

# Program Change Request

Date Submitted: 01/30/24 1:37 pm

## Viewing: **BS-FSN-1 : Bachelor of Science Food Science and Nutrition**

Last approved: 10/23/20 6:55 pm

Last edit: 01/30/24 1:37 pm

Changes proposed by: diel

[Bachelor of Science in Food Science and Nutrition](#)

Catalog Pages  
Using this Program

Program Status [Hiatus](#) **Active**

Is this a significant curriculum change?

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Origination Date [2024-1-30](#) ~~2020-10-23~~

Is this an interdisciplinary program? No

Academic Unit Food Science and Nutrition  
College Lewis College of Science and Letters

Contributing Academic Unit(s)

Program Title  
Bachelor of Science Food Science and Nutrition

Effective Academic Year [2024](#) ~~2020~~ - [2025](#)  
~~2021~~ Effective Term Fall 2024

Academic Level Undergraduate

### In Workflow

1. **FDSN Chair**
2. **Academic Affairs**
3. **Undergraduate Academic Affairs**
4. **LS Dean**
5. **Undergraduate Studies Committee Chair**
6. Faculty Council Chair
7. Faculty Council Chair
8. Provost
9. President
10. Academic Affairs

### Approval Path

1. 02/05/24 10:52 am  
Britt Burton-Freeman (bburton): Approved for FDSN Chair
2. 02/07/24 11:02 am  
Ayesha Qamer (aqamer): Approved for Academic Affairs
3. 02/09/24 2:12 pm  
Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs
4. 02/14/24 12:12 pm  
Jennifer deWinter (jdewinter): Approved for LS Dean

### History

1. Jun 4, 2020 by Britt Burton-Freeman (bburton)
2. Jun 16, 2020 by Patty Johnson Winston (winston)
3. Jul 9, 2020 by Patty Johnson Winston (winston)
4. Jul 9, 2020 by Patty Johnson Winston (winston)
5. Jul 9, 2020 by Patty Johnson Winston (winston)
6. Jul 9, 2020 by Patty Johnson Winston (winston)
7. Jul 9, 2020 by Patty Johnson Winston (winston)
8. Jul 13, 2020 by Patty Johnson Winston (winston)
9. Sep 17, 2020 by Patty Johnson Winston (winston)
10. Sep 17, 2020 by Patty Johnson Winston (winston)
11. Oct 23, 2020 by Holli Pryor-Harris (pryor)

*If all courses in a subject in your department are required, please enter each subject followed by the number ranges in the "Quick Add" field in the pop up box when you click the green plus button below. For example: ARCH 100-499.*

What courses will factor the major GPA?

Program Type                      Degree

Degree Type                      Bachelor of Science (BS)

Are you seeking Title IV federal financial aid student eligibility status for this program?

No

CIP Code

01.1001 - Food Science.

SOC Code

Is there more than one Academic Unit proposer?

No

Which Academic  
Units?

Second CIP

Program Code            BS-FSN-1

Program Attribute

Total Program            128  
Credit Hours

Rationale for  
change in program  
credit hours.

Please provide a  
summary and  
rationale for the  
requested program  
revision.

Revised to add Program Code to new program.

10/23/2020 Updated program iteration code and effective CAT year/term for College Reorg.  
HPH

## **Program Narrative and Justification**

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Narrative description of how the institution determined the need for the program. For example, describe what need this program will address and how the institution became aware of that need. If the program is replacing a current program(s), identify the current program(s) that is being replaced by the new program(s) and provide details describing the benefits of the new program(s). If the program will be offered in connection with, or in response to, an initiative by a governmental entity, provide details of that initiative.

All major industries such as food, health care, defense, space, energy, government, transportation, are impacted by food, nutrition and health challenges. There is a great need for an educated workforce who can lead the transition in feeding more people health-promoting, safe food that is affordable with low environmental impact. This challenge goes beyond state lines and country borders. Most universities that offer an undergraduate program in Food Science and Nutrition do so from a historical perspective and service to their state as a land grant university. In this legacy, many of the traditional programs are dictated by the state's specialized needs, whereas Illinois Tech's program has unencumbered white space to boldly address local, national and world challenges centered on safe, sustainable diets that will require a reorganization of food systems and transformation of production and consumption patterns.

Our program is a unique offering designed with input from food and related industries that develops graduates who understand how the food industry functions currently, and who will be capable of propelling that industry to where it needs to be in the future. This graduate is prepared to step into a multitude of roles, from digitally-enabled food production, including the application of new and emerging food processing technologies, food safety and regulatory compliance, to applying novel techniques and ingredients in food product development and formulation testing, to design and business management, all while addressing global food economies and health issues. The program has an additional advantage of being the only degree of its kind offered within the City of Chicago.

#### Benefits

- 1) Provide an unprecedented interaction between university students and the Chicagoland food industry. Companies will have access to a dynamic candidate pool that they will have the opportunity to shape directly through interactive classrooms, hand-ons/project-based labs, and IPRO experiences.
- 2) Draw on the expertise and prestige of Illinois Tech's other departments, including computer science, design, engineering, architecture, business, law, psychology to create a truly distinctive and transformative experience that transcends traditional boundaries fueling discovery, creativity and solving important problems.
- 3) Grow the student body. A new and unique FDSN undergraduate program will add students to the existing undergraduate population attracting domestic and international students, of all ages.
- 4) An undergraduate program in FDSN will augment degree offerings in other disciplines through individual class experiences, minor degrees and certificates we offer giving students additional career tracks to pursue not previously planned.
- 4) Foster collaborative and integrative culture at Illinois Tech. Food and health touch every life on this campus whether casually or professionally. Social-cultural courses and events organized around food customs, traditional flavors, and functional ingredients can provide a completely new and engaging experience for students, staff and faculty bringing the Illinois Tech community closer together. Local and global issues of safely nourishing and hydrating 10 Billion in urban and rural centers without starving the planet is a topic every discipline at Illinois Tech could tackle.

5) Leverage Illinois Tech's unique relationship with the FDA and the food industry via the Institute for Food Safety and Health to give our graduates an educational experience that cannot be had anywhere else in the world.

Narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or State labor data systems information was used, and/or if State, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided; including information received from potential employers about course content; and information regarding the target students and employers.

Why Illinois Tech? 1. The unmet food industry needs that Illinois Tech can deliver on, 2. Chicago is a food mecca, 3. Illinois Tech has foundational expertise in FDSN, 4. FDSN faculty and staff have strong relationships with the food industry, professional organizations, and government 5. Job opportunities for students available in the food and health sector out-number well-trained students to fill them.

In recent years, such pressures as operational flexibility, advanced automation, modernization, regulations, quality control and management, environmental issues, affordable food, innovation to meet the demands of a new generation have motivated the food processing industry to search for an interdisciplinary and technical workforce. Moreover, as new and more complex technologies are adopted and regulatory hurdles elevated, technical professionals with management skills and regulatory know-how are required. However, the traditional form of a food science and nutrition education is to provide employees to such industries that are stand-alone, that is, deeply equipped in a single area. Industry tells us they need well-rounded students with broad hands-on experiences that make them "ready-to-work" so that additional in-house, on-the-job training after the hiring would be minimal. The industry is also telling us that understanding and applying digital tools to plant operations, food formulation, flavor, recipe scaling, content creation, and delivery, understanding consumer behavior in food choice, mapping and predicting safety risks in plants, are all top skills they look for when building a workforce. Government leaders describe needs for students to have in-depth knowledge in respective science and engineering disciplines with application to the fields of food science and nutrition, and training in the latest technologies as they are applied in the food industry paired with critical thinking skills against a backdrop of food law and regulations. With this background, we are proposing an unparalleled undergraduate program that meets the needs of the food industry but provides the skills and training that can/will be cross applied and competitive for jobs in biotech, healthcare, government and more.

(Above source: Mahalik, Nitaigour & Choudhury, Gour & Yen, Matthew. (2008). Food Plant Operation and Management (FPOM): A Proposed New Program Option. American Society of Agricultural and Biological Engineers - Food Processing Automation Conference 2008. 10.13031/2013.24561 and interviews with large and small companies, including start-up incubators, professional organizations (IFT), and its members, FDA leaders, alumni ).

The unique relationship of the FDSN department with the FDA, IFSH, the Institute for Translation Medicine (ITM) at University (U) of Chicago, and the Chicagoland food industry offers opportunities for Illinois Tech students not available at other Universities. The next closest Universities with programs in food science are U of Illinois, Champaign, IL, and U Wisconsin, Madison WI. None of these schools are located sufficiently close to Chicago to be as uniquely engaged with what is now emerging as the Silicon Valley of the Food Industry. In addition, major food and health professional organizations have their headquarters here in Chicago: Institute of Food Technologists (IFT), the Research Chefs Association (RCA), Academy of Nutrition and Dietetics (AND), American Medical Association (AMA). The IFT is the

organization, which has direct links to the food industry talent pipeline via its 20,000-plus professional members. The IFT commands the academic guidelines for food science four-year programs. In a corresponding fashion, the RCA commands the guidelines for a rapidly emerging and industry desired academic field known as Culinology. As one might expect from the RCA's own trademarked term "Culinology" it is the blending of food science with the culinary arts. With the growing consumer-driven trend of new food product innovation coming from the culinary executive chef and entrepreneur food start-ups, the food/nutrition scientist from Illinois Tech will have the know-how and hands-on skillset to bridge fields in food product development, nutrition, processing technology, scale-up, and value-added food and beverage products.

#### Chicagoland's Food & Beverage Industry

Since the mid-19th century, the Chicago region has been a center for food production and distribution – the place where much of the Midwest's agricultural output came to be processed, packaged and distributed to the marketplace. Today, Chicagoland's Food and Beverage industry is the second largest in the nation, trailing only Los Angeles. (2) Chicagoland has over 4,500 food industry establishments offering employment opportunities for students in food science and nutrition disciplines. These being food and beverage manufacturing, packaging, distribution, and equipment.

With the introduction of the four-year Food Science and Nutrition, the department will be able to recruit students who want a pathway into professional food industry positions. We anticipate total enrollment in Food Science and Nutrition programs will steadily increase as a result of the four-year undergraduate FSN degree. This may also boost the FDSN graduate programs and result in higher visibility and healthy growth for the FDSN Department.

Narrative description of any wage analysis the institution may have performed, including any consideration of Bureau of Labor Statistics wage data related to the new program.

According to the Bureau of Labor Statistics, the Greater Chicago area has the highest salary level in the US at \$92,900/year among Food Scientists and Technologists and ranks the highest in the US for total jobs.

The FDSN Department will work closely with the Career Management Center to provide the UG program details and highlight the potential companies and industry liaisons.

Below is a shortlist of food companies located in Chicago, which are considered hiring prospects for Food Science and Nutrition majors.

(Graphics available upon request.)

Narrative description of how the program was reviewed or approved by, or developed in conjunction with, one or more of the following: a) business advisory committees; b) program integrity boards; c) public or private oversight or regulatory agencies (not including the state licensing/authorization agency and accrediting agency); and d) businesses that would likely employ graduates of the program. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program.

The program was developed with faculty, student, and food industry (all along the supply chain) involvement. In addition, we reached out to advisors from other Universities (Purdue, UC Davis (including Emeriti Food and Ag), Penn State, Wisconsin), as well as stakeholders in health care, growing industry, pharma, and FDA (colleagues here at IIT and in Washington DC). We also received comments from our colleagues in Biology, Chemistry, and ID.

## Admission Entry Details

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Available Fall Admit

Available Spring  
Admit

Available Summer  
Admit

Available On  
Campus

Available Online

Available Full-Time

Available Part-Time

Available  
International

Available Domestic

What are the enrollment estimates?

Year 1 10-15

Year 2 45-50

Year 3 75

Attach Additional  
Program  
Justification  
Document(s)

[FDSN UG Proposal - January 28 2020 BBF Feb5 2020.pdf](#)

## Academic Information

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### Advising

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Since quality advising is a key component of good retention, graduation, and career placement, how will students be mentored? What student professional organizations will be formed? How will the department work with the Career Services office to develop industry connections?

As FDSN already manages MS, MAS, and PhD programs, existing advising procedures and strategies in the department will continue in this new degree program. Each student will have an academic faculty and staff advisor assigned in their first semester. Mandatory advising meetings will be enforced. Advising loads will be split among faculty. We will also institute a student mentoring program, where MS and PhD students will serve to help undergraduates navigate Illinois Tech, food industry interactions and experiences, and on-campus research activities. Additionally, student mentors will engage undergraduates in the Food Science Club, currently all graduate students. Competitive events will be organized and encouraged. The IFT annual meeting is hosted in Chicago each summer, which will bring students back to their alma mater yearly.

How will advising responsibilities be shared between the departments?

### Program Resources

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Which program resources are necessary to offer this program?

Personnel  
Facilities

Describe the personnel requirements necessary to offer the program. Describe how and when resources will be made available to hire any additional personnel that are required.

The department currently has 8 tenure/tenure track faculty, 1 teaching faculty professor, and 2 full time staff who are also adjunct industry professors. We also have one teaching faculty from INTM who serves as an adjunct in our dept, one IFSH engineer who teaches as a lab class as needed, and 3 other adjunct faculty from outside Illinois Tech who contribute to our program. With new courses in development (n=15), this will greatly increase the teaching load of our current faculty. Each faculty member would be required to teach a minimum of 2 additional courses on top of their current teaching load. For our most research active faculty, this will be extremely difficult. Byouts will be required to hire adjunct faculty for faculty relief. As the program grows, faculty lines will be requested to broaden the scope of our department and help with instruction. Teaching assistantships will be required, especially for laboratory courses, which are labor intensive and require more one-on-one with students. Our MS and PhD programs will be ideal for teaching assistantship resourcing and augmenting faculty instruction.

Because of the multidisciplinary nature of food science and nutrition, the departmental course offerings for the FDSN degree rest firmly on prerequisite courses already found in math and sciences at Illinois Tech.

Our programs are strongest when we leverage the expertise across all of Illinois Tech. Emphasis has been given to provide coursework that bridges many different disciplines within the university. We believe this strengthens not only FDSN students, but the students from those disciplines who will have access to FDSN offerings in turn.

Describe the facilities requirements necessary to offer the program. Describe how and when resources will be made available to obtain any additional facilities that are required.

Based on anticipated enrollments, lecture facilities to accommodate in-class seating for 20-30 students per class session with adequate digital capabilities for audio-visual media presentations will be required. The following laboratory types for 20 students per lab class will be required:

1) Food Chemistry/ Food Analysis/ Food Properties Labs: Standard wet chemistry lab amenities - Wet chemistry certified lab benches, cabinets, sinks, eye wash stations, chemical storage, fume hood, refrigerator / freezers for food material storage, variety of analytical instrumentation, including HPLC, GC MS, spectrophotometers, pH meters, colorimeter, vortex, water baths, sonicators, Soxhlet and Kjeldahl apparatus, vacuum dryer, moisture dryer, distilled water system, lyophilizer, analytical scales, among other equipment.

Food Properties Lab that includes small equipment such as food colorimeter, refractive index unit, water activity, rheological analyzer, texture analyzer, pH meter, and more.

2) Bio- and clinical- chemistry laboratory: Standard wet biochemistry lab amenities, much of which is similar to wet chemistry needs, including certified lab benches, cabinets, sinks, eye wash stations, chemical storage, fume and biologics hoods, centrifuges, analytical scales, microscopes, vortex machines, pipettes, water baths, etc. In addition, cell culture capability, electrophoresis, microplate washers and readers, freezers, refrigerators.

3) Food Innovation Kitchen and Lab: Laboratory space for students to have hands on development training working with food, understanding how food chemistry is leveraged to develop food products with specific requirements to meet consumer demands. The kitchen lab should be culinary grade kitchen space compliant with Illinois State Dept. Public Health code to allow for tasting and food consumption. Individual food handling/ cooking stations with instructor demonstration island is required. An applications lab like this will leverage the Food Properties lab to create real world experiences for students as they verify and document specifications requirements objectively, Refrigerators and freezers sized to support course load requirements. Wet mop sink, culinary grade flooring, ventilation for odor control, variety of kettles, cookers, mixers and smallwares. (See sample detail for Food Innovation Kitchen and Food Properties Lab)

4) Food Operations/ Unit Operations Pilot Plant: A food-grade pilot plant space sized to accommodate R&D scale unit operations sufficient to demonstrate and handle food materials at least in the following processes: thermal, non-thermal, freezing, dehydration, mixing, blending, pumping, conveying and packaging. The pilot plant should also support demonstrations of equipment and plant sanitation protocols. This type of pilot plant is located on the IIT Moffett Campus in Bedford Park, IL and requires students to travel for courses which use this facility.

5) Food Microbiology labs: A microbiology laboratory space for students to study microorganisms and their reaction to foods and their environments. The lab will need appropriate equipment for testing / detecting / tracking spoilage and pathogenicity, predicting microbial growth and death with computer models, understand genetic basis for pathogenicity and the reaction of microorganisms to new preservation methods, inhibitors, and stressors impacting survival. Homogenizers, dilution machines, dispensers, and labelers, microscopes, automated PCR machines for DNA amplification to identify of pathogens, centrifuges, hoods, incubators, along with basic items such as analytical scales, test tubes, petri dishes, pipettes, and spatulas are also used in food microbiology labs. Currently all food microbiology labs are held at the IIT Moffett campus as part of the IFSH laboratory space and requires students to

travel for courses which use this facility.

## Proposed Catalog Entry

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### Admission

#### Requirements

Illinois Tech's Bachelor of Science degree in Food Science and Nutrition prepares its graduates for careers that involve the application of science, technology, engineering and regulation to address modern-day food- and health-related problems. This unique program provides a foundation in food science and nutrition with contemporary practical training in topics pertinent to the food, manufacturing, pharma/biotech, and agricultural industries, including operations management, computation and data analytics, regulatory, and design thinking. Our program, designed with input from the food industry and other related industries, develops professionals who understand how the food industry functions now, and will be capable of propelling that industry to where it needs to be in the future.

Graduates from the program are prepared to step into a multitude of roles, including digitally-enabled food production; application of new and emerging food processing technologies; food safety and regulatory compliance, application of novel techniques and ingredients in food product development and formulation testing, address issues of sustainable diets, and intersections between business, health, human behavior, global food economies, and resources.

#### Course Requirements

<b>Food Science and Nutrition Requirements</b>	<b>(39)</b>
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<a href="#">FDSN 100</a>	Introduction to the Profession	2
<a href="#">FDSN 201</a>	Nutrition and Wellness	3
<a href="#">FDSN 300</a>	Nutrition Through the Life Cycle	3
<a href="#">FDSN 304</a>	Food Biotechnology	3
<a href="#">FDSN 310</a>	Food Chemistry with Lab	3
<a href="#">FDSN 311</a>	Food Analysis and Properties	3
<a href="#">FDSN 320</a>	Food Law, Labels, and Health Claims	3
<a href="#">FDSN 401</a>	Nutrition, Metabolism, and Health	3
<a href="#">FDSN 405</a>	Food and Behavior	3
<a href="#">FDSN 410</a>	Food Plant Operations	3
<a href="#">FDSN 411</a>	Food Microbiology with Laboratory	4
<a href="#">FDSN 412</a>	Preservation Processing	3
<a href="#">FDSN 420</a>	US Food Safety Regulatory Systems	3

<b>Program Elective Courses</b>	<b>(15)</b>
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Select 15 credit hours	15
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<a href="#">FDSN 210</a>	Introduction to Culinology	2
<a href="#">FDSN 301</a>	Exploring Food Science & Tech	3
<a href="#">FDSN 312</a>	Food and Natural Products Toxicology	3
<a href="#">FDSN 314</a>	Sustainable Food Systems	3
<a href="#">FDSN 316</a>	Cultural Foods with Lab	3
<a href="#">FDSN 318</a>	Culinary Entrepreneurship	3
<a href="#">FDSN 413</a>	Food Fermentation (w/lab and plant field trips)	3
<a href="#">FDSN 417</a>	Management of Food Quality Control	3
<a href="#">FDSN 418</a>	Introduction to Food Design	3
<b>Mathematics Requirements</b>		<b>(8)</b>
<a href="#">MATH 151</a>	Calculus I	5
or <a href="#">MATH 152</a>	Calculus II	
<a href="#">MATH 225</a>	Introductory Statistics	3
or <a href="#">MATH 425</a>	Statistical Methods	
<b>Science Requirements</b>		<b>(22)</b>
<a href="#">BIOL 107</a>	General Biology Lectures	3
<a href="#">BIOL 210</a>	Microbiology	3
<a href="#">CHEM 124</a>	Principles of Chemistry I with Laboratory	4
<a href="#">CHEM 125</a>	Principles of Chemistry II with Laboratory	4
<a href="#">CHEM 237</a>	Organic Chemistry I	4
<a href="#">PHYS 123</a>	General Physics I: Mechanics	4
<b>Computer Science Requirements</b>		<b>(2)</b>
<a href="#">CS 105</a>	Introduction to Computer Programming	2
or <a href="#">CS 110</a>	Computing Principles	
<b>Humanities and Social Sciences Requirements</b>		<b>(21)</b>
<a href="#">See Illinois Tech Core Curriculum, sections B and C</a>		21
<b>Interprofessional Project (IPRO) Requirements</b>		<b>(6)</b>
<a href="#">See Illinois Tech Core Curriculum, section E</a>		6
<b>Technical Elective Requirements</b>		<b>(3-4)</b>
Select 3-4 credit hours		3-4
<a href="#">BIOL 214</a>	Genetics	3
or <a href="#">BIOL 430</a>	Human Physiology	
<a href="#">BIOL 403</a>	Biochemistry	4

or <a href="#">BIOL 404</a>	Biochemistry Laboratory	
<a href="#">CHEM 239</a>	Organic Chemistry II	3
or <a href="#">CHEM 247</a>	Analytical Chemistry	

**Free Electives (12)**

Select 12 credit hours 12

Total Credit Hours 128-129

Sample Curriculum/Program Requirements

		Year 1	
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">FDSN 100</a>	2	<a href="#">BIOL 107</a>	3
<a href="#">MATH 151</a>	5	<a href="#">CHEM 125</a>	4
<a href="#">CHEM 124</a>	4	<a href="#">FDSN 201</a>	3
<a href="#">CS 105</a>	2	<a href="#">SOCIAL SCIENCES ELECTIVE</a>	3
		<a href="#">HUMANITIES 200-LEVEL COURSE</a>	3
	13		16

		Year 2	
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">CHEM 237</a>	4	<a href="#">MATH 225</a>	3
<a href="#">BIOL 210</a>	3	<a href="#">FDSN 310</a>	3
<a href="#">PHYS 123</a>	4	<a href="#">FDSN 300</a>	3
<a href="#">FDSN ELECTIVE</a>	3	<a href="#">NON-FDSN ELECTIVE<sup>1</sup></a>	3
<a href="#">HUMANITIES OR SOCIAL SCIENCES ELECTIVE</a>	3	<a href="#">HUMANITIES ELECTIVE (300+)</a>	3
	17		15

		Year 3	
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">FDSN 304</a>	3	<a href="#">FDSN 401</a>	3
<a href="#">FDSN 311</a>	3	<a href="#">FDSN ELECTIVE</a>	3
<a href="#">FDSN 320</a>	3	<a href="#">IPRO 397</a>	3
<a href="#">CHEM/BIO TECHNICAL ELECTIVE</a>	3	<a href="#">FDSN ELECTIVE</a>	3
<a href="#">HUMANITIES ELECTIVE (300+)</a>	3	<a href="#">NON-FDSN ELECTIVE<sup>1</sup></a>	3
<a href="#">NON-FDSN ELECTIVE<sup>1</sup></a>	3	<a href="#">SOCIAL SCIENCES ELECTIVE (300+)</a>	3
	18		18

		Year 4	
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">IPRO 497</a>	3	<a href="#">FDSN 412</a>	3
<a href="#">FDSN 420</a>	3	<a href="#">FDSN 411</a>	4
<a href="#">FDSN ELECTIVE</a>	3	<a href="#">FDSN ELECTIVE</a>	3
<a href="#">FDSN 410</a>	3	<a href="#">FDSN 430</a>	3

SOCIAL SCIENCES ELECTIVE (300+)

3

NON-FDSN ELECTIVE<sup>1</sup>

3

15

16

Total Credit Hours: 128

1

Taken in consultation with Advisor

Specialization

Requirements

### Program Outcomes and Assessment Process

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What are your learning objectives in this program? Please list each learning objective in the boxes below:

*Note: These should be the same as described in your assessment plan at the bottom of this form.*

Upload your  
assessment plan  
here:

### Partner Degree Program Requirements

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Partner institution

Partner institution  
contact information

Partner degree title  
with major

Partner program  
director for IIT

Program format  
type

Shared credit for  
partner program

How are credits  
shared?

Which courses may  
be shared?

Partner program specific admission requirements, including the methodology to be used to confirm the minimum cumulative GPA for admission (a grading scale crosswalk will be beneficial).

Applicant admission process description (nomination of applicants by partner institution, acceptance of nominated applications by Illinois Institute of Technology).

Attach  
Supplemental  
Material for Partner  
Institution

## **Undergraduate Program Requirements**

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What courses will  
factor the major  
GPA?

## **Co-Terminal Degree Requirements**

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## **Double Major Requirements**

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Program Details

## Undergraduate Degree Requirements

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Minimum credit hours 128

Specialization required?  
No

Notes about specialization requirement

Minor required?  
No

How many credit hours are required for the minor?

Details about the minor requirement

Required minimum GPA for admission

Number of shared credit hours allowed.

Which courses may be shared?

## Proposed General Curriculum

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Degree credit hours required

Specialization credit hour requirement

List Major Course Requirements



<b>FDSN 310 FOOD CHEMISTRY</b>		Course FDSN 310 FOOD CHEMISTRY Not Found (in development)	
<b>FDSN 311 FOOD ANALYSIS AND PROPERTIES</b>		Course FDSN 311 FOOD ANALYSIS AND PROPERTIES Not Found (in development)	3
<b>FDSN 320 FOOD LAW, LABELS AND HEALTH CLAIMS</b>		Course FDSN 320 FOOD LAW, LABELS AND HEALTH CLAIMS Not Found (in development)	3
<b>FDSN 304 FOOD BIOTECHNOLOGY</b>		Course FDSN 304 FOOD BIOTECHNOLOGY Not Found (in development)	3
<b>FDSN 410 FOOD PLANT OPERATIONS</b>		Course FDSN 410 FOOD PLANT OPERATIONS Not Found (in development)	3
<b>FDSN 412 PRESERVATION PROCESSING</b>		Course FDSN 412 PRESERVATION PROCESSING Not Found (in development)	3
<b>FDSN 420 US FOOD SAFETY REGULATORY SYSTEMS</b>		Course FDSN 420 US FOOD SAFETY REGULATORY SYSTEMS Not Found (in development)	3
<b>FDSN 430 CAPSTONE</b>		Course FDSN 430 CAPSTONE Not Found (students choose 1 of 2 focus areas)	3
<b>FDSN 411 FOOD MICROBIOLOGY WITH LAB</b>		Course FDSN 411 FOOD MICROBIOLOGY WITH LAB Not Found (in development)	3
All these courses have been submitted for approval			
<b>FDSN 201</b>	Nutrition and Wellness		3
<b>FDSN 300</b>	Nutrition Through the Life Cycle		3
<b>FDSN 401</b>	Nutrition, Metabolism, and Health		3
<b>FDSN 405</b>	Food and Behavior		3
<b>FDSN 301</b>		Exploring Food Science & Tech	3
<b>FDSN 210 INTRO TO CULINOLOGY</b>		Course FDSN 210 INTRO TO CULINOLOGY Not Found	3
<b>FDSN 312 FOOD AND NATURAL PRODUCTS TOXICOLOGY</b>		Course FDSN 312 FOOD AND NATURAL PRODUCTS TOXICOLOGY Not Found	3
<b>FDSN 314 SUSTAINABLE FOOD SYSTEMS</b>		Course FDSN 314 SUSTAINABLE FOOD SYSTEMS Not Found	3
<b>FDSN CULTURAL FOODS WITH LAB</b>		Course FDSN CULTURAL FOODS WITH LAB Not Found	3
<b>FDSN 318 CULINARY ENTREPRENEURSHIP</b>		Course FDSN 318 CULINARY ENTREPRENEURSHIP Not Found	3
<b>FDSN 413 FOOD FERMENTATION</b>		Course FDSN 413 FOOD FERMENTATION Not Found	3
<b>FDSN 417 MANAGEMENT OF FOOD QUALITY CONTROL</b>		Course FDSN 417 MANAGEMENT OF FOOD QUALITY CONTROL Not Found	3

<b>FDSN 418 INTRO TO FOOD DESIGN</b>		<b>Course FDSN 418 INTRO TO FOOD DESIGN Not Found</b>	3
Program Electives (15 credit h required)			
List Mathematics Requirements			
<a href="#"><u>MATH 151</u></a>	Calculus I		5
or <a href="#"><u>MATH 152</u></a>	Calculus II		
<a href="#"><u>MATH 225</u></a>	Introductory Statistics		3
or <a href="#"><u>MATH 425</u></a>	Statistical Methods		
List Science Requirements			
<a href="#"><u>BIOL 107</u></a>	General Biology Lectures		3
<a href="#"><u>BIOL 210</u></a>	Microbiology		3
<a href="#"><u>CHEM 124</u></a>	Principles of Chemistry I with Laboratory		4
<a href="#"><u>CHEM 125</u></a>	Principles of Chemistry II with Laboratory		4
<a href="#"><u>CHEM 237</u></a>	Organic Chemistry I		4
<a href="#"><u>PHYS 123</u></a>	General Physics I: Mechanics		4
List Computer Science Requirements			
<a href="#"><u>CS 105</u></a>	Introduction to Computer Programming		2
or <a href="#"><u>CS 110</u></a>	Computing Principles		
List Humanities and Social Sciences Requirements			
See Illinois Tech Core Curriculum, Sections B and C			
List Interprofessional Project (IPRO) Requirements			
See Illinois Tech Core Curriculum, Section E			
List Technical Elective Course Options			
<a href="#"><u>CHEM 239</u></a>	Organic Chemistry II		3
or <a href="#"><u>CHEM 247</u></a>	Analytical Chemistry		
<a href="#"><u>BIOL 214</u></a>	Genetics		3

or <a href="#">BIOL 430</a>	Human Physiology		
<a href="#">BIOL 403</a>	Biochemistry		4
or <a href="#">BIOL 404</a>	Biochemistry Laboratory		
Only 1 course (3-4 credit h) required			
List Free Elective	12		
Credit Hours (if applicable)			
Semester-by-semester plan of study for the degree program			
			Year 1
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">FDSN 100 INTRO TO THE PROFESSION</a>	3	<a href="#">BIOL 107</a>	3
<a href="#">MATH 151</a>	5	<a href="#">CHEM 125</a>	4
<a href="#">CHEM 124</a>	4	<a href="#">FDSN 201</a>	3
<a href="#">CS 105</a>	2	<a href="#">SOCIAL SCIENCES ELECTIVE</a>	3
		<a href="#">HUMANITIES 200-LEVEL COURSE</a>	3
	14		16
			Year 2
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">CHEM 237</a>	4	<a href="#">MATH 225</a>	3
<a href="#">BIOL 210</a>	3	<a href="#">FDSN 310 FOOD CHEMISTRY WITH LAB</a>	3
<a href="#">PHYS 123</a>	4	<a href="#">FDSN 300</a>	3
<a href="#">FDSN ELECTIVE</a>	3	<a href="#">NON-FDSN ELECTIVE</a> taken in consultation with Adisor	3
<a href="#">HUMANITIES OR SOCIAL SCIENCES ELECTIVE</a>	3	<a href="#">HUMANITIES ELECTIVE (300+)</a>	3
	17		15
			Year 3
Semester 1	Credit Hours	Semester 2	Credit Hours
<a href="#">FDSN 304 FOOD BIOTECHNOLOGY</a>	3	<a href="#">FDSN 401</a>	3
<a href="#">FDSN 311 FOOD ANALYSIS AND PROPERTIES</a>	3	<a href="#">FDSN ELECTIVE</a>	3
<a href="#">FDSN 320 FOOD LAW, LABELS, AND HEALTH CLAIMS</a>	3	<a href="#">IPRO 397</a>	3
<a href="#">CHEM/BIO TECHNICAL ELECTIVE</a>	3	<a href="#">FDSN ELECTIVE</a>	3
<a href="#">HUMANITIES ELECTIVE (300+)</a>	3	<a href="#">NON-FDSN ELECTIVE</a> taken in consultation with Adisor	3
<a href="#">NON-FDSN ELECTIVE</a> taken in consultation with Adisor	3	<a href="#">SOCIAL SCIENCES ELECTIVE (300+)</a>	3
	18		18
			Year 4
Semester 1	Credit Hours	Semester 2	Credit Hours

I <del>PRO</del> 497	3	FDSN 412 PRESERVATION PROCESSING	3
FDSN 420 US FOOD SAFETY REGULATIONS	3	FDSN 411 FOOD MICROBIOLOGY WITH LAB	3
FDSN ELECTIVE	3	FDSN ELECTIVE	3
FDSN 410 FOOD PLANT OPERATIONS	3	FDSN 430 CAPSTONE	3
SOCIAL SCIENCES ELECTIVE (300+)	3	NON-FDSN ELECTIVE taken in consultation with Adisor	3
	15		15
Total Credit Hours: 128			

## Graduate Program Requirements

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### Certificate

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Is at least 50% of the requested certificate program made up of existing courses, or is the program a subset of an existing degree program?

Yes, one or both of these conditions apply.

No, neither of these apply.

Minimum credit hours

Is the certificate program a competency-based education (CBE) program? This would include credit-based, direct assessment or hybrid CBE programs.

How will the certificate program be offered? Select all that apply. (See HLC's Glossary for definitions of distance and correspondence education.)

Has the institution outsourced a portion of the program to an entity not accredited by an agency recognized by the U.S. Department of Education?

List Certificate Course Requirements

### Professional Master's Degree

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Minimum credit hours

400-level credit hour limit?

How many hours allowed?

500-600-level credit hour limits:

Minimum:

Maximum:

700-level credit hour maximum:

Project course required?

Project course credit hours minimum

Maximum

Course Number

List specific details about the project option

Project report/review required?

Comprehensive exam required?

Seminar/Colloquium required?

Seminar/colloquium credit hours required

Course Number

Required specialization/concentration?

Specialization/concentration credit hour requirement:

Notes about the specialization/concentration requirement

Is there a general track for this degree?

List Core Course  
Requirements

List Elective Course  
Options

How will current graduate students in your department request a transfer to this major?

## Master of Science (M.S.) Degree

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Minimum credit  
hours

400-level credit hour limit?

How many hours allowed?

500-600-level credit hour limits:

Minimum:

Maximum:

700-level credit hour maximum:

Thesis required?

List specific details  
about the thesis  
option

Comprehensive  
exam required?

By what method is  
the thesis  
defended?

Research course credit hours

Minimum

Maximum

Project course  
required?

List specific details  
about the project  
option

Project report/  
review required?

Project course credit hours                      Minimum                      Maximum                      Course Number

Seminar/Colloquium  
required?

Seminar/colloquium credit hours required                      Course Number

Required  
specialization/  
concentration?

Specialization/concentration credit hour requirement:

Notes about the  
specialization/  
concentration  
requirement

Is there a general track for this degree?

List Core Course  
Requirements

List Elective Course  
Options

How will current graduate students in your department request a transfer to this major?

**JD/JSD**

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**Ph.D.**

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Minimum credit  
hours

400-level credit hour limit?

How many hours allowed?

500-600-level credit hour limits:

Minimum:

Maximum:

700-level credit hour maximum:

By what method is the qualifying exam requirement satisfied for this program? Include the number of earned/in-progress credit hours when the qualifying exam must be completed.

The comprehensive exam is required to be completed at least one year prior to the thesis defense. Please identify the time and method of examination for this program.

The oral defense must be completed and final dissertation documents submitted to the research committee by the deadline in the Sequence of Events. Describe the method of examination for this program.

Seminar/Colloquium  
required?

Seminar/colloquium credit hours required	Course Number
Research course credit hours      Minimum	Maximum
Required specialization/ concentration?	

Specialization/concentration credit hour requirement:

JD/JSD Degree  
Requirements

List Core Course  
Requirements

List Elective Course  
Options

Does this program accept transfer credit?

How will the  
transfer credit be  
applied to the  
degree  
requirements (e.g.  
block transfer,  
course-by-course  
articulation).



# Specializations/Concentrations

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Report to Faculty  
Council

Report from Faculty  
Council

Reviewer  
Comments

