Class Schedule - Spring 2018

Food Science and Human Nutrition

Food Science and Human Nutrition
Department Head: Dr. Sharon Nickols-Richardson
Department Office: 260 Bevier Hall, 905 South Goodwin, Urbana
Phone: 217-244-4498
www.fshn.illinois.edu

FSHN 101  Intro Food Science & Nutrition  credit: 3 hours.
Discusses the evolution of the food system to meet the needs and desires of a complex, heterogeneous society. Provides an overview of food in relation to nutrition and health, composition and chemistry, microbiology, safety, processing, preservation, laws and regulations, quality, and the consumer.
This course satisfies the General Education Criteria for a:
Nat Sci & Tech - Phys Sciences

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Nat Sci & Tech - Phys Sciences course.
If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you.

FSHN 120  Contemporary Nutrition  credit: 3 hours.
Fundamental principles of human nutrition and their application to the selection of an adequate diet for health and wellness; current nutrition topics of importance. Credit is not given for FSHN 120 if credit has been given for FSHN 220. Prerequisite: CHEM 101 or equivalent.
In fall and spring semesters, course cannot be added after the first three class meetings. In summer semesters, registration will be closed on the first day of class.
This course satisfies the General Education Criteria for a:
Nat Sci & Tech - Life Sciences

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<th>CRN</th>
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<td>AUD - Foellinger Auditorium</td>
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Nat Sci & Tech - Life Sciences course.
If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you. DO NOT E-MAIL THE INSTRUCTOR FOR SPECIAL CONSIDERATION BEYOND THE WAITLIST POLICY.

FSHN 145  Intro Hospitality Management  credit: 3 hours.
Explore the foodservice aspect of the hospitality industry by assisting Hospitality Management seniors taking FSHN 443 in the operation of the Spice Box. Course covers the planning, production, and service of meals in specialized settings. Additional fees may apply. See Class Schedule.
FSHN 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Experimental course on a special topic in food science and human nutrition. Topic may not be repeated except in accordance with the Code. Approved for letter and S/U grading. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

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FSHN 232  **Science of Food Preparation**  credit: 3 hours.
Application of food preparation principles and techniques in the preparation of standard food products; principles of food management and their application in the planning and preparation of meals. Additional course fees may apply. See Class Schedule. Prerequisite: FSHN 101 or concurrent registration.

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FHSN 260  **Raw Materials for Processing**  credit: 4 hours.

Problems involved with procurement, harvesting, handling, and storage of fruits, vegetables, cereal grains, dairy products, red meat, poultry, fish, and eggs for the food-processing industry. Field trips to specialized operations. Additional fees may apply. See Class Schedule. Prerequisite: One high school course in biological science and FSHN 101.

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Departmental Approval Required
This section reserved for FSHN majors only. Outside majors who are interested in FSHN 260 should register in CRN 51524.

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<tr>
<th>CRN</th>
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</table>

Not intended for students in the Food Science & Human Nutrition department.
Closed until after freshman registration.
Class Materials - FSHN 260 $20.00 Flat Fee.
FSHN 295  **UG Research or Thesis** credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. Approved for letter and S/U grading. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisites: Cumulative GPA of 2.5 or above at the time the activity is arranged and consent of instructor.

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Instructor Approval Required

FSHN 312  **Applied Microbiology Methods** credit: 2 hours.
Consideration, through experimentation, of properties of bacteria, yeasts, molds, and actinomycetes important to industrial processes; exploration of methods of control of microbial processes in industry and sanitation. Prerequisite: MCB 100 and MCB 101 or consent of instructor.

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Departmental Approval Required
Restricted to Food Science & Human Nutrition or Food Science or Nutrition major(s) or minor(s).

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<td>17 - Agricultural Bioprocess Lab</td>
<td>Stasiewicz, M</td>
</tr>
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</table>

Departmental Approval Required
Restricted to Food Science & Human Nutrition or Food Science or Nutrition major(s) or minor(s).

FSHN 322  **Nutrition and the Life Cycle** credit: 3 hours.
Examines physiological changes that occur during gestation, postnatal growth, and aging and the influence of these changes on nutritional requirements. Prerequisite: FSHN 220 or consent of instructor.

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<td>Karduck, J</td>
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</tbody>
</table>

Restricted to Food Science & Human Nutrition or Nutrition major(s) or minor(s). Restricted to students with Sophomore, Junior, or Senior class standing.

FSHN 329  **Communication in Nutrition** credit: 3 hours.
Application and integration of the principles of nutrition and their transmission to groups and individuals. Students will learn individual counseling techniques as well as how to present nutrition information to groups. Open to Dietetics and Human Nutrition juniors and seniors only. Prerequisite: RHET 105, CMN 101, and FSHN 220 or equivalents.

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Restricted to students with Sophomore, Junior, or Senior class standing. Restricted to BS:F Sci&Hm Nutr-Diettcs -UIUC.
If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you.

FSHN 340  Food Production and Service  credit: 4 hours.
Introduction to the management of commercial and noncommercial foodservice systems through the operation of Bevier Cafe. Students experience managing the procurement, production and service of food, as well as the sanitation and maintenance of equipment and facilities. Prerequisite: FSHN 332, credit or concurrent registration in FSHN 349 and FSHN 345.

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<td>33021</td>
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<td>286 - Bevier Hall</td>
<td>Brotherton, J</td>
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</table>

Departmental Approval Required
Authorized students only. HM students have priority registration for spring, and dietetics students have priority registration for fall.

FSHN 349  Food Service Sanitation  credit: 1 hours.
Examines the dangers, costs and prevention of foodborne illness as well as the training and motivation of food service employees in sanitary food handling and quality assurance practices. Upon completion of this course, student will be eligible to apply for the food service sanitation certificate issued by the State of Illinois. Prerequisite: FSHN 101 and FSHN 232, or consent of instructor; MCB 100 and MCB 101 recommended. Course should be taken concurrently with or prior to FSHN 340.

Self-paced.

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<tr>
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Course meets Saturdays from January 16 through March 10. First required class meeting is January 20; last class/national certification exam is March 10. Registration restricted to dietetics and hospitality management majors only. Seats will be open to all FSHN majors and minors (minors must contact the department office (333-1324) for authorization to register) at the beginning of sophomore registration. Any remaining seats will be released to the general student population at the beginning of freshman registration. If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you.

FSHN 396  UG Honors Research or Thesis  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward the degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

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Instructor Approval Required

**FSHN 398  Undergraduate Seminar**  credit: 1 TO 3 hours.

Group discussion on a special topic in a field of study directly pertaining to subject matter in food science and human nutrition. Approved for Letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 12 hours. Prerequisite: Sophomore standing.

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Credit Hours: 3 hours
HM Finance & Entrepreneurship

**FSHN 418  Food Analysis**  credit: 4 hours.

Principles and application of the chemical, physical, and instrumental methods used to determine the constituents of foods; special considerations applicable to the analysis of certain foods. Lecture and lab. 4 undergraduate hours. 4 graduate hours. Prerequisite: CHEM 232; FSHN 414; FSHN 416 or consent of instructor.

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Departmental Approval Required
Restricted to students with Junior, Senior, or Graduate class standing. Restricted to BS:Fd Sci & Hmn Nutrn-FS -UIUC, MS:FSci &Hmn Nutrition -UIUC, PHD:FSci &Hmn Nutrition -UIUC, or MS: Food Sc Hum N - PSM -UIUC.

Restricted to FSHN undergraduate and graduate students only until after junior registration. Remaining seats will be released to the general student population when sophomore registration opens. If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you.

**FSHN 419  Food Ingredient Technology**  credit: 2 hours.

Explores the research, science and technology of the production of safe, high quality food ingredients through the application of food chemistry, food microbiology, and food processing principles. 2 undergraduate hours. 2 graduate hours. Prerequisite: FSHN 414 or consent of the instructor. FSHN majors only, junior standing required.
Restricted to students in the Food Science & Human Nutrition department. Restricted to students with Junior, Senior, or Graduate class standing.

FSHN 423  **Advances in Foods & Nutrition**  credit: 2 hours.
New developments in foods and nutrition; readings, lectures, and discussions. 2 undergraduate hours. 2 graduate hours. Prerequisite: FSHN 220 and FSHN 332, or equivalent.

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FSHN 425  **Food Marketing**  credit: 3 hours.
Same as ACE 430. See ACE 430.

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Instructor Approval Required

FSHN 426  **Biochemical Nutrition I**  credit: 3 hours.
The dietary and hormonal regulation of carbohydrate, lipid and amino acid metabolism. Emphasizes the regulation of enzyme activity and the different roles the major organs have in whole animal energy balance. Same as NUTR 426. 3 undergraduate hours. 3 graduate hours. Prerequisite: FSHN 220, or FSHN 120 and FSHN 414, and MCB 450 or concurrent enrollment.

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FSHN 427  **Biochemical Nutrition II**  credit: 3 hours.
Biochemistry and metabolism of the water and fat soluble vitamins and minerals. Emphasizes the digestion, transport, metabolism and intercellular functions of these nutrients and how diet/food intake and physiological states affect these processes. Same as NUTR 427. 3 undergraduate hours. 3 graduate hours. Prerequisite: FSHN 220, or FSHN 120 and FSHN 414, and MCB 450 or concurrent enrollment.

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<td>103 - Mumford Hall</td>
<td>Chen, H</td>
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Restricted to Human Nutrition and Dietetics students only until after junior registration. If you get a 'course full' error message and want to be added to a wait list for this class, go to www.fshn.illinois.edu and click on Undergraduate then Admissions then Course
Wait List. Wait lists will not open until one week before classes start in January. Until that time, it is up to you to continue to check the status of this course to see if a seat has become available for you.

FSHN 440  **Applied Statistical Methods I**  credit: 4 hours.
Same as ABE 440, ANSC 440, CPSC 440, and NRES 440. See CPSC 440.

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<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>31608</td>
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<td>W</td>
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<tr>
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<td>AB3</td>
<td>02:00 PM - 03:50 PM</td>
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<td>M205 - Turner Hall</td>
<td>Lipka, A</td>
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<tr>
<td>60975</td>
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<td>AB6</td>
<td>06:00 PM - 07:50 PM</td>
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<td>M205 - Turner Hall</td>
<td>Lipka, A</td>
</tr>
<tr>
<td>31616</td>
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<td>03:30 PM - 04:50 PM</td>
<td>TR</td>
<td>213 - Gregory Hall</td>
<td>Lipka, A</td>
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</tbody>
</table>

FSHN 442  **Hospitality Management & Leadership Skills**  credit: 3 hours.
Application of behavioral science and management techniques, methods and strategies to the hospitality industry. Applied management techniques will focus on those managerial behaviors needed to develop and maintain positive and productive relationships with subordinates, peers, supervisors and individuals external to the hospitality organization. 3 undergraduate hours. No graduate credit. Prerequisite: FSHN 340 or consent of instructor.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
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<th>Location</th>
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<tr>
<td>33033</td>
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<td>N</td>
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<td>MW</td>
<td>103 - Bevier Hall</td>
<td>Craft, J</td>
</tr>
</tbody>
</table>

Restricted to students with Senior class standing.
Departmental Approval Required. Restricted to Hospitality Management, Dietetic, and Human Nutrition students only until after junior registration. Remaining seats will be released to the general student population when sophomore registration opens.

FSHN 443  **Management of Fine Dining**  credit: 4 hours.
Advanced application of food production and management principles to specific food service demands; emphasis on artistry in preparation, serving, and merchandising high quality food in quantity. 4 undergraduate hours. No graduate credit. Prerequisite: FSHN 340 and credit or concurrent registration in FSHN 442.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
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<th>Time</th>
<th>Days</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>33034</td>
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<td>AB1</td>
<td>04:00 PM - 08:50 PM</td>
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<td>286 - Bevier Hall</td>
<td>Brotherton, J</td>
</tr>
<tr>
<td></td>
<td>Laboratory</td>
<td>AB1</td>
<td>ARRANGED -</td>
<td>R</td>
<td>286 - Bevier Hall</td>
<td>Brotherton, J</td>
</tr>
</tbody>
</table>
FSHN 460  Food Processing Engineering  credit: 3 hours.
Examines application of process engineering principles to the conversion of raw agricultural materials into finished food products.
Topics include basics of engineering analysis, units and dimensions, materials balances, energy balances, thermodynamics, heat transfer, psychrometry, refrigeration and mechanical separations. 3 undergraduate hours. 3 graduate hours. Prerequisite: PHYS 101 and MATH 220; or consent of instructor.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
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<th>Instructor</th>
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<tr>
<td>33036</td>
<td>Lecture</td>
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<td>Morris, S</td>
</tr>
</tbody>
</table>

Restricted to Food Science & Human Nutrition or Food Science major(s) or minor(s). Not intended for students with Freshman or Sophomore class standing.
Restricted to Food Science undergrad majors only until the beginning of sophomore registration, then open to ACES students only. All students should be aware that the PHYS 101 and MATH 220 prerequisites for this course will be strictly enforced. Any registered student who hasn't met the prereqs will be dropped from the course.

FSHN 461  Food Processing I  credit: 4 hours.
Principles, unit operations, and applications of food preservation and processing by high temperature, refrigeration, and freezing processes; includes heat transfer, kinetics, chemical and microbial changes in food as a result of processing. Also, principles and applications of food processing unit operations based upon the combination of heat and/or mass transfer, including such unit operations as evaporation, freeze-concentration, membrane separation, dehydration, centrifugation, extrusion, as well as water activity control. Lecture-based course. 4 undergraduate hours. 4 graduate hours. Prerequisite: FSHN 414 or equivalent; FSHN 460 or equivalent, and FSHN 418. FSHN 260 is recommended.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
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<td>-</td>
<td>Artz, W</td>
</tr>
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</table>

Restricted to MS: FSHN (Online) -UIUC or MS:FSci &Hmn Nutrition -UIUC.
Please be advised, capacity is limited and priority will be given to FSHN MS Online Degree Seeking students. This section has one or more proctored exams, which may carry additional fees. Proctoring options include fee-based ProctorU and approved proctoring centers. For ProctorU technical specifications and additional information visit: http://citl.illinois.edu/services/for-students/proctoru/schedule-an-exam. Center for Innovation in Teaching & Learning (CITL) restrictions and assessments apply, see http://online.illinois.edu. Online scheduled class sessions require each student to have high speed internet access and either a headset with microphone or an external microphone and speakers so they may participate in the class discussions. Wireless internet is not recommended.

FSHN 462  Food Processing II  credit: 2 hours.
Laboratory course for FSHN 461. Includes labs on blanching, pasteurization, sterilization, freezing, freeze drying, dehydration (tray drying, drum drying and spray drying), evaporation, and extrusion; discussion and labs. Additional fees may apply. See Class Schedule. 2 undergraduate hours. 2 graduate hours. Prerequisite: FSHN 461.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
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</table>

Lee, Y
### FSHN 471  **Food & Industrial Microbiology**  credit: 3 hours.

Relationship of microorganisms to food manufacture and preservation, to food and industrial fermentation and processing, and to food-borne illness. Same as MCB 434. 3 undergraduate hours. 3 graduate hours. Prerequisite: MCB 101 or MCB 301 or equivalent.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
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<td>Jin, Y Miller, M</td>
</tr>
</tbody>
</table>

### FSHN 499  **Cur Topics in FS & Human Nutr**  credit: 1 TO 3 hours.

Group discussion or an experimental course on a special topic in food science and human nutrition. 1 to 3 undergraduate hours. 1 to 3 graduate hours. May be repeated in the same or subsequent terms to a maximum of 12 hours as topics vary.

There may be a fee for Class Materials for some sections of this course.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
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</table>

Instructor Approval Required
Restricted to students with Junior, Senior, or Graduate class standing. Restricted to BS:Fd Sci & Hmn Nutrn-FS -UIUC, BS:F Sci&Hm Ntr-Ind&Bus -UIUC, MS:FSci &Hmn Nutrition -UIUC, or PHD:FSci &Hmn Nutrition -UIUC.
Hispanic families have many strengths that can battle their risks for poor health outcomes. This course will train Spanish-speaking undergraduate students in the research and professional skills necessary to implement a community health promotion program in Hispanic children and their families: "Abriendo Caminos". The program includes implementation of culturally appropriate nutrition education modules. Students will participate directly in research, program adaptation, and material development experiences as well as learning in a classroom setting. The course is designed as a two semester offering of independent research credit, beginning in the fall semester. Students preparing for graduate school or professional careers can expect intensive mentoring with faculty, staff and graduate students. Spring 2016 will feature 1 hours per week in the classroom and 4-6 hours per week of experiential learning in community research settings. Students will earn 3 credits. Conversational Spanish is preferred; Spanish fluency is not required. For registration approval for FSHN 499, contact Dr. Margarita Teran-Garcia; teranmd@illinois.edu.
FSHN 520  **Advanced Clinical Nutrition**  credit: 2 hours.
Same as NUTR 561. See NUTR 561.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
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<td>-</td>
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</table>

N/A
Dietary Considerations for Hemodialysis Patients: Myths and Realities

FSHN 573  **Advanced Food Microbiology**  credit: 3 hours.
Detailed examination of food microbiology topics including food-borne pathogens, food fermentation and microbial spoilage.
Prerequisite: Graduate student standing or consent of instructor.

<table>
<thead>
<tr>
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<th>Type</th>
<th>Section</th>
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<td>A</td>
<td>09:30 AM - 10:50 AM</td>
<td>TR</td>
<td>114 - David Kinley Hall</td>
<td>Miller, M</td>
</tr>
</tbody>
</table>

Restricted to Graduate - Urbana-Champaign.

FSHN 591  **Dietetic Internship II**  credit: 5 hours.
Supervised learning experience in a variety of settings and locations related to clinical nutrition, community nutrition and health promotion, and food service management within Urbana/Champaign and surrounding areas. Additional fees may apply. See Class Schedule. Approved for letter and S/U grading. Prerequisite: FSHN 590.
Internship fee required. Please contact instructor.

<table>
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</table>

Departmental Approval Required
FSHN Internship Fee $1000.00 Flat Fee.
Restricted to Graduate - Urbana-Champaign.

FSHN 592  **Graduate Internship Experience**  credit: 0 TO 12 hours.
Supervised, off-campus experience in a field related to a students' option/concentration. Approved for letter and S/U grading. May be repeated in separate terms to a maximum of 12 hours.

<table>
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</table>

Departmental Approval Required
FSHN 593  **Seminar in Foods and Nutrition**  credit: 2 hours.
Communication-based course that focuses on enhancing professional oral presentation skills, particularly with regard to communicating current food science and/or human nutrition topics. 2 graduate hours. No professional credit. Prerequisite: Undergraduate degree in foods, nutrition, or comparable background in chemistry, microbiology, physiology, or other biological science; consent of instructor.

<table>
<thead>
<tr>
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Restricted to students in the Food Science & Human Nutrition or Nutritional Sciences department. Restricted to Graduate - Urbana-Champaign.

<table>
<thead>
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</table>

Restricted to students in the Food Science & Human Nutrition or Nutritional Sciences department. Restricted to Graduate - Urbana-Champaign.

FSHN 595  **Advanced Topics in Food Science and Human Nutrition**  credit: 1 TO 4 hours.
Studies of selected topics in Food Science. Study may be on specialized topics in any one of the following fields: food chemistry, food microbiology, nutrition, food processing/engineering. Lectures and/or laboratory. 1 to 4 graduate hours. No professional credit. May be repeated if topics vary. Students may register only once for a given topic. Prerequisite: Graduate level status or consent of instructor.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
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<th>Time</th>
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Credit Hours: 3 hours
Biopsych of Ingestive Behavior
Restricted to students with Senior or Graduate class standing. Restricted to Graduate - Urbana-Champaign or Undergrad - Urbana-Champaign. Restricted to BS:Fd Sci & Hmn Nutrn-FS -UIUC, BS:F Sc&Hum Nutrition-HN -UIUC, BS:F Sci&Hm Nutr-Diettcs -UIUC, BS:FSc&Hum Nutr-Hosp Mgt -UIUC, MS:FSci &Hmn Nutrition -UIUC, PHD:FSci &Hmn Nutrition -UIUC, MS:Nutritional Sciences -UIUC, PHD:Nutritional Sciences -UIUC, MS:Psychology -UIUC, PHD:Psychology -UIUC, or MS: Food Sc Hum N - PSM -UIUC.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
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<th>Days</th>
<th>Location</th>
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<tr>
<td>57826</td>
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<td>272 - Agricultural Engr Sciences Bld</td>
<td>Feng, H Lee, Y Takhar, P</td>
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</table>

Credit Hours: 1 hours
Food Processing Laboratory
Restricted to students in the Food Science & Human Nutrition department. Restricted to Graduate - Urbana-Champaign.
This is a 5-week course with the following meeting schedule. Week 1: Feb 24/25 (Extrusion) Week 2: Mar 3/4 (Sterilization) Week 3: Mar 10/11 (Sterilization Continued) Week 4: Mar 17/18 (Evaporation) Week 5: Mar 31/Apr 1 (Hot air drying)

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
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<th>Instructor</th>
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<tr>
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Credit Hours: 3 hours
Food Toxicology
Restricted to Graduate - Urbana-Champaign.
<table>
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Credit Hours: 3 hours
Global Nutrition
Restricted to Graduate - Urbana-Champaign.

<table>
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Credit Hours: 1 hours
Health Disparities Research
Restricted to Graduate - Urbana-Champaign.

<table>
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<tr>
<th>CRN</th>
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<td>T</td>
<td>22 - ACES Lib, Info &amp; Alum Ctr</td>
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</table>

Credit Hours: 1 hours
Transport in Food Biopolymers
Restricted to Graduate - Urbana-Champaign.

This section of FSHN 595 requires registered students to have successfully completed a physics or a calculus course at the undergraduate level. This class meets in 026 ACES Library.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
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<tr>
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<td>Lecture</td>
<td>SJS</td>
<td>09:00 AM - 11:50 AM</td>
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<td>3 - Christopher Hall</td>
<td>Schmidt, S</td>
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Credit Hours: 4 hours
Water Relations in Foods
Restricted to Graduate - Urbana-Champaign.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tr>
<td>67173</td>
<td>Online</td>
<td>XM</td>
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<td>R</td>
<td>-</td>
<td>Schmidt, S</td>
</tr>
</tbody>
</table>

Credit Hours: 4 hours
Water Relations in Foods

**FSHN 597  Graduate Seminar**  credit: 0 TO 1 hours.

Discussions on specialized research topics and current literature relating to food science and human nutrition. Required of all graduate students. 0 or 1 graduate hour. No professional credit. Approved for letter and S/U grading.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
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<th>Location</th>
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</tr>
</tbody>
</table>

Restricted to Graduate - Urbana-Champaign.

**FSHN 598  Advanced Special Problems**  credit: 1 TO 8 hours.

Supervised individual study on advanced special problems in food science and human nutrition. Approved for letter and S/U grading. May be repeated in the same or subsequent semesters. (Summer session: 1 to 4 graduate hours). Prerequisite: Written consent of instructor must be obtained prior to enrollment.
FSHN 599  **Thesis Research**  credit: 0 TO 16 hours.
Original research designed and conducted under graduate faculty supervisor. Approved for S/U grading only. May be repeated.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
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<tbody>
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</table>

Instructor Approval Required

Restricted to Graduate - Urbana-Champaign.