

# FOOD SCIENCE & HUMAN NUTRITION: FOOD SCIENCE, PHD

*Doctor of Philosophy in Food Science and Human Nutrition: Food Science Concentration*

**On Campus:** Master of Science in Food Science and Human Nutrition, students are required to select a concentration:

- Food Science (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/food-science/>)
- Human Nutrition (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/human-nutrition/>)

**Online:** The focus of the online Master of Science in Food Science and Human Nutrition (<https://fshn.illinois.edu/online/>) is Food Science. Students are not required to select a concentration.

## Graduate Degree Programs in Food Science & Human Nutrition

### Graduate Majors:

- Food Science & Human Nutrition, MS (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/>) (on campus & online)

#### concentrations:

- Food Science (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/food-science/>)
- Human Nutrition (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/human-nutrition/>)
- Food Science and Human Nutrition, MS – Professional Science Master's (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-ms/professional-science-masters/>)

- Food Science and Human Nutrition, PhD (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-phd/>)

#### concentrations:

- Food Science (p. 1)
- Human Nutrition (<http://catalog.illinois.edu/graduate/aces/food-science-human-nutrition-phd/human-nutrition/>)

### Joint Degree Program:

- Food Science & Human Nutrition, PhD and Master of Public Health, MPH ([http://catalog.illinois.edu/graduate/aces\\_ahs/joint-degree/food-science-human-nutrition-phd-public-health-mp/](http://catalog.illinois.edu/graduate/aces_ahs/joint-degree/food-science-human-nutrition-phd-public-health-mp/))

## Research Areas

In addition to receiving training in the general field of food science or human nutrition, students have the opportunity to conduct research in the following areas of specialization:

- Food processing, engineering, and biotechnology
- Food ingredients, properties, and interactions
- Food microstructures, micro-carriers, and nanotechnology
- Food chemistry
- Food microbiology and biomass conversion
- Food safety and security
- Sensory sciences
- Dietary quality and food and nutrition patterns for optimal health
- Nutrition and disease interactions, including cancer, metabolic disorders, and gastrointestinal health
- Nutrition across the life span
- Biochemical and molecular nutrition
- Clinical nutrition
- Community nutrition

For additional information go to [fshn.illinois.edu/graduate](http://fshn.illinois.edu/graduate) (<http://fshn.illinois.edu/graduate/>).

The PSM involves rigorous scientific training in the area of food science and/or human nutrition; additionally, instruction is provided in applied business knowledge and skills. This program is designed for those who seek careers in a science-based setting with significant managerial and leadership responsibilities. For additional information go to [psm.illinois.edu/prospectivestudents/programs/foodscience.htm](http://psm.illinois.edu/prospectivestudents/programs/foodscience.htm) (<http://psm.illinois.edu/prospectivestudents/programs/foodscience.htm>).

## Admission

In addition to meeting the Graduate College admission requirements, a student planning to pursue a graduate degree in the department should have a baccalaureate degree in a recognized field of biological, physical, agricultural, or engineering science. Background deficiencies may be removed with graduate credit courses designed for this purpose. Graduate Record Examination (GRE) scores are required of all applicants, and those whose native language is not English are required to submit the results of the TOEFL or IELTS as evidence of English proficiency. Minimum TOEFL and IELTS scores can be found at [grad.illinois.edu/admissions/instructions/04c](http://grad.illinois.edu/admissions/instructions/04c) (<http://www.grad.illinois.edu/admissions/instructions/04c/>). Students can be admitted to start in fall, spring, or summer semesters except for the PSM concentration, which admits fall semester only. For information on the role faculty have in the admissions process go to [fshn.illinois.edu/graduate/applying](http://fshn.illinois.edu/graduate/applying) (<http://www.fshn.illinois.edu/graduate/applying/>).

## Internship in Dietetics

The Department of Food Science and Human Nutrition offers a dietetic internship for master's and doctoral students specializing in human nutrition. Completion of the degree and the internship qualifies the student to take the Academy of Nutrition and Dietetics registration examination administered by the Commission on Dietetic Registration. For information on our dietetic internship program please contact Ms. Jessica Madson ([jamadson@illinois.edu](mailto:jamadson@illinois.edu)).

## Online Program

A non-thesis Master of Science in Food Science program is offered via live, synchronous online sessions using distance education technology. The program ensures the same degree of excellence, and courses are instructed by the same faculty, as the on-campus non-thesis program. Courses are typically offered in the evening. For requirements and additional information, please contact Dr. Dawn Bohn at [dbrehart@illinois.edu](mailto:dbrehart@illinois.edu).

## Graduate Teaching Experience

Teaching is neither a Graduate College nor a FSHN requirement. A limited number of teaching assistantships are available to FSHN graduate students. Students are selected to be Graduate Teaching Assistants by the Department Head in consultation with the course instructor.

## Financial Aid

Illinois PSM students may not hold assistantships or other tuition and fee waiver-generating appointments; statutory waivers and tuition scholarships are accepted. Financial aid for non-PSM graduate students is available in the form of fellowships, teaching and research assistantships, and tuition and partial fee waivers. Qualified candidates are considered for financial support upon application. Additional information on financial aid for graduate students can be found at [fshn.illinois.edu/graduate/financial-assistance](http://fshn.illinois.edu/graduate/financial-assistance) (<http://fshn.illinois.edu/graduate/financial-assistance/>).

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If a candidate has a master's degree in a related area, a minimum of 64 graduate hours, including up to 38 graduate hours of thesis research, must be completed. In consultation with the adviser and advisory committee, the remainder of the 64 graduate hours required for the degree consists of courses selected from inside or outside the department that are appropriate for training in the student's field of specialization. Upon completion of all necessary formal courses and special options, the student is required to take an oral preliminary examination. After passage of the preliminary examination, the student's activities are primarily devoted to thesis research. Upon submission of the dissertation, the candidate is required to pass a final oral examination before a graduate faculty committee.

Undergraduate training must include statistics (ACE 261, CPSC 241, ECON 202, MATH 161, PSYC 235, SOC 280, or STAT 100), nutrition (equivalent to FSHN 220), and systemic physiology (equivalent to MCB 246). These undergraduate courses are not required for admission, but must be completed early in the graduate program and do not count toward concentration requirements. M.S. degrees require at least 12 hours of 500-level course work (including thesis research), and at least 8 of these 12 hours must be in the major field for graduation.

Additional courses may be required beyond the concentration minimum, per Advisory Committee recommendations, depending upon student/advisor learning objectives. A student whose prior education includes course work with identical or similar content to those specified above will be guided by their advisor and Advisory Committee regarding the

selection of additional course work needed to meet the minimum hours of the HN concentration.

Students are encouraged to take new courses, rather than retake required courses they have already taken. If you have already taken a required course at the University of Illinois, it is highly recommended that you do not retake it. No petition is required. If you have taken a very similar course at another university, you are strongly encouraged to petition for acceptance of that course in lieu of the required course. Courses should be selected to expand and strengthen your knowledge in core and related disciplines, and/or to increase your research capabilities. Retaking a course does not meet that objective. For additional advice on this topic, contact your advisor and faculty advisory committee.

Students are required to enroll in another seminar course if they have a conflict that precludes their enrollment in FSHN 597 or NUTR 500. The seminar course may be offered by another department.

Course selection is flexible beyond this list if decided in consultation with advisor/advisory committee.

*For additional details and requirements refer to the department's graduate handbook (<http://fshn.illinois.edu/graduate/student-handbook/>) and the Graduate College Handbook (<http://www.grad.illinois.edu/gradhandbook/>).*

### Entering with approved M.S./M.A. degree

Code	Title	Hours
	Concentration-specific coursework selected in consultation with advisor	26
FSHN 599	Thesis Research (max applied toward degree)	0 to 16
<b>Total Hours in residence</b>		<b>64</b>

### Entering with approved B.S./B.A. degree

Code	Title	Hours
	Concentration-specific coursework selected in consultation with advisor	26
FSHN 599	Thesis Research (max applied toward degree)	70
<b>Total Hours</b>		<b>96</b>

### Other Requirements

Requirement	Description
Other requirements may overlap	
Minimum Hours Required Within the 8 Unit:	
Minimum 500-level Hours Required	12
Overall	
Additional courses may be required beyond the concentration minimum per Advisory Committee recommendation	
Qualifying Exam Required	Yes
Preliminary Exam Required	Yes
Final Exam/Thesis Defense Required	Yes
Dissertation Deposit Required	Yes
Minimum GPA:	3.0

Code	Title	Hours
<b>Total Hours for Concentration in Food Science</b>		<b>26-27</b>
<b>Required Courses:</b>		<b>16-17</b>
FSHN 481	Food Processing Unit Operations I	2
FSHN 483	Food Processing Unit Operations II	2
FSHN 514	Advanced Food Chemistry	3
FSHN 573	Advanced Food Microbiology	3
FSHN 593	Seminar in Foods and Nutrition	2
FSHN 595	Advanced Topics in Food Science and Human Nutrition (Section: Nutrition for Food Scientists)	4
FSHN 597 or NUTR 500	Graduate Seminar Nutritional Sciences Seminar	0-1
<b>Electives:</b>		
<b>Food Processing and Engineering</b>		
ABE 498	Special Topics (Section: Engineering Application of Nano-scale Biology)	1 to 4
FSHN 460	Food Processing Engineering	3
FSHN 482	Food Processing Unit Operations I Lab	1
FSHN 484	Food Processing Unit Operations II Lab	1
<b>Food Chemistry</b>		
FSHN 595	Advanced Topics in Food Science and Human Nutrition (Section: Advanced Food Processing)	1 to 4
FSHN 416	Food Chemistry Laboratory	3
FSHN 517	Fermented & Distilled Beverages	2
FSHN 518	Chemistry of Lipids in Foods	3
FSHN 519	Flavor Chemistry and Analysis	4
FSHN 595	Advanced Topics in Food Science and Human Nutrition (Section: Transport in Food Biopolymers)	1 to 4
FSHN 595	Advanced Topics in Food Science and Human Nutrition (Section: Water Relations in Foods)	1 to 4
<b>Food Microbiology</b>		
FSHN 574	Value Added Biotransformation	3
FSHN 595	Advanced Topics in Food Science and Human Nutrition (Section: Food Safety for Global Food Security)	1 to 4
<b>Others (of interest to many)</b>		
FSHN 424	Biopsychology of Ingestive Behavior	3
FSHN 440	Applied Statistical Methods I	4
FSHN 502	Advanced Sensory Science	3
FSHN 592	Graduate Internship Experience	2
FSHN 598 or NUTR 593	Advanced Special Problems (Up to 2 hours of FSHN 598 for thesis degrees.) Individual Topics in Nutrition	1-8
CPSC 541	Regression Analysis	4
CPSC 542		5
NUTR 550	Grantsmanship and Ethics	3

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**department head:** Nicki Engeseth

**associate head of graduate programs:** Michael Miller  
(mille216@illinois.edu)

**overview of admissions & requirements:** <https://fshn.illinois.edu/graduate/apply> (https://fshn.illinois.edu/graduate/apply/)

**overview of grad college admissions & requirements:** <https://grad.illinois.edu/admissions/apply> (https://grad.illinois.edu/admissions/apply/)

**department website:** <https://fshn.illinois.edu/>

**program website:** <https://fshn.illinois.edu/graduate/program-overview> (https://fshn.illinois.edu/graduate/program-overview/)

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

**college website:** <https://aces.illinois.edu/>

**address:** 260 Bevier Hall, 905 South Goodwin Avenue, Urbana, IL 61801

**phone:** (217) 244-4498

**email:** FSHNGradAdmissions@illinois.edu  
(fshngradadmissions@illinois.edu)