024 Spring
FSHN 472	Applied Food Microbiology	3	Stasiewicz	2024 Spring

Hi Jennie,

Thanks for reaching out to me. I apologize for the delayed response. I'm still trying to recover from a severe Covid infection and everything is in slow motion.

I did go through your email the other day, and my responses are in the email below.

I don't feel like we need the proposals to be rolled back to our department unless you see it is necessary.

Let me know if you have any additional questions and I'm more than happy to attend your meeting next week, January 31 at 1:10, to help answer any questions.

See you soon,

Pan

Yuan-Xiang Pan, MS, PhD, Associate Professor  
Associate Head for Undergraduate Programs  
Departmental Honors Advisor  
Nutrient-gene and Epigenetics Group (NEG)  
Genomics: Behavior, Economics and Policy Group (GenBEP)  
Food Science and Human Nutrition (FSHN),  
Division of Nutritional Sciences (DNS),  
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<https://www.informatics.illinois.edu/display/infophd/Home>



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American Society for Nutrition  
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**From:** Pahre, Jennie <jpahre@illinois.edu>  
**Sent:** Friday, January 28, 2022 12:55 PM

**To:** Pan, Yuan-Xiang <yxpan@illinois.edu>

**Cc:** Martensen, Kathy <kmartens@illinois.edu>; Moorhouse, Linda <moorhouz@illinois.edu>;  
Lehman, Barbara J <bjlehman@illinois.edu>

**Subject:** Re: Curriculum Proposals for Educational Policy Committee

Dear Dr. Pan,

I hope that your week is wrapping up well. The first weeks of a new semester are always fiendish.

I'm anxious to be of use to you and to your department. I'd like to help get the concentration/major restructuring and the new degrees proposed by the Department of Food Science & Human Nutrition implemented. Please let me know if there's someone you'd like me to talk with.

In the meantime, I'm going to suggest that we roll the proposals back to your department so that the items noted below can be addressed. Again, the changes should be easily accomplished, and I am happy to work with whomever you wish.

With thanks.

Jennie

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**From:** Pahre, Jennie <[jpahre@illinois.edu](mailto:jpahre@illinois.edu)>

**Sent:** Monday, January 24, 2022 8:18 PM

**To:** Pan, Yuan-Xiang <[yxpan@illinois.edu](mailto:yxpan@illinois.edu)>

**Cc:** Martensen, Kathy <[kmartens@illinois.edu](mailto:kmartens@illinois.edu)>; Moorhouse, Linda <[moorhouz@illinois.edu](mailto:moorhouz@illinois.edu)>;

Lehman, Barbara J <[bjlehman@illinois.edu](mailto:bjlehman@illinois.edu)>

**Subject:** Curriculum Proposals for Educational Policy Committee

Dear Dr. Pan,

I hope that the semester is off to a good start.

The collection of Educational Policy Proposals that you are sponsoring on behalf of the Department of Food Science and Human Nutrition have all come to subcommittee A of the Senate Educational Policy Committee. You'll recall that I'm the chair of this subcommittee, and that we had the opportunity to chat at some length last year.

First, I think you've done a hero's job of creating the documents needed to support the retooling of the curriculum of the Department of Food Science and Human Nutrition – what a huge endeavor! There is wisdom in offering several tailored majors instead of concentrations in one major, and in promoting the new MS Concentration in Clinical and Community Nutrition.

The materials are largely in order; there are just a few things that should be done to make sure of smooth sailing. Some of the new programs are to begin in the coming fall, and I'd like to help you move the proposals through the Senate Educational Policy Committee so that they can get final approval from the Senate and Board of Trustees in good time for fall 2022.

Here are the comments of the subcommittee.

First, the comments about the new MS Concentration:

**EP 22.059 – to establish a new MS Concentration in Clinical and Community Nutrition (both on campus and online).** We need clarification on just two things. First, is there a letter of support from Kinesiology and Community Health? An email would be just fine. Second -- we wonder if the on-campus students can take any online classes (it would be fine either way, but we can't tell what is planned.)

**Answers: letter of support from Kinesiology attached.**

**On-campus students can take any online classes.**

Second, the comments about the deactivation of the BS in Food Science and Human Nutrition (because FSHN is changing the concentrations to individual majors, and eliminating the overarching BS):

**EP 22.069 – Proposal to Deactivate the BS in Food Science & Human Nutrition.** We have just one question here, but it's important: what will happen to the students that are currently completing the concentrations-- how will they be managed? (We assume that there's a collection of such students-- it would be good to know how many.)

**Answers: The students that are currently completing the concentrations will have the option to finish their degree with the concentration or to move to the new BS. This statement is included in the deactivation proposal for each concentration.**

Third, the comments about the change from concentration to degree for each identified area:

*Re: Hospitality Management:*

**EP 22.022 – Proposal to Establish a New BS in Hospitality Management AND**

**EP 22.073 – Proposal to Phasedown the Concentration in Hospitality Management**

This pair of proposals is in good order, with a collection of letters from coordinating units offering support for the change from concentrations to degrees. Although these letters are only appended here, I am "counting" them for all the concentration-to-major changes, as that is how they are written.

*Re: Food Science:*

**EP 22.035 – Proposal to Establish a New BS in Food Science AND**

**EP 22.072 – Proposal to Phasedown the Existing Concentration in Food Science AND**

**EP 22.074 – The BS in Food Science (Key 1101) will Replace the Food Science and Human Nutrition BS (Key 81) and the Food Science Concentration (key 646).** This last proposal seems to be duplicative of EP 22.035 (and although it's listed as a phasedown, it's also proposing the BS in Food Science). We note here that in the "Program of Study" section, the prescribed courses are different in the table and the associated Word doc. For example, in the table, there are 53-54 hours of major required courses and a total minimum of 126 hours. In the Word doc, there are 55-56 hours of major required courses and a total minimum of 130 hours. These need to be consistent.

**Answers: We apologize for the confusion. The proposal is correct after the meeting with our college C&C committee. However, the attached word file was the older version which should have been replaced by the new one (attached in this email).**

*Re: Dietetics and Nutrition:*

**EP 22.075 – Proposal to Establish a New BS in Dietetics and Nutrition AND**

**EP 22.071 – Proposal to Phasedown the Existing Concentration in Dietetics and Human Nutrition**

Here, we note only two things. First, TSM 311 is listed as an elective, but does not appear to exist. And second, when we add the total number of courses required in the given table, we only get to 119 credits, as opposed to the 126 listed.

**Answers: TSM 311 has been part of the curriculum of TSM - Technical Systems Management for many years: <http://catalog.illinois.edu/courses-of-instruction/tsm/>**



**Spring 2022:**  
<https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/TSM;>

**Spring 2021:** <https://courses.illinois.edu/schedule/2021/spring/TSM;>

**Spring 2020:** <https://courses.illinois.edu/schedule/2020/spring/TSM;>

**Spring 2019:** <https://courses.illinois.edu/schedule/2019/spring/TSM;>

**Spring 2018:** <https://courses.illinois.edu/schedule/2018/spring/TSM;>

**Spring 2017:** <https://courses.illinois.edu/schedule/2017/spring/TSM;>

**Spring 2016:** <https://courses.illinois.edu/schedule/2016/spring/TSM;>

**Spring 2015:** [https://courses.illinois.edu/schedule/2015/spring/TSM](https://courses.illinois.edu/schedule/2015/spring/TSM;)

**So maybe I'm missing something here?**

**For the total number of courses required, we apologize for the confusion. The proposal is correct after the meeting with our college C&C committee. However, the attached word file was the older version which should have been replaced by the new one (attached in this email)**

**I also attached the new version word file for Nutrition and Health major in case that one is also an older version.**

Please let me know if our subcommittee has misread something, misinterpreted something, or missed something entirely. We are trying to make sure that your programs launch without any difficulties. If you could respond to these questions, that would be excellent. If you'd like to make changes to the proposals (such as correcting the tables), we can have them rolled back to you. Again – I think that these are very minor details that we ought to be able to address very quickly.

Finally: would you be able to attend our next Educational Policy Committee Meeting, this coming Monday, January 31 at 1:10? If any new questions arise, you could address them then. Having sponsors attend can be quite helpful.

**I will be happy to attend your meeting next week.**

Kind regards,

Jennie

**JENNIFER N. PAHRE**

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