

# Doctor of Philosophy in Medical Nutrition Science

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The doctoral program in medical nutrition science is designed for students with a bachelor's or master's degree in nutrition (or with a degree in biological sciences that included course work in nutrition) to have the opportunity to pursue research at a world-class academic health center renowned for its research facilities. This program emphasizes course work in the core science of nutrition (integration of nutrition with biochemistry and physiology), biostatistics, and research using advanced research methodology. The program is offered by the KU Department of Dietetics and Nutrition (<http://www.kumc.edu/school-of-health-professions/dietetics-and-nutrition.html>).

Graduates are prepared for research and leadership roles in academia, industry, government, clinical departments of academic medical centers and centers of advanced clinical practice. Program faculty conduct human nutrition research and registered dietitians are encouraged to apply; however, students enrolled in this program are not eligible to become RDs unless they have met all prerequisites of the Academy of Nutrition and Dietetics (<https://www.eatrightpro.org/acend/accredited-programs/about-accredited-programs/>) and have completed a dietetic internship. More information. (<https://catalog.ku.edu/health-professions/dietetics-nutrition/certificate/>)

The program is offered on the KU Medical Center (<http://www.kumc.edu/>) campus of the University of Kansas which along with The University of Kansas Hospital (<http://www.kumed.com>) forms the region's top academic health center. The mission of this alliance among health care professions is to create a modern environment for instruction, research, and service, and to provide these services across multiple constituencies at local, regional and national levels.

The University of Kansas is a major comprehensive research and teaching institution serving as a center for learning, scholarship and creative endeavor. A major strength of KU's medical nutrition science program is the opportunity for clinical and translational research.

## Academic Objectives of Program

- To graduate students capable of conducting research using appropriate research methods, ethical procedures and statistical analysis.
- To graduate students with advanced knowledge in the nutritional sciences who will contribute to the growing body of knowledge in the medical nutrition science arena.
- To graduate students who demonstrate professional attributes such as advocacy, critical thinking, flexibility, time management, and work ethic within various organization cultures.
- To enrich the scholarly and collegial culture of the Department of Dietetics and Nutrition at KU Medical Center.

This program emphasizes course work in the core science of nutrition (integration of nutrition with biochemistry and physiology), biostatistics and human nutrition research using advanced research methodology. The course work required depends upon whether the student is accepted to the program from a bachelor's or master's degree program, as well as on the area of study of these degrees (nutrition, biological sciences or

other areas of study). Detailed instructions on how to apply are posted on the Department of Dietetics and Nutrition (<https://www.kumc.edu/school-of-health-professions/academics/departments/dietetics-and-nutrition/academics/phd-in-medical-nutrition-science/how-to-apply.html>) website. Application deadlines are February 1 for fall semester entry and September 1 for spring semester entry.

## Admission requirements:

- A bachelor's degree or master's degree from a regionally accredited institution is required and must be documented by submission of official transcript indicating the degree has been conferred before entering the program. Official transcripts must be submitted for all courses taken at every institution. The bachelor's and/or master's degree should be in nutrition or other biological sciences. Students with degrees from outside the U.S. may be subject to transcript evaluation indicating the degree is equivalent to a U.S. degree and meets the minimum cumulative grade-point average requirement.
- A cumulative grade-point average of at least a 3.0 on a 4.0 scale for the bachelor's degree is required.
- Applicants who are not native speakers of English, whether domestic or international, must demonstrate they meet the minimum English proficiency requirement.
- Before entering the program, students must have completed prerequisite courses in biochemistry (one semester), physiology (one semester), and nutrition (more than one semester preferred).
- A resume or curriculum vitae is required and must include prior employment and participation in professional and/or voluntary organizations (e.g., hospital, alumni or nonprofit.)
- A goal statement will be submitted detailing the applicant's educational and professional goals.
- Three references are required. A reference provides a professional recommendation on the applicant's behalf. It is preferred that college instructors, academic advisors or supervisors provide these recommendations. The recommendations may not be obtained from family members or friends.
- The Joint Commission requires all incoming students to pay for a background check (<https://catalog.ku.edu/graduate-studies/kumc/#BackgroundCheck>). This one-time fee must be paid directly to the company performing the background investigation. For more information, please see the School of Health Professions background check instructions. (<http://www.kumc.edu/school-of-health-professions/background-checks-and-drug-screening-for-students.html>)

Applicants will be assessed based on these requirements. Applicants who meet admission requirements will be interviewed by department faculty. After an applicant has been admitted, a program may defer an applicant's admission for one year after which time the applicant must submit a new application.

Admission requirements are subject to change. In most cases, use the catalog of the year student entered the program. *Other years' catalogs*».

The Ph.D. in Medical Nutrition Science degree program consists of coursework, research experience, and the successful completion of a doctoral dissertation. Relevant prior graduate work and the student's research interests are taken into consideration in setting up individual programs of study leading to the Ph.D.

The program offers a great deal of flexibility. RDs embedded in clinical departments may continue to be employed and may choose to do their dissertation research on clinical problems relevant to the clinical population with whom they work. Students may also do their dissertation research on a nutrition problem with a mentor from a clinical department (and funded by that individual), however, the dissertation committee must be chaired by a member of the Department of Dietetics and Nutrition holding one or more degrees in nutrition. The total course work required depends upon whether the student is accepted to the program from a bachelor's or a master's degree, and it depends upon the area of study of that degree (nutrition, biological sciences or other areas of study). The hours for completion and suggested coursework is determined by the student's research advisor and research committee.

### Degree requirements:

- Degree requirements are normally completed within 4 years of admission to the program although a maximum of 8 years is allowed.
- Cumulative grade-point average (GPA) of at least a 3.0 for all KU graduate coursework.
- Successful completion of the University's Research Skills and Responsible Scholarship (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>) requirement prior to the semester the Oral Comprehensive Examination is scheduled.
  - Successful completion of DN 900 Techniques in Nutrition Research and Human Subject certification meets the Research Skills requirement.
  - Successful completion of GSMC 856 Introduction to Research Ethics or DN 932 Ethics in Clinical Nutrition Research meets the Responsible Scholarship requirement.
- Successful completion of the Residence Requirement (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>) prior to the semester the Oral Comprehensive Examination is scheduled. The requirement is met by enrollment in full-time status a minimum of two semesters.
- Successful completion of the Qualifying (written) Examination. This examination takes place after completion of DN 895 and DN 896. The goal of this examination is to assess that a doctoral aspirant has the necessary nutrition knowledge and analytical, communication and writing skills to successfully complete a PhD degree.
- Successful completion of the Oral Comprehensive Examination (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>). Students are recognized as formal doctoral candidates after they have passed the comprehensive examination. The Ph.D. candidate must submit a written dissertation proposal describing an original research project in some aspect of nutrition research, and defend the proposal in a comprehensive oral exam before beginning the dissertation research. For this examination, students must: exhibit the potential for original scientific thought; be familiar with the relevant literature and be able to identify significant research questions in their field; have a good understanding of the underlying principles of the experimental methodologies proposed; show an ability to critically analyze data and to anticipate experimental outcomes; and, have a good fundamental knowledge of nutrition science.
- Successful completion of the Post-Comprehensive Enrollment (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>) requirement.
- Enrollment in a minimum of one (1) credit hour of DN 999 Dissertation the semester the student will defend dissertation and graduate.
- Successful completion of the Final Oral Examination (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>) (dissertation

defense). The dissertation should be comparable in scope to justify first authorship on a rigorously peer-reviewed manuscript. Students qualifying for a PhD degree in Medical Nutrition Science must have at least one first-author peer-reviewed research publication in review and at least one additional first-author publication prepared for submission at the time of the defense. Students are encouraged to submit their work for publication well before the defense if possible, especially if they wish to be competitive for a postdoctoral research position.

- Successful Dissertation Submission and Publication (<http://catalog.ku.edu/graduate-studies/kumc/#programstext>) (according to Office of Graduate Studies policy.)
- Successful completion of the following courses:

Code	Title	Hours
<b>Core Courses within Department</b>		
DN 895	Advanced Macronutrients and Integrated Metabolism	3
DN 896	Advanced Micronutrients and Integrated Metabolism	3
DN 900	Techniques in Nutrition Research	3
DN 901	Graduate Seminar in Nutrition (take for 1 credit hour two different semesters)	1
DN 901	Graduate Seminar in Nutrition (take for 1 credit hour two different semesters)	1
DN 932	Ethics in Clinical Nutrition Research (optional to meet Responsible Scholarship requirement)	1
DN 990	Doctoral Research (minimum 9 credit hours required for degree with no more than 9 credit hours taken in a single semester)	9
<b>Core Courses from Outside Department</b>		
BIOS 720	Analysis of Variance	3
BIOS 730	Applied Linear Regression	3
GSMC 856	Introduction to Research Ethics (optional to meet Responsible Scholarship requirement)	1
<b>Dissertation</b>		
Minimum required is 1 credit hour		
DN 999	Dissertation (this course may be taken multiple semesters while writing the dissertation )	1-6

- Specific elective courses required by the student's research committee are dependent upon the student's area of research concentration. The total elective hours may vary according to needs. Elective courses may be chosen from the following list but are not limited to this list. Electives chosen are the ultimate decision of the student's research advisor and research committee.

Code	Title	Hours
<b>Recommended Electives</b>		
DN 890	Graduate Research	1-4
DN 980	Nutrigenomics and Nutrigenetics in Health and Disease	3
BIOS 740	Applied Multivariate Methods	3
CLS 742	Scientific Writing	1
BIOS 811	Scientific Rigor and Reproducibility	3
PRVM 872	Grant Writing	3
<b>Options for General Electives</b>		
DN 800	Selected Topics in Clinical Dietetics:_____	1-6

DN 810	Nutrition Assessment	3
DN 818	Seminar in Dietetics & Nutrition II	1
DN 819	Scientific Writing for the Nutritional Sciences	1
DN 825	Medical Nutrition Therapy I	3
DN 826	Medical Nutrition Therapy II	3
DN 829	Nutrition and Aging	3
DN 834	Methods of Research in Nutrition	3
DN 838	Advanced Medical Nutrition Therapy	3
DN 839	Clinical Aspects of Nutrition Support	3
DN 840	Advanced Topics in Nutrition	1-2
DN 841	International Nutrition	1-3
DN 842	United States Public Health Nutrition	1-3
DN 854	Special Problems in Dietetics and Nutrition	1-4
DN 857	Motivational Interviewing in Public Health Settings	1
DN 862	Maternal and Child Nutrition	3
DN 865	Nutrition in Sports and Exercise	3
DN 870	Health Behavior Counseling	1
DN 875	Pediatric Clinical Nutrition	3
DN 876	Intervention for the Prevention & Management of Obesity	3
DN 880	Dietary and Herbal Supplements	3
DN 885	Nutritional Biochemistry	3
DN 897	Micronutrient Research in Human Nutrition	1
DN 910	Leadership Essentials in Clinical Nutrition	3
DN 920	Nutrition Communication for Advanced Practice	3
DN 930	Evidence Analysis in Clinical Nutrition	3
DN 950	Interprofessional Collaboration in Clinical Nutrition	2
DN 970	Pharmacology in Clinical Nutrition	3
DN 971	Advanced Nutrition Counseling	3
DN 972	Frontiers in Medical Nutrition Therapy	3

DN 890	2 BIOS 720	3 DN 900	3
	<b>5</b>	<b>6</b>	<b>3</b>

**Year 2**

Fall	Hours Spring	Hours Summer	Hours
DN 890 (or elective)	2-3 DN 890 (or elective)	2-3 DN 980, 890, or 990	3
DN 901	1 DN 901	1	
BIOS 730	3 BIOS 740	3	
Oral Comprehensive Exam may be scheduled as early as this semester if approved by committee to proceed.			
	<b>6-7</b>	<b>6-7</b>	<b>3</b>

**Year 3**

Fall	Hours Spring	Hours Summer	Hours
DN 990	3-6 DN 990	3-6 DN 990	3-6
Elective	1-3 Elective	1-3 Elective	1-3
Enroll in minimum 6 credit hours.	Enroll in minimum 6 credit hours.	Students may petition to reduce their hours to 1 credit per semester through the semester they successfully complete their dissertation defense. To do so, students must have completed 18 credits. Credits taken the semester the oral comprehensive exam is passed can be counted toward the 18 credits required for this petition.	
	<b>4-9</b>	<b>4-9</b>	<b>4-9</b>

**Year 4**

Fall	Hours Spring	Hours
DN 999	1 DN 999	1

Degree requirements and course descriptions are subject to change. Any courses taken as an equivalent must be approved by the Graduate Director and the Office of Graduate Studies. In most cases, use the catalog of the year student entered the program. *Other years' catalogs*».

Students may start this program in the fall or spring semester. The plan of study below shows a typical progression if the student starts in the fall semester. Course requirements are based on recommendations of the students' academic advisory committee.

### Typical Plan of Study

**Year 1**

Fall	Hours Spring	Hours Summer	Hours
DN 895	3 DN 896	3 Qualifying (written) Exam is usually completed this semester after completion of DN 895 and DN 896.	

Final Oral Exam (dissertation defense) may be scheduled as early as this semester if approved by committee to defend and graduate.	
1	1

**Total Hours 43-60**

Reasonable accommodation will be considered and may be made to qualified students who disclose a disability, so long as such accommodation does not significantly alter the essential requirements of the curriculum and the training program, or significantly affect the safety of patient care. Students who disclose that they have a disability are considered for the program if they are otherwise qualified. Qualified students with a disability who wish to request accommodations should provide appropriate documentation of disability and submit a request for accommodation to:

The Office for Academic Accommodations

Cyn Ukoko, Senior Coordinator of Academic Accommodations

913-945-7035 or 711 TTY

cukoko@kumc.edu

1040 Dykes Library

The Department of Dietetics & Nutrition and the University of Kansas Medical Center have a commitment to nondiscrimination, access and reasonable accommodation of students with disabilities. Therefore, all students admitted to the PhD Degree in Medical Nutrition Science must be able to meet the following requirements and expectations with or without an accommodation. The PhD degree prepares students to practice dietetics and nutrition and to interpret and participate in research in nutrition within academic and healthcare organizations. Graduates need knowledge and skills to function in diverse practice and research settings. All students who are admitted into the PhD degree program in Dietetics & Nutrition are able to do the following:

**Observe:** Specific observation skills include, but are not limited to, being able to accurately assess lectures, demonstrations, research, and practice situations in the practice and research of health sciences.

**Communicate:** Students must have the ability to use multiple communication techniques (oral, written, nonverbal) that enable them to communicate with research participants, teachers, health providers, and faculty. Students must be able to report to members of the team, express accurate information to research participants, and teach, explain, direct and counsel people.

**Psychomotor:** Students must have sufficient motor capacities and motilities to be able to generate, calculate, record, evaluate and transit information; prepare assignments; deliver public presentations to large and small audiences; collect specimens and perform basic tests and physical assessments on individuals, e.g. anthropometric assessments, finger sticks for blood glucose testing, using glucometers, assessing skin

fold thickness, taking blood pressure; and/or working in institutional and food demonstration kitchens.

**Intellectual and Cognitive Abilities:** Students must be able to measure, calculate reason, analyze, synthesize, integrate, and remember to apply information. Creative problem solving and clinical reasoning requires all of these intellectual abilities.

**Professional and Social Attributes:** Students must exercise good judgment and promptly complete all responsibilities required of the program. They must develop mature, sensitive, and effective professional relationships with others. They must be able to tolerate taxing workloads and function effectively under stress. They must be able to adapt to changing environments, display flexibility, and function in the face of uncertainties and ambiguities. Concern for others, interpersonal competence, and motivation are requisites for the program.