NUTRITIONAL SCIENCES, PH.D.

Modern nutrition is a multidisciplinary, integrative science, and the Interdepartmental Graduate Program in Nutritional Sciences (IGPNS) has been developed to meet this diversity in approach and objective. Thus, students can focus their training in one of three emphasis groups:

1. Biochemical and Molecular Nutrition,
2. Human Nutrition, or

The degrees offered are the Master of Science and the Doctor of Philosophy in Nutritional Sciences.

It is the program’s goal to provide graduate students interested in nutrition with an opportunity to obtain specialized training in a specific research area and also to obtain a general background in the science and practice of nutrition. The program is sufficiently flexible to allow students with a wide variety of undergraduate degrees to meet the background prerequisites. The program draws on the strengths of faculty in a number of the university’s colleges and academic departments to enhance the instructional and research experience.

The training objectives of the IGPNS are to provide students with an understanding of basic nutritional principles as they apply to both humans and animals, to provide them with current knowledge in a specific area of emphasis, to make them aware of the integrative and multidisciplinary nature of nutrition research, and to direct them toward a successful career through the thesis and publications.

Biochemical and Molecular Nutrition. This emphasis group focuses on the application of biochemical and physiological approaches to the understanding of nutrient function and metabolism in systems ranging from the whole animal to the molecular level.

Human Nutrition. This emphasis group takes a comprehensive view of human nutrition with emphasis on the maintenance and promotion of human health. It utilizes diverse research approaches to carry out studies on nutrient requirements, metabolism, and interactions. Research may involve physiological and biochemical studies, animal models and epidemiological, and educational or clinical interventions.

Animal Nutrition. This emphasis group takes a comprehensive view of animal nutrition with a focus on expanding understanding of nutrient utilization. Research activities involve both the performance of domestic animals and general comparative nutrition across animal species. Studies may range from applied animal feeding trials to basic studies on nutrient metabolism or integrated whole-animal metabolism with an emphasis on quantification and regulation.

The graduate faculty have well-developed, competitively funded research programs and have been nationally recognized for their activities. They are active in national and international nutrition activities, and serve on editorial boards, as society officers, and as participants in numerous workshops and on advisory committees.

ADMISSIONS

Candidates for graduate study in nutritional sciences should have a strong background in mathematics, chemistry, biological sciences, medical sciences or social sciences.

Specific prerequisites for the graduate program include the following:

- 2 semesters of General Chemistry
- 2 semesters of Biological Sciences
- 1 semester of Organic Chemistry
- Biochemistry with an Organic Chemistry prerequisite
- 1 semester of Calculus or Statistics
- 1 semester of Physiology

Students who have not completed all the requirements may be admitted, but deficiencies should be made up during the first year of graduate study.

All applicants must have a minimum grade point average of at least 3.0 (on a 4.0 scale) as well as three references and a personal statement. Acceptance requires approval by the Department of Nutritional Sciences and the Graduate School.

GRADUATE SCHOOL ADMISSIONS

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/admissions).

FUNDING

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/policiesandrequirementstext), in addition to the program requirements listed below.
MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules.

Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

**Minimum Required Credits:**

- **Credit Requirement:** 51 credits
- **Residence Credit Requirement:** 32 credits
- **Graduate Coursework Requirement:** Half of degree coursework (26 credits out of 51 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide (http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle).

- **Overall GPA Requirement:** 3.00 GPA required.
- **Other Grad Requirements:** The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

- **Assessments and Examinations:** Students must take and pass two preliminary exams. Students must take the first exam prior to the end of the fifth semester and the second exam by the end of the sixth semesters; summer session does not count as a semester. Students may choose the order of the research exam and the general knowledge exam.

- **Students must defend a final thesis.**

REQUIRED COURSES

**Animal Nutrition Track**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR SCI/</td>
<td>Advanced Nutrition: Intermediary</td>
<td>3</td>
</tr>
<tr>
<td>BIOCHEM 619</td>
<td>Metabolism of Macronutrients</td>
<td></td>
</tr>
<tr>
<td>NUTR SCI/</td>
<td>Introduction to Nutritional</td>
<td>1</td>
</tr>
<tr>
<td>POP HLTH 621</td>
<td>Epidemiology</td>
<td></td>
</tr>
<tr>
<td>NUTR SCI/</td>
<td>Advanced Nutrition: Minerals</td>
<td>1</td>
</tr>
<tr>
<td>M&amp;ENVTOX 623</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUTR SCI 625</td>
<td>Advanced Nutrition: Obesity and Diabetes</td>
<td>1</td>
</tr>
<tr>
<td>NUTR SCI/</td>
<td>Experimental Diet Design</td>
<td>1</td>
</tr>
<tr>
<td>AN SCI 626</td>
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<tr>
<td>NUTR SCI 627</td>
<td>Advanced Nutrition: Vitamins</td>
<td>1</td>
</tr>
<tr>
<td>NUTR SCI 600</td>
<td>Introductory Seminar in Nutrition</td>
<td>1</td>
</tr>
<tr>
<td>NUTR SCI 931</td>
<td>Seminar-Nutrition</td>
<td>1</td>
</tr>
<tr>
<td>BIOCHEM/</td>
<td>Seminar-Nutrition and Metabolism (Advanced)</td>
<td>1</td>
</tr>
<tr>
<td>NUTR SCI 901</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUTR SCI 799</td>
<td>Practicum in Nutritional Sciences Teaching (or equivalent experience)</td>
<td>1-3</td>
</tr>
<tr>
<td>STAT/F&amp;W ECOL/HORT 671</td>
<td>Statistical Methods for Bioscience I</td>
<td></td>
</tr>
<tr>
<td>STAT/F&amp;W ECOL/HORT 572</td>
<td>Statistical Methods for Bioscience II</td>
<td></td>
</tr>
<tr>
<td>BMOLCHEM 504</td>
<td>Human Biochemistry Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>Select an animal nutrition course, 400 level or above</td>
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</tr>
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1 These tracks are internal to the program and represent different pathways a student can follow to earn this degree. Track names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

**Biochemical and Molecular Track**

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<tr>
<td>BIOCHEM/</td>
<td>Seminar-Nutrition and Metabolism (Advanced)</td>
<td>1</td>
</tr>
<tr>
<td>NUTR SCI 901</td>
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</tr>
</tbody>
</table>

Language Requirements:

- **Doctoral:** No language requirements.
- **Minor/Breadth:** Students are not required to complete a minor, but are heavily encouraged to pursue a minor.

Research Methods:

- **Animal:** Students are not required to complete a minor, but are heavily encouraged to pursue a minor.

References:

- [http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)

- [NUTR SCI 799](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)
- [STAT/F&W ECOL/HORT 671](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)
- [STAT/F&W ECOL/HORT 572](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)
- [BMOLCHEM 504](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)
- [Select an animal nutrition course, 400 level or above](http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle)
NUTR SCI 799 Practicum in Nutritional Sciences Teaching (or equivalent experience) 1-3

Select 3 credits in BIOCHEM from the following or equivalent:

- BIOCHEM 601 Protein and Enzyme Structure and Function
- BIOCHEM/GENETICS/MICROBIO 612 Prokaryotic Molecular Biology
- BIOCHEM/GENETICS/MD GENET 620 Eukaryotic Molecular Biology
- BIOCHEM 624 Mechanisms of Enzyme Action
- BIOCHEM 625 Mechanisms of Action of Vitamins and Minerals
- BIOCHEM/PHMCOL-M/ZOOLOGY 630 Cellular Signal Transduction
- BIOCHEM 660 Methods in Biochemistry
- BIOCHEM/GENETICS 703 Biophysical Chemistry
- BIOCHEM 711 Sequence Analysis
- BIOCHEM 801 Biochemical Applications of Nuclear Magnetic Resonance

Select additional coursework in nutrition, BIOCHEM, or related areas 1+

Select a quantitative methods course 2

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**Statistics competency**

**POLICIES**

**GRADUATE SCHOOL POLICIES**

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

**MAJOR-SPECIFIC POLICIES**

**GRADUATE PROGRAM HANDBOOK**

The Graduate Program Handbook (https://nutrisci.wisc.edu/graduate/ms-ph-d/current-students) is the repository for all of the program’s policies and requirements.

**PRIOR COURSEWORK**

**Graduate Work from Other Institutions**

With approval of the certification committee, students are allowed to count up to 19 credits of graduate coursework from other institutions. Coursework earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

**UW–Madison Undergraduate**

With approval of the certification committee, students are allowed to count up to 7 credits from a UW–Madison undergraduate degree, numbered 400 and above, toward the Ph.D. degree, provided the course satisfies a requirement within the student’s core curriculum or IGPNS emphasis group. Coursework earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

**UW–Madison University Special**

With program approval, students are allowed to count no more than 15 credits of coursework taken as a UW–Madison Special student, provided the course satisfies a requirement within the student’s core curriculum or IGPNS emphasis group. Coursework earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

**PROBATION**

The IGPNS requires a cumulative 3.0 GPA for all courses taken in the UW Graduate School. Grades in research (NUTR SCI 991 Research Nutrition) are not included in the calculation of the GPA. A student who does not maintain a 3.0 GPA can continue on probationary status for two semesters at the recommendation of the major professor. If, at that time, the student does not achieve a cumulative 3.0 GPA, they will be dropped from the program.
The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

**ADVISOR / COMMITTEE**

Every graduate student is required to have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies. An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor.

To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

A committee often accomplishes advising for the students in the early stages of their studies.

**CREDITS PER TERM ALLOWED**

- 12 credits: fall and spring semesters
- 2 credits: per eight-week summer session

**TIME CONSTRAINTS**

Doctoral degree students who have been absent for ten or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

A candidate for a Doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and to be admitted to candidacy a second time.

A student’s program may appeal these time limits through a written request to the Graduate School Office of Academic Services.

**OTHER**

n/a

**PROFESSIONAL DEVELOPMENT**

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.

**LEARNING OUTCOMES**

1. Articulates research problems, potentials, and limits with respect to theory, knowledge, and practice in nutritional sciences. Specific knowledge areas of focus include intermediary metabolism, functions and metabolism of vitamins and minerals, nutrition-related diseases such as obesity and diabetes, and fundamental principles of epidemiology and nutrition policy.

2. Formulates ideas, concepts, designs, and/or techniques beyond the current boundaries of knowledge in nutritional sciences.

3. Creates original research and scholarship that makes a substantive contribution to nutritional sciences.

4. Demonstrates breadth of knowledge of nutritional sciences.

5. Advances contributions of the field of nutritional sciences to society.

6. Communicates complex ideas in a clear and understandable manner through both written and oral presentations.

7. Fosters and practices ethical and professional conduct.

**PEOPLE**

**Faculty:** Professors Eide (chair), Eisenstein, Groblewski, Lai, Ney, Ntambi, Smith, Sunde, Tanumihardjo; Associate Professors Olson, Yen; Assistant Professor Parks. Members of the Interdepartmental Graduate Program in Nutritional Sciences from outside the department: Adams, Anderson, Armentano, Attie, Binkley, Carey, Clagett-Dame, Combs, Cook, Crenshaw, Davis, Denu, Drezner, Engin, Goldman, Hayes, Hernandez, Kanarek, Karasov, Kemnitz, Kimple, Kling, Knoll, Kudsk, Lamming, Mares, Merrins, Pagliarini, Prolla, Reed, Robbins, Schaefer, Simon, White

**Graduate Coordinator:** Katie Butzen MS.Ed., kbutzen@wisc.edu