Nutritional Sciences, M.S.

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 recognized for their activities by receiving national awards. 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, and biological and medical sciences or social sciences. Specific prerequisites for the graduate program include five to six semesters of chemistry, three semesters of biological sciences including a course in animal physiology, mathematics through trigonometry, and a course in calculus or statistics. Students who have not completed all the requirements may be admitted, but deficiencies should be made up during the first year of graduate study.

In general, all applicants must have a minimum grade point average of at least 3.0 (on a 4.0 scale). Graduate Record Exam (GRE) scores are required 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).
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 with minimal disruption to your career. For more information about the accelerated nature 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 30 credits

<table>
<thead>
<tr>
<th>Credit Requirement</th>
<th>Minimum Residence Credit Requirement</th>
<th>16 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (15 credits out of 30 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 (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
<td></td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
<td></td>
</tr>
</tbody>
</table>

Other Grade 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 complete either a research-based thesis or a literature-based report that passes scholarly review.

Language No language requirements.

REQUIRED COURSES

Biochemical and Molecular 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>
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</tr>
</tbody>
</table>

NUTR SCI 625 Advanced Nutrition: Obesity and Diabetes 1

NUTR SCI/AN SCI 626 Experimental Diet Design 1

NUTR SCI 627 Advanced Nutrition: Vitamins 1

NUTR SCI 600 Introductory Seminar in Nutrition 1

NUTR SCI 901 Seminar-Nutrition and Metabolism (Advanced) 1

or NUTR SCI 931 Seminar-Nutrition 1

or NUTR SCI 881 Seminar-Topics in Human and Clinical Nutrition 1

NUTR SCI 799 Practicum in Nutritional Sciences Teaching (or equivalent experience) 1-3

Select 4 credits of BIOCHEM from the following or equivalent:

<table>
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<tbody>
<tr>
<td>BIOCHEM 601</td>
<td>Protein and Enzyme Structure and Function</td>
</tr>
<tr>
<td>BIOCHEM/GENETICS/MICROBIO 612</td>
<td>Prokaryotic Molecular Biology</td>
</tr>
<tr>
<td>BIOCHEM/GENETICS/MD GENET 620</td>
<td>Eukaryotic Molecular Biology</td>
</tr>
<tr>
<td>BIOCHEM 624</td>
<td>Mechanisms of Enzyme Action</td>
</tr>
<tr>
<td>BIOCHEM 625</td>
<td>Mechanisms of Action of Vitamins and Minerals</td>
</tr>
<tr>
<td>BIOCHEM/PHMCOL-M/ZOOLOGY 630</td>
<td>Cellular Signal Transduction Mechanisms</td>
</tr>
<tr>
<td>BIOCHEM/CHIM 665</td>
<td>Biophysical Chemistry</td>
</tr>
<tr>
<td>BIOCHEM/GENETICS 703</td>
<td>Topics in Eukaryotic Regulation</td>
</tr>
<tr>
<td>BIOCHEM 711</td>
<td>Sequence Analysis</td>
</tr>
<tr>
<td>BIOCHEM 801</td>
<td>Biochemical Applications of Nuclear Magnetic Resonance</td>
</tr>
</tbody>
</table>

Select a quantitative methods course

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.

2 Students choose the seminar associated with their emphasis group.

Human Nutrition Track

<table>
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<tr>
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<td>Advanced Nutrition: Obesity and Diabetes</td>
<td>1</td>
</tr>
<tr>
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<td>Experimental Diet Design</td>
<td>1</td>
</tr>
<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>
</tbody>
</table>
NUTR SCI 931  Seminar-Nutrition  1
NUTR SCI 881  Seminar-Topics in Human and Clinical Nutrition  1
NUTR SCI 799  Practicum in Nutritional Sciences Teaching (or equivalent experience)  1-3

Select a research methods or data analysis course  2+

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.

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/m-s-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 14 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison Undergraduate
With approval of the certification committee, students may count up to 7 credits from a UW–Madison undergraduate degree, numbered 400 and above, toward the M.S. degree, provided that the course satisfies a requirement within the student's core curriculum or IGPNS emphasis group. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special
With approval of the certification committee, students are allowed to count no more than 14 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 and is numbered 300 or above. Coursework earned five or more years prior to admission to a master's 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 (Nutri Sci 991) 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. 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.

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. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

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

Master's degree students who have been absent for five 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.

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, critiques, and elaborates the theories, research methods, and approaches to inquiry 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. Identifies sources and assembles evidence pertaining to questions or challenges in nutritional sciences.
3. Selects and/or utilizes the most appropriate methodologies and practices.

4. Evaluates or synthesizes information pertaining to questions or challenges in nutritional sciences.

5. Communicates clearly in ways appropriate to the field of nutritional science. This includes the composition of primary research and review articles. Demonstrates competent communication in the form of oral and poster presentations.

6. Recognizes and applies principles of 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