FOOD SCIENCE & HUMAN NUTRITION: FOOD SCIENCE, PHD

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

department head: Nicki Engeseth
associate head of graduate programs: Michael Miller (mille216@illinois.edu)
overview of admissions & requirements: https://fshn.illinois.edu/graduate/apply
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply
department website: https://fshn.illinois.edu/
program website: https://fshn.illinois.edu/graduate/food-science
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)

For the Doctor of Philosophy in Food Science and Human Nutrition, students are required to select a concentration:

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

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-mph/)

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/).

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).

Information listed in this catalog is current as of 01/2021
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://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://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 Madsen (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.

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/).

Doctor of Philosophy in Food Science and Human Nutrition, Food Science Concentration

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.

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/).

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**Electives:**
- Food Processing and Engineering
  - ABE 498 Engineering Application of Nano-scale Biology | 3 |
  - FSHN 460 Food Processing Engineering | 3 |
  - FSHN 482 Food Processing Unit Operations I Lab | 1 |
  - FSHN 484 Food Processing Unit Operations II Lab | 1 |
  - FSHN 595 Advanced Food Processing | 2 |

- Food Chemistry
  - 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 Transport in Food Biopolymers | 1 |
  - FSHN 595 Water Relations in Foods | 4 |

- Food Microbiology
  - FSHN 574 Value Added Biotransformation | 3 |
  - FSHN 595 Food Safety for Global Food Security | 3 |

**Others (of interest to many)**
- 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 Advanced Special Problems | 1-8 |
- or NUTR 50 Individual Topics in Nutrition |
- CPSC 541 Regression Analysis | 5 |

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Undergraduate training must include statistics (ACE 261, CPSC 241, ECON 202, MATH 161, PSYC 235, SOC 280, or STAT 100) and basic science courses relevant to the student's chosen focus (including for example, biochemistry, physical chemistry, microbiology, or material science). These undergraduate courses are not required for admission, but must be completed early in the graduate program and do not count toward concentration requirements. Both M.S. and Ph.D. 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 FS 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.

Non-thesis M.S. degree students must complete the concentration requirements, including select at least 3 hours of 500-level elective and other courses to equal a total of at least 32 hours.

Up to 2 hours for thesis degrees; up to 6 hour for non-thesis M.S. degree.

PhD Requirements

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

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<th>Hours</th>
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<tr>
<td></td>
<td>Concentration-specific coursework selected in consultation</td>
<td>26</td>
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<tr>
<td></td>
<td>FSHN 599 Thesis Research (max applied toward degree)</td>
<td>70</td>
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<td>Total Hours</td>
<td>96</td>
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Other Requirements

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<td>Qualifying Exam Required</td>
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