



# Department of **PHARMACOLOGY** & **NUTRITIONAL SCIENCES**

## **Handbook: Ph.D. Program in Nutritional Sciences**

**University of Kentucky**

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This handbook is a guide for students of the Ph.D. program in Nutritional Sciences, their academic advisors and other faculty members. The handbook provides an overview of the requirements and processes, degree and curriculum requirements, references and links to forms that need to be completed, Graduate School resources and other valuable information. For additional information, please consult the Center's Website: <http://pharmns.med.uky.edu/pharmns-nutritional-sciences>

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## Welcome New Graduate Students

The Division of Nutritional Sciences hopes your graduate years will be enjoyable and rewarding. The challenges you will face will create a sound research foundation and help make your future years as a basic research scientist productive and successful. The information in this handbook is intended to serve as a guide for your matriculation through our graduate program. Students should familiarize themselves with the information provided herein, and with that described in the Graduate School Bulletin.

[www.research.uky.edu/gsbulletin/bullinfo.shtml](http://www.research.uky.edu/gsbulletin/bullinfo.shtml)

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### Mission

The PhD program in Nutritional Sciences is an interdisciplinary program that provides high-quality educational training and research experience across a wide spectrum of nutrition-related subjects. The program's mission is to train highly skilled nutritional scientists equipped to tackle critical nutrition-related disease and health issues and pursue promising careers in academic, industrial and professional environments in the rapidly expanding field of nutritional sciences.

### Program Overview

The PhD Program in Nutritional Sciences was established in 1989 to provide an opportunity for advanced multidisciplinary graduate studies in nutrition. Nutritional Sciences became a Graduate Center in 2000, and in 2014, merged with the Department of Pharmacology and became a Division within the Department of Pharmacology and Nutritional Sciences. Through its Ph.D. and Master's of Science programs, the Division of Nutritional Sciences within the merged department enables students to explore the interrelationship between environmental factors and nutrients and their effect on biochemistry, physiology and disease development. Students have access to faculty expertise across 28 departments and divisions at the University's Colleges of Medicine, Pharmacy, Health Sciences, Nursing, Agriculture, Arts and Sciences, and

Education. Administratively, the Center is housed in the Department of Pharmacology and Nutritional Sciences in the College of Medicine.

One of the primary areas of research and training targets nutrition and chronic diseases, with a focus on obesity and associated disorders of cardiovascular disease, diabetes and cancer. Other areas of specialty include nutrition and oxidative stress, clinical nutrition and agricultural nutrition.

More than 60 faculty members provide teaching and individualized research guidance for graduate students in academic units including Plant Sciences; Animal Sciences; Anthropology; Behavioral Science; Biochemistry; Clinical Sciences; Horticulture and Landscape Architecture; Internal Medicine; Kinesiology and Health Promotion; Microbiology and Immunology; Neurology; Nursing; Nutrition and Food Science; Oral Health Science; Pathology and Laboratory Medicine; Pharmacology; Pharmacy; Physiology; Psychiatry; Surgery; and Toxicology.

### **Research Opportunities and Resources**

Approximately 36,000 square feet of laboratory space have been dedicated to Nutritional Sciences. This research space houses state-of-the-art equipment for cell culture, human and animal studies using state-of-the-art trace mineral, vitamin, lipid, amino acid, hormone, enzyme, stable and radioactive isotope, microcirculatory, energy assessment, electrophoresis and molecular biology technologies. The University of Kentucky has in place multiple core facilities, among them a microarray facility as well as cores for electron microscopy, confocal microscopy, flow cytometry and magnetic resonance imaging.

Clinical research facilities for training and research, all within walking distance of each other, include the Center for Clinical and Translational Science, the University of Kentucky Hospital, the Veterans Administration Hospital, Sanders-Brown Center on Aging, the Gill Heart Institute, the University of Kentucky Medical Center Outpatient Clinics, and the Markey Cancer Center. Both the UK Medical Center and the VA Medical Center have clinical research units with ongoing nutritional studies. Opportunities for community-based research exist locally, throughout the state and in international settings.

The University's W.T. Young Library offers more than 2 million volumes and 13 branch libraries, as well as access to eJournals and eBooks. Two of these libraries are of particular value to students in Nutritional Sciences: the Agriculture Library, located in the Agricultural Science Center North, and the Medical Library, located in the Medical Center. More information can be obtained by referring to the Graduate School Bulletin or calling the appropriate library.

## ADMISSIONS

### There are two ways to be admitted into the Nutritional Sciences PhD Program:

#### **1. Through the Integrated Biomedical Sciences Program (IBS)**

The IBS program is composed of first year biomedical graduate students in the College of Medicine, University of Kentucky. Participating departments and centers include Anatomy & Neurobiology; Microbiology, Immunology & Molecular Genetics; Pharmacology & Nutritional Sciences; Molecular & Cellular Biochemistry; Toxicology & Cancer Biology; and Physiology. The IBS Program consists of both coursework and laboratory rotations completed during the first year of graduate school. All IBS students take four laboratory rotations (two per semester) among any of the participating departments. The purpose of the rotations is for the student to both gain experience in a working scientific lab and to find a faculty member who will serve as a research advisor. Selection of a research advisor is a mutual decision of the student and faculty member and is made by the end of the spring semester.

Detailed information about applying to the IBS program can be obtained at:

<http://graduate.med.uky.edu/integrated-biomedical-sciences> or by directly contacting the IBS program by e-mail: [COMIBS@uky.edu](mailto:COMIBS@uky.edu).

#### **2. Direct admission into Nutritional Sciences:**

Applicants must meet the following requirements for admission to the University of Kentucky Graduate School and the Graduate Program in Nutritional Sciences:

1. A baccalaureate degree from a fully accredited institution of higher learning.
2. An M.S. degree with a Grade Point Average (GPA) of 3.2 or above on a 4.0 scale, or a B.S. degree with a GPA of 3.0 or above on a 4.0 scale.
3. An average Graduate Record Examination (GRE) score on the verbal, quantitative and analytical sections that is greater than the 50th percentile.
4. For international applicants, a minimum score of 550 out 667 maximum possible is required on the paper-based Test of English as a Foreign Language (TOEFL), a minimum 213 score on the computer-based TOEFL (maximum 300), or 79 on the internet-based TOEFL. The minimum International English Language Testing Service (IELTS) score is 6.5. All applicants must demonstrate proficiency in verbal and written English.

All those interested in graduate study at the University of Kentucky Graduate School must apply online via Hobson's [ApplyYourself Application Network](#). There is a \$65 application fee for domestic applicants and a \$75 application fee for international applicants. Please note that the application cannot be submitted without paying this fee.

The following information must be submitted online to the Graduate School via [ApplyYourself](#):

1. **Transcripts** from all higher education institutions attended. The Graduate School requires an overall undergraduate grade point average of 2.75 and 3.00 on all graduate work.
2. **GRE** scores are required for admission. GRE scores should be sent directly from Educational Testing Service (ETS); the Institutional Code for the GRE for the UK Graduate School is R1837.
3. **TOEFL or IELTS** scores are required for all applications whose native language is not English.
  - TOEFL scores should be sent directly from ETS; the Institutional Code for the TOEFL for the UK Graduate School is R1837.

- IELTS scores should be sent directly from the IELTS, specifying the University of Kentucky Graduate School, Lexington, KY as the recipient institution.
4. Curriculum vitae
  5. A brief essay, no longer than two single-spaced pages, describing long-term career goals and how the Ph.D. Program in Nutritional Sciences would advance these goals.
  6. Three letters of recommendation
  7. Completed [Research Assistant Application Form](#).

**THE NUTRITIONAL SCIENCES CURRICULUM – DIRECT ADMISSION OR THROUGH IBS**

Nutritional Sciences students follow the curriculum described below. Students may enter the Nutritional Sciences Program from IBS or through direct admission (year 1). Students with extensive prior training in nutrition may petition the Graduate Committee to evaluate modification of the curriculum. Note that graduate students must register for a minimum of 9 hours per semester to remain a full-time student until they pass their qualifying exam.

Some courses are cross-listed with other units and departments. Students in the Nutritional Science programs should always register under the “NS” prefix.

**CORE CURRICULUM FOR PHD PROGRAM IN NUTRITIONAL SCIENCES**

|                 |  |        |
|-----------------|--|--------|
| NS 601          | Integrated Nutritional Sciences Part I                     | (3)    |
| NS 602          | Integrated Nutritional Sciences Part II                    | (3)    |
| NS 603          | Integrated Nutritional Sciences Part III                   | (2)    |
| NS 609          | Ethics   | (1)    |
| or TOX 600      | Ethics in Scientific Research                              | (1)    |
| NS704           | Current Topics in Nutrition                                | (1)    |
| NS 771          | Seminar in Nutritional Sciences**                          | (1+)** |
| IBS 611         | Practical Statistics                                       | (1)    |
| or STA 570      | Basic Statistical Analysis                                 | (4)    |
| IBS 601/BCH 607 | Biomolecules & Metabolism                                  | (3)    |
| IBS 602         | Molecular Biology & Genetics                               | (3)    |
| IBS 603         | Cell Biology & Cell Signaling                              | (3)    |
| IBS 606         | Physiological Communications                               | (3)    |
| or PGY 412G     | Principles of Human Physiology                             | (4)    |
| or PGY 502      | -or- Principles of Systems, Cellular &Molecular Physiology | (5)    |
| Electives       |  | (7-12) |
| Total Credits   |  | 36     |

\*\*All Ph.D. students must present 1 seminar prior to qualifying exams and register for one credit in NS 771 in that semester; in other semesters, students must register in NS 771 for 0 credit hours. In addition, all GCNS doctoral candidates will present a seminar once/year post-qualifying exam and enroll in NS 771 for 0 credits.

**Description of Core Courses**

**NS 601 Integrated Nutritional Sciences I 3 credits**  
 The material covered in CNU/NS 601 consists of three major emphasis areas: (1) review of carbohydrate, lipid, and protein structure, synthesis, absorption, and metabolism, (2) the impact of nutritional influences on macronutrient metabolism to health and disease, (3) the influence of macronutrient metabolism on the regulation of energy balance.

**NS 602 Integrated Nutritional Sciences II 3 credits**

Integrated study of the properties, metabolism, biochemical and physiological functions and interactions of vitamins and minerals, and their relationships to chronic diseases, deficiency symptoms and toxicity.

- |   |   |                   |
|---|---|-------------------|
| <b>CNU/NS 603</b>   | <b>Integrated Nutritional Sciences III</b>      | <b>2 credits</b>  |
| Working knowledge of dietary requirements and guidelines, nutritional assessment, food safety issues and nutritional requirements through the lifecycle. This is a web-based course.  |   |                   |
| <b>NS 771</b>   | <b>Graduate Seminar in Nutritional Sciences</b> | <b>1 credit**</b> |
| Seminars by students, postdoctoral fellows and faculty both internal and external to the University in areas of nutritional sciences  |   |                   |
| <b>NS 704</b>   | <b>Current Topics in Nutrition</b>              | <b>1 credit</b>   |
| This course is designed to develop the student's independent thinking and critical analysis related to various nutritional sciences issues. These skills will be developed through reading assignments and group discussion related to current topics in nutrition.   |   |                   |
| <b>NS 609</b>   | <b>Ethics in Scientific Clinical Research</b>   | <b>1 credit</b>   |
| Students will examine ethical issues in biomedical research using a case-study approach. Representative issues addressed may include data selection and retention, plagiarism, scientific review of grants and manuscripts, scientific misconduct, and informed consent.  |   |                   |
| <b>TOX 600</b>  | <b>Ethics in Scientific Research</b>            | <b>1 credit</b>   |
| The course will commence with an overview of good laboratory practices and present them as the basis of good scientific research, along with an overview of quality assurance and appropriate practices in data analysis and data interpretation. The course will then move to the ethics of human and animal experimentation and discuss the concepts of data and intellectual property, their ownership and access to them. The problems of reviewing other workers' intellectual property such as grant applications, research papers and other intellectual property will be addressed. |   |                   |
| <b>STA 570</b>  | <b>Basic Statistical Analysis</b>               | <b>4 credits</b>  |
| Introduction to methods in biological, behavioral and social sciences data analyzing, surveys, the role of statistics in research, statistical concepts and models, probability and distribution functions, estimation, hypothesis testing, regression and correlation, analysis of single and multiple classification models.  |   |                   |
| <b>IBS 611</b>  | <b>Practical Statistics</b>                     | <b>1 credit</b>   |
| Practical Statistics will introduce students to basic statistical concepts and applications that are used in a majority of biomedical and translational research studies. The emphasis will be on "how" and "why" certain basic statistical applications are used rather than the theory behind various statistical methods. Students will cover materials using didactic lectures, examples of data from the primary literature, and homework problems.  |   |                   |
| <b>IBS 601/BCH 607</b>  | <b>Biomolecules &amp; Metabolism</b>            | <b>3 credits</b>  |
| Introductory biochemistry course designed to provide a basic knowledge of molecular and biochemical principles necessary for advanced graduate study. Protein structure and function, enzyme catalysis, the generation and storage of metabolic energy, amino acid, nucleotide, and lipid metabolism and biological membranes and transport.  |   |                   |



**IBS 602**                                  **Molecular Biology and Genetics**                                  **3 credits**  
 Introductory biochemistry course focused on the cellular mechanisms that underlie the regulated expression of genes, including transcription and translation, as well as basic mechanisms of DNA replication/repair and recombination. Genetic engineering and other experimental approaches critical to molecular biology research will be reviewed.

**IBS 603**                                  **Cell Biology and Cell Signaling**                                  **3 credits**  
 Introduction to cell biology and signaling focused on cell types and architecture, membrane structure, cytoskeletons, mitochondria, cellular mechanisms of development, cell division, cell cycle, apoptosis and prokaryotic cell biology and modulation by bacterial pathogens.

**IBS 606**                                  **Physiological Communications**                                  **3 credits**  
 The function of the mammalian organism from a perspective ranging from the cellular/subcellular to the organ system and whole organ designed to allow students in the IBS curriculum to develop a truly integrative appreciation of biologic function.

**PGY 412G**                                  **Principles of Human Physiology**                                  **4 credits**  
 The objective of this course is to provide the basic physiological mechanisms of human body function and physiological integration of the organ systems to maintain homeostasis. Students will be learning what the different organ systems do and how they do it. With this knowledge a student should be able to form a general understanding of how the body functions in health and disease. The general purpose of the lectures is to reinforce and expand upon the material presented in the text, with a focus on concepts and problem solving skills. Lectures will be further developed with reading assignments and discussion.

**PGY 502**                                  **Principles of Systems, Cellular and Molecular Physiology** **5 credits**  
 Advanced survey of major mammalian physiological systems at the systems, cellular and molecular level; lectures, assigned reading, advanced texts or monographs, demonstrations and problem oriented study questions.

**NUTRITIONAL SCIENCES PhD CURRICULUM: YEAR 1**

Courses taken the first year by students in Nutritional Sciences will vary, depending on whether the student enters the program directly, or through the IBS program.

**FIRST YEAR CURRICULUM FOR STUDENTS ENTERING THROUGH IBS:**

**IBS Curriculum, FALL Semester**

|        |  |
|--------|--|
| IBS601 | Biomolecules and Metabolism (3*)       |
| IBS602 | Molecular Biology and Genetics (3)     |
| IBS610 | Critical Reading/Small Groups (2)      |
| IBS611 | Practical Statistical Applications (1) |
| IBS607 | Seminar in IBS (0)                     |
| IBS609 | Research in IBS (1)                    |

**IBS Curriculum, SPRING Semester**

|        |                                     |
|--------|-------------------------------------|
| IBS603 | Cell Biology and Cell Signaling (3) |
| IBS606 | Physiological Communications (3)    |
| IBS608 | Special Topics in IBS (2)           |
| IBS607 | Seminar in IBS (0)                  |
| IBS609 | Research in IBS (1)                 |
| TOX600 | Ethics (1)                          |

**SAMPLE FIRST YEAR CURRICULUM FOR STUDENTS DIRECTLY ADMITTED INTO NUTRITIONAL SCIENCES**

**YEAR 1, FALL Semester**

|          |  |             |
|----------|--|-------------|
| IBS 601  | Biomolecules & Metabolism                | 3 credits   |
| IBS 602  | Molecular Biology and Genetics           | 3 credits   |
| NS 609   | Ethics in Clinical Research              | 1 credit    |
| NS 771   | Graduate Seminar in Nutritional Sciences | 0 credit    |
| Elective |  | 2-3 credits |

**YEAR 1, SPRING Semester**

|          |  |             |
|----------|--|-------------|
| IBS 603  | Cell Biology and Cell Signaling          | 3 credits   |
| IBS 606  | Integrated Medical Sciences              | 3 credits   |
| NS 771   | Graduate Seminar in Nutritional Sciences | 0 credit    |
| Elective |  | 2-3 credits |

**SAMPLE NUTRITIONAL SCIENCES PhD CURRICULUM: YEAR 2**

Courses taken the second year will vary, depending on whether the student entered the program directly or through the IBS program, and the particular interest of the student.

**YEAR 2 CURRICULUM, FALL Semester (example)**

|            |  |           |
|------------|--|-----------|
| NS 601     | Integrated Nutritional Sciences I        | 3 credits |
| STA 570    | Basic Statistical Analysis               | 4 credits |
| NS 771     | Graduate Seminar in Nutritional Sciences | 0 credit  |
| CNU/NS 603 | Integrated Nutritional Sciences III      | 2 credits |
| Elective   |  | variable  |

**YEAR 2 CURRICULUM, SPRING Semester (example)**

|        |                                    |           |
|--------|------------------------------------|-----------|
| NS 602 | Integrated Nutritional Sciences II | 3 credits |
|--------|------------------------------------|-----------|

|          |  |            |
|----------|--|------------|
| NS 704   | Current Topics in Nutrition              | 1 credit   |
| NS 771   | Graduate Seminar in Nutritional Sciences | 1 credit   |
| Elective |  | ≥4 credits |

### **ELECTIVES COURSES**

Students must successfully complete a minimum of 7-12 credit hours in electives to meet the minimum requirement of 36 total credits. Elective courses are recommended by the Advisor and approved by the Advisory Committee.

Note, IBS 610 & 608 taken in year one by students admitted through the IBS program fulfill elective requirements.

### **Approved electives in Nutritional Sciences PhD program:**

|                |  |             |
|----------------|--|-------------|
| IBS 607        | Seminar in Integrated Biomedical Sciences                    | 0 credit    |
| IBS 608        | Special Topics in Integrated Biomedical Sciences             | 2 credits   |
| IBS 609        | Research in Integrated Biomedical Sciences                   | 1 credit    |
| NS/606         | Molecular Biology Applications in Nutrition                  | 2 credits   |
| NS 790         | Research in Nutritional Sciences<br>(Before qualifying exam) | 1-6 credits |
| CNU 501        | Nutraceuticals and Functional Foods                          | 2 credits   |
| CNU 502        | Obesity C2C: Cell to Community                               | 2 credits   |
| CNU 611        | Advanced Medical Nutrition Therapy                           | 2 credits   |
| CNU 612        | Examination Skills for the Clinical Nutritionist             | 2 credits   |
| CNU/NS 604     | Lipid Metabolism   | 3 credits   |
| CNU/NS 605     | Wellness and Sports Nutrition                                | 3 credits   |
| CNU/NS 702     | Problem-Based Case Studies                                   | 1-5 credits |
| DHN 603        | Advanced Community Program Development                       | 3 credits   |
| ASC 681        | Energy Metabolism  | 3 credits   |
| ASC 683        | Protein metabolism   | 3 credits   |
| ASC 689        | Physiology of Nutrient Digestion/Absorption                  | 3 credits   |
| ASC 684        | Advanced Ruminant Nutrition                                  | 3 credits   |
| ASC 686        | Advanced Non-ruminant Nutrition                              | 3 credits   |
| FSC 638        | Food Proteins  | 3 credits   |
| FSC 640        | Food Lipids  | 3 credits   |
| FSC 434G       | Food Chemistry   | 4 credits   |
| BCH 610        | Biochemistry of Lipids and Membranes                         | 3 credits   |
| BCH/BIO/MI 615 | Molecular Biology  | 3 credits   |
| CPH 605/PM 620 | Epidemiology   | 3 credits   |
| CPH 645        | Food Systems, Malnutrition and Public Health                 | 3 credits   |
| EDP661         | Counseling Techniques II                                     | 3 credits   |
| GS610          | College Teaching   | 3 credits   |
| KHP420G        | Physiology of Exercise                                       | 3 credits   |
| KHP 620        | Advanced Exercise Physiology                                 | 3 credits   |
| KHP 720        | Sports Medicine  | 3 credits   |
| MI685          | Advanced Immunology  | 3 credits   |
| MI 710         | Molecular Cell Biology                                       | 3 credits   |
| PGY604         | Advanced Cardiovascular Physiology                           | 3 credits   |
| PGY607         | Hormonal Control Mechanisms                                  | 3 credits   |
| BCH 609        | Plant Biochemistry   | 3 credits   |

## DOCTORAL CANDIDACY

Students become doctoral candidates after passing the qualifying exam. Students have five years to earn their doctoral degree after the exam, unless the Graduate School is petitioned to allow additional time. Doctoral candidates who have passed their qualifying exam will register for **NS 767** (Dissertation Research, **2 credit hours**) every semester.

### A. ADVISOR AND ADVISORY COMMITTEE

- **Step 1: Formation of an Advisory Committee:** Your major professor and advisory committee should be formally appointed by the Graduate School during **your first year in the program**. This will require completion of the "Doctoral Advisory Committee Request" online form ([http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)). Every effort should be made to maintain the same committee composition throughout your tenure as a doctoral student. Should a change be necessary, for example when a committee member leaves the university or retires, a formal request must be made to and approved by the Graduate School. To do this you must complete a "Doctoral Advisory Committee Modification Request" form which is also available after you log in.
- **Step 2: The Qualifying Examination (3 Parts):** At a minimum, you must complete the equivalent of two years of residency (36 graduate credit hours) to be eligible to sit for the qualifying examination. The request to schedule the qualifying examination must be submitted to the Graduate School a minimum of three weeks in advance of the planned date.  
[http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)
- **Step 3: Notification of Intent to Schedule a Final Doctoral Examination (NOTIF):** You are eligible to sit for the final doctoral examination after completion of two semesters of post-qualifying residency. In order to provide sufficient time for the Graduate School to identify an outside examiner, you must submit the NOTIF a **minimum of eight weeks** prior to the anticipated defense date.

The DGS will not submit the NOTIF on behalf of the student unless two conditions are met:

- 1) A rough draft of the dissertation is submitted electronically to the DGS; and
- 2) The major advisor notifies the DGS in writing that the student is on track to complete a final draft at least two weeks before the scheduled defense. (Dissertation Progress Form)

*To prevent multiple submissions of the NOTIF, this step should not be completed until a complete rough draft of the dissertation has been submitted to your committee chair for review.*

[http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)

- **Step 4: Request for Final Doctoral Examination:** This request must be submitted a minimum of two weeks prior to the scheduled date of the examination. Your outside examiner should be provided with a final copy of the dissertation at this time.  
[http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)
- A check Sheet for Doctoral Students can be found here:  
[http://www.research.uky.edu/gs/Forms/Check\\_sheet\\_Doctoral\\_Students.pdf](http://www.research.uky.edu/gs/Forms/Check_sheet_Doctoral_Students.pdf)

## B. QUALIFYING EXAMINATION FOR THE PH.D. STUDENT

A qualifying examination is required of all doctoral students. It verifies that the student has sufficient understanding of and competence in his/her chosen field in order to become a Doctoral Candidate.

- The Qualifying Examination is given after completing the course requirements of the Nutritional Sciences PhD program.
- Students must submit a completed *Recommendation for Qualifying Examination* form ([http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)) to the Graduate School at least three weeks prior to the scheduled examination.
- The DGS will report the results of the Qualifying Examination to the Graduate School within 10 days of its conclusion.

If the result of the qualifying exam is failure, the Committee determines the conditions to be met before another examination may be given. The minimum time between examinations is four months; however, a second examination must be taken within one year after taking the first examination. A third examination is not permitted. The Qualifying Examination should be completed in four weeks.

### The Qualifying Exam Consists of Three Parts:

**Part I.** *Closed book written examinations* consisting of questions by each Advisory Committee member.

Students may take each part of the committee member's written examination on separate days; however, the written examination must be completed within one week. (Note: Each faculty is required to provide exam questions that will take approximately three (3) hours for the student to answer.)

**Part II.** *Open book examinations.* Completion of a research proposal on a novel topic developed in consultation with the advisor and approved by the Advisory Committee. The topic may be related to the thesis project, and must be developed and written independently. The proposal is due seven (7) days before the oral examination and not later than three (3) weeks from the start of the closed book examination. The student is encouraged to initiate development of the proposal as early as possible after entry into the program.

**Part III.** *Oral exam* – will usually concentrate on weakness found in the written exam portions but can be directed to any of the material covered in the student's curriculum.

## Preparing for the Qualifying Exam:

A qualifying examination is required of all doctoral students. It is given after completing the course requirements for the Nutritional Sciences PhD program. It verifies that the student has sufficient understanding of and competence in his/her chosen field in order to become a Doctoral Candidate. **The Qualifying Examination should be completed in four weeks starting with the first day of the closed book exam.**

The Qualifying Exam Consists of Three Parts:

- (1) The completion of a research proposal on a novel topic developed in consultation with the advisor and approved by the Advisory Committee,
- (2) closed book written examinations consisting of questions by each Advisory Committee member and
- (3) an oral Exam.

**Step 1:** You are required to complete a research proposal on a novel topic developed in consultation with the advisor and approved by the Advisory Committee. The topic may be related to the thesis project, and must be developed and written independently. The proposal is due seven (7) days before the oral examination.

**Step 2:** Schedule a time to take your oral exams with your Advisory Committee, and submit a completed Recommendation for Qualifying Examination form to the Graduate School at least three weeks prior to the scheduled examination:

([http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm))

Reserve a room for your oral exam. For help finding a room email Veronique Thibault ([vthibau@uky.edu](mailto:vthibau@uky.edu))

\*A helpful website to use when trying to schedule a time to meet with committee member is [www.doodle.com](http://www.doodle.com)

**Step 3:** Schedule a time to take your closed-book written exams. They should be scheduled no more than 4 weeks before the date of your oral exam. You may take each committee member's written examination on separate days; however, the written examination must be completed within one week. Your advisor should email all members of the committee and request that they provide examination questions.

**Step 4:** Your oral exam will usually concentrate on weaknesses found in the written exam portions, but can be directed to any of the material covered in the curriculum.

The DGS will send the advisor the degree card and evaluations for all committee members to complete. Your advisor should return the signed degree cards to the DGS or someone in the main office, who will deliver to The Graduate School.

If the result of the qualifying exam is failure, the Committee determines the conditions to be met before another examination may be given. The minimum time between examinations is four months; however, a

second examination must be taken within one year after taking the first examination. A third examination is not permitted.

### C. DOCTORAL DISSERTATION

Prior to the Final Examination, the doctoral candidate must present a dissertation that represents the culmination of a major research project. It must be a well-reasoned, original contribution to knowledge in the field of study and should provide evidence of high scholarly achievement.

The students Advisor will provide the primary guidance in planning and preparing the dissertation, however other members of the Advisory Committee should be consulted and may be involved as well.

The dissertation should be written so that the chapters are the format of manuscripts (which will be submitted to refereed journals for publication).

The Advisory Committee must approve the dissertation two weeks before the scheduled defense.

The dissertation form must conform to the specific instructions prepared by the Graduate School. A copy of the Instructions for the Preparation of Theses and Dissertations may be obtained from the Graduate School Website: [http://www.research.uky.edu/gs/CurrentStudents/theses\\_prep.html](http://www.research.uky.edu/gs/CurrentStudents/theses_prep.html)

*Dissertation fee payments should be made at the Student Billing Services, 18 Funkhouser Building. Students may also have their dissertation copyrighted if desired. See the UK Graduate Bulletin for details.*

<http://www.research.uky.edu/gs/bulletin/bullinfo.shtml>

### D. FINAL EXAMINATION

The Final Examination will consist of an open formal seminar presentation on the dissertation topic followed by an oral exam. It will include a defense of the dissertation and may be as comprehensive in the major and minor areas as the Advisory Committee chooses. An expanded Advisory Committee chaired by the Advisor conducts the oral examination. The Dean of the Graduate School and the President of the University are “ex officio” members of all final examination committees.

*The examination is a public event; scheduling is published and announced prior to the date of defense. Any member of the University may attend.*

- At least 30 days prior to the Final Examination, following notification by the Advisor that a copy of the dissertation has been distributed to members of the Advisory Committee, the DGS will present to the Graduate School as *Notification of Intent to Schedule a Final Doctoral Examination*.  
[http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm)
- The Notification form must arrive at the Graduate School a **minimum of 8 weeks** prior to the first day of the anticipated week of defense. At this time, the Graduate Dean appoints an Outside Examiner as a core member of the Advisory Committee.

- The Final Examination must take place no later than **eight days prior to the last day of classes of the semester** in which the student expects to graduate. At the time the Final Examination is scheduled (at least two weeks before the date desired), the *Request for Final Doctoral Examination* [http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection\\_Screen.cfm](http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm), along with an acceptable copy of the dissertation, must be presented to the Graduate School. The draft must be complete in content, including all footnotes, tables, figures, and appendices. A full bibliography or set of references must be included, along with a title page and abstract.
- After the Final Examination is passed, the final copy of the dissertation is prepared. Final copies are submitted to the Graduate School along with the signature of the Advisor and the DGS.
- The dissertation in its final form must be received in the Graduate School office **within 60 days of the Final Examination**. *If this deadline is not met, the Candidate must undergo a second examination.*
- **Cancelation of a Final Examination** (<http://ukgrad.askadmissions.net/ask.aspx>):  
A Final Examination may be canceled prior to its official start for substantive reason with no permanent consequences for the student. The student has not failed the examination in this case because it was never officially begun. Substantive reasons can include a missing committee member, a sudden difficulty in the candidate's personal life that may affect performance, or a (late) opinion on the part of one or more committee members that the dissertation is not ready to defend. In such cases, the committee may hold an open or closed discussion to review the issues at hand and reach a decision on whether to hold the examination or not. Furthermore, the candidate does have the right to cancel the examination prior to its start. If the examination is canceled, it must be formally rescheduled with the Graduate School in the standard fashion. A minimum two-week interval is required for re-scheduling the examination.

## E. APPLICATION FOR DEGREE

An Application for Degree must be filed with the Graduate School **within 30 days** after the beginning of the semester that the student expects to complete his/her work.

<https://myuk.uky.edu/irj/portal> (Click on Student Services / myRecords / Graduate Degree Application)

## F. DEGREE GUIDELINES/GENERAL GRADUATE SCHOOL REQUIREMENTS

*The Ph.D. degree will be conferred on a candidate who has:*

- Completed all coursework
- Passed a comprehensive qualifying examination in nutritional sciences as well as the dissertation project
- Presented a satisfactory dissertation
- Passed a final oral examination
- Shows evidence of creative scholarly attainment

Link to Graduate School Forms: <http://www.research.uky.edu/gs/forms.html>



## **ACADEMIC TOPICS**

### **Research Assistantships**

- Candidates for a Ph.D. are required to apply for a Research Assistantship, which represents an integral part of the Ph.D. program.

### **Research Integrity**

- All biomedical research in the Division of Nutritional Sciences follows strict federal and state mandates concerning research protocols, use of laboratory animals and research involving human subjects.
- The Office of Research Integrity (ORI) both supervises and monitors adherence to these mandates. <http://www.research.uky.edu/ori/>
- The ORI also supports the institution in promoting ethical conduct of research and educating UK students and employees regarding research misconduct regulations.
- Students must adhere to all approved protocol and procedures set forth by their mentors.

### **Honor Code/Plagiarism**

- Pursuit of a graduate degree in Nutritional Sciences constitutes an agreement to adhere to high standards of honesty and ethical behavior.
- Cheating, plagiarism, and any scientific misconduct such as falsification of data or deliberate misuse of equipment will be reviewed by the Graduate Program Committee and are causes for dismissal from the program.
- Procedures outlined in the UK Student Code will be adhered to with respect to a charge of misconduct. <http://www.uky.edu/StudentAffairs/Code/part1.html>

### **Evaluation of Academic Performance (Termination of a Student)**

- Students are required to submit an Individual Development Plan (IDP) and updated *curriculum vitae* annually to the Graduate Coordinator, Veronique Thibault, (MS310 UKMC; Phone: (859) 323-6124; E-Mail: [vthibau@uky.edu](mailto:vthibau@uky.edu)). Student progress will be reviewed by the Graduate Advising Committee.
- Students must maintain a semester GPA of at least 3.0 in all coursework, satisfactory performance in lab rotations, satisfactory participation in seminars, and adherence to the rules and procedures described in the handbook.
- Students who fall below a 3.0 GPA in any one semester will be evaluated on an individual basis by the Graduate Program Committee for placement on probation, with the possibility of dismissal.

- Graduate students in a Research Assistant (RA) position must adhere to the contract of the position as defined in the GSAS form. If documentation demonstrates that conditions of the position are not met, then the RA contract may be terminated, pending final approval by the Director of Nutritional Sciences.

### **Communication Skills**

- The development of good communication skills is a vital part of graduate education. These skills are improved through a wide range of activities including seminar courses, journal clubs, teaching experiences, the writing of manuscripts, research proposal and grant applications, presentations at local, regional and national meetings, as well as the final dissertation.
- Proficiency in English is required of all graduate students in the Nutritional Sciences program. English as a Second Language classes are available to the Division's students. Please contact the Student Coordinator for further information.

### **Research Presentations**

Students are encouraged to present research data at national/international professional meeting such as those organized by the Federation of American Societies for Experimental Biology (FASEB), American Association for Cancer Research, American Heart Association, Society for Free Radical Biology and Medicine, American College of Nutrition, American Diabetes Association and Institute of Food Technologists. These meetings provide an opportunity to interact with peers, faculty and others with common interests.

### **Student Travel Support Requirements**

Support for travel to professional meeting will be provided only when a research paper is to be presented. An application must be completed and accompanied by the following documents:

- An abstract of the paper to be presented
- A copy of the invitation to present or a program confirmation card (a copy of the meeting program with the student's name listed as a presenter).
- An itemized budget of expenses.
- Students must acknowledge the "Division of Nutritional Sciences" as their affiliation when presenting a paper with slides or a poster.
- Students must submit an application to the Graduate School to obtain travel support.

The Graduate School has established monthly deadlines for the submission of applications requesting travel support.

- Deadlines and the *Student Support Travel* form can be found at:  
<http://www.research.uky.edu/gs/StudentFunding/supportfunding.html>

- The Graduate School will fund expenses covering no more than three days. Mere attendance at professional meetings will not be supported.

### **Teaching Experience**

- Students are encouraged to attend the Annual Teaching Assistant Orientation Workshop sponsored by the Graduate School each fall.
- Students are also encouraged to take both GS 610 (College Teaching, 1 credit hr.) and GS 650 (Preparing Future Faculty, 1 credit hr.), to prepare for academic careers and enhance their teaching skills.

### **Integrated Biomedical Sciences Program (IBS)**

Students are expected to assist the department in introducing new students to the IBS program. This may include attending lunches and question/answer sessions, or by giving tours or demonstrations at the request of the Chair or DGS.

### **MISCELLANEOUS**

#### **Vacations and Holidays**

New students should be aware that graduate school differs from undergraduate study in that graduate work is a full-time endeavor throughout the 12 months of the year. In general, students are expected to be in lab during the workweek when not in class or studying. Students should also be aware that time-sensitive scientific research can often require work on holidays, weekends, and nights. The department recommends the following guidelines for planning time off:

- Students on Research Assistantships should be allowed two weeks of vacation per year in addition to holidays approved for all staff at the University of Kentucky.
- Spring Break is **not** a break for students on assistantship; the Christmas/New Year holiday usually falls between December 25<sup>th</sup> and January 1<sup>st</sup>.
- Effective communication between students and their advisors before vacation times is in everyone's best interest.
- RA's must submit a UK Absence Record, signed by both the student and the advisor for all travel, sick, and vacation time. These records will be maintained in the GCNS payroll files for each RA.

#### **Health Care Colleges Code of Student Professional Conduct:**

<http://www.uky.edu/regs/files/HCCcode.pdf>

## **Personal Safety**

Students should always consult with a faculty member before using new equipment, toxins, chemicals or infectious agents. Students should also be aware that the University requires specific safety training before using various methods and equipment. The following is a partial list of University web pages where you can register for specific training classes or review appropriate safety manuals.

**Blood Borne Pathogens:** <http://ehs.uky.edu/classes/>

**Chemicals and Lab Safety:** <http://ehs.uky.edu/classes/>

**Hazardous Waste:** <http://ehs.uky.edu/classes/>

**Lab Animals:** [http://www.research.uky.edu/ori/univet/training/Web-Based\\_Training.htm](http://www.research.uky.edu/ori/univet/training/Web-Based_Training.htm)

**Laser Safety:** <http://ehs.uky.edu/classes/>

**Radiation Safety:** <http://ehs.uky.edu/classes/>

**Additional safety information:** <http://ehs.uky.edu/>

## **Keys**

Requests for lab or equipment room keys must be approved by your research advisor and departmental chair. Key forms are obtained from the departmental administrator.

## **Photocopier Privileges**

Students may use the departmental photocopier for either research or academic, but not personal, use. An access code may be obtained from the departmental administrator.

## **E-Mail**

All Nutritional Sciences Ph.D. Students are required to activate their UK e-mail addresses. All correspondence from the Department as well as from the departmental staff will be communicated only through the UK e-mail system.