

*THE STUDENT HANDBOOK:*  
**Guidelines and Policies**  
  
**for**  
  
**Graduate Studies**  
  
**in**  
  
**Nutrition**  
  
**at**  
  
**Texas A&M University**

*Revised 2014*

<http://nfs.tamu.edu>

*Please submit any suggestions or corrections to*

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## INTRODUCTION

### *WELCOME TO THE DEPARTMENT OF NUTRITION AND FOOD SCIENCE*

Graduate degrees in Nutrition are offered through the Department of Nutrition and Food Science. The Department was established January 2005 upon a rich heritage of Aggie leadership in nutrition and food science. In creating the Department, the state of Texas and Texas A&M University recognized the importance of food choices in living a healthy life. The future health and well-being of the world is incumbent on the disciplines of nutrition and food science, and their role in maintaining health and preventing and treating diseases.

The Masters and Doctoral programs in Nutrition allow emphasis in the broad fields of basic and applied animal and human nutrition. Candidates may perform research in the areas of nutritional biochemistry and molecular biology, animal nutrition, and community or international nutrition. Studies in animal nutrition may be related to animal agriculture or may be fundamental in nature. Human or domestic animal nutrition specialization can be obtained in physiology, immunology, biochemistry, molecular and cell biology, and applied nutrition.

### *PROGRAM OF STUDY*

Over forty faculty members from the departments of Nutrition and Food Science, Animal Science, Poultry Science, Biochemistry and Biophysics, Health and Kinesiology, Medical Microbiology and Immunology, Human Anatomy & Medical Neurobiology, Social and Behavioral Health, Sociology, Statistics, Plant Physiology, Endocrinology, Small Animal Medicine and Surgery, Wildlife and Fisheries Sciences, and Anthropology in the Colleges of Agriculture and Life Sciences, Medicine, Science, Veterinary Medicine, and Liberal Arts participate in the interdepartmental graduate program. In addition, existing collaborative ties with the School of Rural Public Health, Texas A&M Health Sciences Center, Baylor College of Medicine, Central Texas Veterans Health Care System, Scott and White Memorial Hospital and Clinic, University of Texas Health Sciences Center at Dallas and interaction with the Institute of Biosciences and Technology in Houston serve to link both the clinical and basic science components of the Graduate Nutrition Program.

## DEGREES

### Doctoral Program

Students are required to complete the core curriculum in Nutrition which includes the following academic areas: Biochemistry, Statistics, Physiology, Nutrition and Seminar. At least 64 semester credit hours are required beyond the MS level or 96 semester credit hours beyond the B.S. level. **(Table 1)** Near or at the end of the didactic portion of the program, students take a preliminary exam intended to assess knowledge and competence in nutrition and related fields. Students passing the preliminary exam are admitted to candidacy for a Ph.D. degree.

### *TABLE 1 – CORE CURRICULUM REQUIREMENTS FOR THE DOCTORAL DEGREE IN NUTRITION*

Every doctoral student at Texas A&M University majoring in Nutrition must complete the following core curriculum during his or her postgraduate program. All students are expected to be active participants in the Intercollegiate Faculty of Nutrition seminar series each semester they are enrolled.

|                                      |   |
|--------------------------------------|---|
| Subject Requirements:<br>(with B.S.) | Nutrition – 12 Credits, 600 level<br>Biochemistry – 6 Credits, 600 level<br>Physiology – 6 Credits, 600 level<br>Statistics – 6 Credits, 600 level<br>Seminar** – 6 Credits, 600 level<br><b>Note:</b><br>**(4 hours of section 601, 1 hour of section 602 and 1 hour of section 602 in which student presents seminar on their research project at the Monday Intercollegiate Faculty of Nutrition seminar - given during the last semester here). |
|--------------------------------------|---|

|                                      |  |
|--------------------------------------|--|
| Subject Requirements:<br>(with M.S.) | Nutrition – 6 Credits, 600 level<br>Biochemistry – 3 Credits, 600 level<br>Physiology – 3 Credits, 600 level<br>Statistics – 3 Credits, 600 level<br>Seminar** – 3 Credits, 600 level<br><b>Note:</b><br>** (2 hours of section 601 and 1 hour of section 602 in which student presents seminar on their research project at the Monday Intercollegiate Faculty of Nutrition seminar given during the last semester here). |
|--------------------------------------|--|

Core requirements may not be met by 691 (research) or 685 (special problems) credits. A single course may not be used to meet more than one core subject requirement. For example, NUTR 642 (Nutritional Biochemistry) may not be used for both Biochemistry and Nutrition requirements on the same degree plan.

The degree plan of the Ph.D. student is the responsibility of the student and the student's graduate committee. The purpose of the core is only to provide a minimum number of courses in various disciplines to ensure that students receive a foundational education in Nutrition.

### **Master of Science Program**

Students are required to complete a minimum of 33 credit hours (**Table 2**) of graduate lecture, seminar, and research courses, and to complete and defend a thesis. The core lecture course are in Biochemistry, Physiology, and Statistics.

***TABLE 2 – CORE CURRICULUM REQUIREMENTS FOR THE MASTER’S DEGREE IN NUTRITION***

Subject Requirements:      Nutrition or course cross-listed with nutrition – 6 credits  
    Biochemistry\* – 3 credits  
    Physiology – 3 credits  
    Statistics – 3 credits  
    Nutrition Seminar\*\* – 3 credits

**Notes:**

\*Biochemistry 411 or equivalent may be used to meet the 3 credit Biochemistry requirement for the M.S. degree.

\*\* (2 hours of section 601 and 1 hour of section 602)

### **Combined Graduate Degree (M.S. or Ph.D.) - Dietetic Internship**

The combined Graduate Degree-Dietetic Internship is an accredited program of the Commission on Accreditation for Dietetics Education. Students complete the course requirements for graduate study in College Station and then a dietetic internship. The primary affiliations for the dietetic internship are the Central Texas Veterans Health Care System and Scott and White Memorial Hospital. Other affiliations include King’s Daughters Hospital, Bryan Independent School District, College Station Independent School District, Texas Cooperative Extension, Excellence in Health, Brazos County and Waco-McLennan County WIC, Gambro Health Care Inc., and Texas A&M Athletic Department. Examples of rotations to which interns are assigned include the clinical specialties of cardiology, pediatrics, surgery, nutrition support, gastroenterology, psychiatry, physical medicine and rehabilitation, renal dialysis, and general medicine. Community nutrition rotations include those with public health, wellness programs, eating disorders programs, and a food distributor while food service management may be done in either the hospital or school food service setting.

The interns who have completed the program have come from more than 50 universities and colleges and are employed in areas of clinical and community nutrition, food service management, and the food industry from coast to coast. Approximately 10% are pursuing doctoral degrees.

**Courses approved to meet the Core Curriculum Requirements include the following.**

NUTR 641 and NUTR 642 may be used for either the nutrition or the biochemistry requirement, but not for both.

**Nutrition**

- NUTR 601    **General Animal Nutrition (3-0) Credit 3** Comparative nutrition of animal species, contrasting digestive, metabolic, and physiological functions involved in processing and using nutrients. Prerequisite: ANSC 303, 318, or equivalent. Cross-listed with ANSC 601. Offered during the spring semester of odd-numbered years. Taught by Dr. Smith.
- NUTR 602    **Energetics of Metabolism and Growth (3-0) Credit 3** Current fundamental concepts in protein and energy metabolism relating to nutrients required for maintenance, growth, and development of animals. Prerequisite: BICH 410 or approval of instructor. Cross-listed with ANSC 602. Currently not offered.
- ANSC 604    **Ruminant Nutrition (3-0) Credit 3** Current concepts in anatomy, physiology of digestion, and metabolism in ruminant nutrition and their relationships to nutrition practice and research with emphasis on ruminants. Prerequisites: ANSC 601 or 602, or BICH 411 or 603 and approval of instructor.
- NUTR 610    **Nutritional Pharmacometrics of Food Compounds (3-0) Credit 3** Introduction into nutritional pharmacokinetics and pharmacodynamics of food compounds; specific examples of toxicological and pharmacological effects of food compounds. Prerequisite: NUTR 202 or 203 or FSTC 201 or CHEM 227 or CHEM 222 or instructor approval. Cross-listed with FSTC 610. Taught by Dr. Susanne Talcott.
- ANSC 611    **Equine Nutrition (3-0) Credit 3** Review and evaluation of current research in equine nutrition; principles of digestive physiology and nutrition unique to equine species; comparative digestion; integration of scientific principles into feeding management systems to enhance productivity, health, and longevity of the equine. Prerequisite: ANSC 601 or approval of instructor. Offered during fall semester of odd numbered years.
- NUTR 613    **Protein Metabolism (3-0) Credit 3** Basic concepts and recent advances in protein metabolism in animals with emphasis on physiological and nutritional significance; discussion of protein digestion; absorption of peptides; absorption, synthesis, and degradation of amino acids; hormonal and nutritional regulation of protein turnover; and determination of protein quality and requirements. Prerequisites: BICH 411 or 601 or equivalent or approval of instructor. Cross- listed with ANSC 613. Offered during spring semester of even-numbered years. Taught by Dr. Wu.

- NUTR 614 **Fermentation and Gastrointestinal Microbiology (3-0) Credit 3** Fermentation and gastrointestinal ecosystems in terms of microorganisms present, their activities and requirements and their interactions in a dynamic system. Prerequisite: Beginning microbiology and/or biochemistry or approval of instructor. Cross-listed with POSC 614. Offered during fall semester.
- POSC 615 **Avian Nutrition (3-0) Credit 3** Metabolism and nutritional requirements of domestic fowl including proteins, carbohydrates, fats, minerals, vitamins, and related feed additives. Prerequisites: CHEM 228 or 232; POSC 411; or approval of instructor. Offered spring semester of even numbered years.
- NUTR 617 **Experimental Techniques in Meat Science (1-6) Credit 3** Methods used in separation and identifying muscle proteins and fats; techniques for determining postmortem changes of muscle tissue as a result of antemortem treatments. Prerequisites: BICH 604 or 411; ANSC 607. Cross-listed with ANSC 617. Offered during fall semester. Taught by Dr. Smith.
- NUTR 618 **Lipids and Lipid Metabolism (3-0) Credit 3** Chemical nature of various classes of lipids and lipid-derived hormones, absorption and metabolism of fatty acids and lipids, regulation of lipid biosynthesis and obesity, relationship between lipid metabolism and cholesterol homeostasis, and lipids as hormones. Prerequisite: BICH 410 or approval of instructor. Cross-listed with ANSC 618. Offered during spring semester of odd numbered years.
- POSC 625 **Least-Cost Feed Formulation (2-2) Credit 3** Theoretical and applied principles associated with least-cost feed formulation, ingredient inventor, farm and feed mill management; computer optimization of resources for most efficient least-cost production with applications to all domestic farm animals; application of micro-computer technology. Prerequisite: POSC 411, ANSC 309. Offered during spring semester of even numbered years.
- NUTR 630 **Nutrition in Disease (3-0) Credit 3** Human nutritional requirements in health and disease, emphasizing effects of disease states on intake, digestion, absorption, metabolism, and excretion of nutrients. Prerequisite: NUTR 202; BICH 410 or equivalent. Offered during spring semester for dietetic interns only. Currently not offered.
- NUTR 640 **Therapeutic Microbiology I (3-0). Credit 3.** Alimentary (gastrointestinal) microbiology including: (i) the "normal" intestinal microbiota; (ii) probiotic and prebiotic nutritional supplements; (iii) recombinant pharmabiotics; (iv) gut-associated lymphoid tissue and mucosal immunity; (v) foodborne gastrointestinal pathogens; and (vi) fermented products as functional foods. Prerequisite: Undergraduate survey course in microbiology (or instructor's consent). Cross-listed with FSTC 640.

- NUTR 641 **Nutritional Biochemistry I (3-0) Credit 3** Mechanisms of nutrient digestion, absorption, transport assimilation, and utilization in the normal and diseased state. Prerequisite: BICH 411 or 604. Taught by Dr. Wu.
- NUTR 642 **Nutritional Biochemistry II (3-0) Credit 3** Mechanisms through which specific nutrients modulate intracellular signal transduction and gene expression; molecular mechanisms by which nutrition modulates disease states such as atherosclerosis, cancer, and arthritis. Prerequisites: BICH 411 or equivalent. BICH 431 or equivalent is recommended. Offered during spring semester of even numbered years.
- MANA 642 **Osteoporosis and Bone Biology (2-0) Credit 2** Introduction to the discipline of bone biology as it pertains to the development and pathophysiology of osteoporosis; will include peak bone mass, estrogen deficiency, epidemiology, nutrition, and prevention; discussion to included all aspects of bone biology. Prerequisites: Graduate classification in human anatomy and medical neurobiology or medical sciences or approval of instructor. Offered during spring semester of odd numbered years.
- NUTR 645 **Nutrition and Metabolism of Vitamins (3-0) Credit 3** Chemistry and metabolism of the fat soluble and water soluble vitamins and their roles in animals and nutrition, integration of cellular biochemistry, and metabolism of vitamins. Prerequisites: POSC 411 or ANSC 303; BICH 410 or 603. Cross-listed with POSC 645. Offered during fall semester of odd numbered years. Taught by Dr. Walzem.
- NUTR 646 **Fundamental Space Life Science (3-0) Credit 3** Integrates nutrition, physiology, and radiation biology to define major biological problems in long duration space flight; provide an overview of the problems of bone loss, muscle wasting, and radiation-enhanced carcinogenesis along with potential countermeasures; focus on nutritional interventions and exercise protocols. Cross-listed with NUEN 646 and KINE 646. Taught by Dr. Turner.
- NUTR 647 **Nutritional Biochemistry of Fishes (3-0) Credit 3** Principles of nutritional biochemistry including nutrient metabolism and biochemical energetics with special emphasis on finfish and shellfish. Prerequisite: BICH 410 or equivalent. Cross-listed with WFSC 647. Offered during fall semester of odd numbered years. Taught by Dr. Gatlin.
- NUTR 650 **Nutrition and Metabolism of Minerals (3-0) Credit 3** Nutritional significance of minerals in animal metabolism; chemical, biochemical and physiological role of minerals, and homeostatic control in animal metabolism. Prerequisites: POSC 411 or ANSC 318; BICH 410 or 603. Cross-listed with POSC 650. Offered during fall semester of even numbered years.

- NUTR 669 **Experimental Nutrition & Food Science Laboratory (1-6) Credit 4** Nutritional intervention into animal models of metabolic or emotional disorders; genetic modifications or pathogens in food products; analyses of gene expression and behavior. Prerequisite: BICH 432/GENE 432 recommended; graduate in nutrition or related major. Cross-listed with FSTC 669. Taught by Dr. Morgan.
- NUTR 681 **Seminar (1-0) Credit 1** Current developments in the field of nutrition; review of current and oral presentation of scientific papers on selected nutrition topics. Prerequisite: Graduate classification. Section 601 (attendance seminar) offered during fall and spring semester. Section 602 (delivery seminar) offered during fall and spring semester. Section 601 taught by Nutrition faculty. Section 602 taught by Dr. Turner during spring semester and taught by Dr. Harris during fall semester. Section 610 taught in Spring by Dr. Bloomfield.
- NUTR 689 **Special Topics.** Courses dealing with specialized topics in nutritional sciences are offered by individual faculty as interest and need arises. Recent offerings have included:
- **Progress in Nutrition in Health and Disease (1-0) Credit 1** Current developments in the field of nutrition; review of current and oral presentation of scientific papers on selected nutrition topics. Prerequisite: Graduate classification. Offered during first session of summer semester. Recommended for dietetic interns. Currently not offered.
  - **Molecular Nutrition (3-0) Credit 3** An overview of mechanisms regulating gene expression and the methods that are utilized to study the control of gene expression; a detailed exploration of the mechanisms through which macronutrients, vitamins, and minerals regulate gene expression; discuss the use of transgenic animal models to address specific questions with metabolic and nutritional relevance. Offered during fall semester. Currently not offered.
  - **Mineral and Vitamin Nutrition (3-0) Credit 3** Capstone course providing in-depth information covering integrative nutrition of animal species focusing on digestive, metabolic and physiological functions involved in processing, extraction and metabolizing minerals and vitamins. This course will focus on the nutritional significance of minerals and vitamins in animal metabolism and their chemical, biochemical and physiological role in the homeostatic control of metabolism. Prerequisite: Graduate classification. Offered during spring semester. Currently not offered.
  - **Lipoproteins in Health (3-0) Credit 3** Lipoprotein metabolism as it relates to the growth and development of birds and humans, as well as lipid and lipoprotein associated diseases such as atherosclerosis, fatty liver or NASH, and egg yolk peritonitis. This course introduces analytical and experimental/interpretive tools used to study lipoproteins and lipid biology. Cross-listed with POSC 689. Taught by Dr. Walzem.

- PHSB 689 **Special Topics:**  
**Public Health Perspective of Nutrition, Aging, and Function (3-0) Credit 3** This course explores the complex public health issues associated with the interrelationships of older age, nutritional health, chronic conditions, and independent functioning. Prerequisite: Introductory Nutrition (NUTR 203 or equivalent) and Physiology (VTPP 423, ZOOL 320, or equivalent); or permission of instructor. Offered during spring semester. Taught by Dr. Sharkey.

### **Biochemistry**

- BICH 601 **Fundamentals of Biochemistry I (3-0) Credit 3** Basic biochemical concepts pertaining to the structure of the major biomolecules (proteins, carbohydrates, lipids, and nucleic acids); the relationship of structure to function of these molecules; structure and action of enzymes; and principles of bioenergetics. Prerequisite: 1 year of organic chemistry. Offered during fall semester.
- BICH 602 **Fundamentals of Biochemistry II (3-0) Credit 3** Major metabolic pathways for carbohydrates, lipids, amino acids, protein, and nucleic acids, emphasizing oxidative processes and the biosynthesis of RNA, DNA, and protein; and regulation of cellular metabolism. Prerequisite: BICH 601. Offered during spring semester.
- BICH 603 **General Biochemistry I (3-0) Credit 3** The biochemical properties of macromolecules found in living matter; proteins, enzymes, and nucleic acids. Prerequisites: BICH 410 or 601, and CHEM 228 and 323. Offered during fall semester.
- GENE 626 **Gene Expression (0-3) Credit 1** The purpose of this course is to provide graduate students with experience in working with RNA and DNA and with the theories behind the use of molecular biology in research. Prerequisites: Radiation Safety training and BICH 412, 413, 414, 432, or approval of instructor. Offered during fall semester.
- NUTR 641 **Nutritional Biochemistry I (3-0) Credit 3** Mechanisms of nutrient digestion, absorption, transport assimilation, and utilization in the normal and diseased state. Prerequisite: BICH 411 or 604. Offered during fall semester.
- NUTR 642 **Nutritional Biochemistry II (3-0) Credit 3** Mechanisms through which specific nutrients modulate intracellular signal transduction and gene expression; molecular mechanisms by which nutrition modulates disease states such as atherosclerosis, cancer, and arthritis. Prerequisites: BICH 411 or equivalent. BICH 431 or equivalent is recommended. Offered during spring semester of even numbered years.

## Physiology

- ANSC 630 **Physiology of Reproduction I (4-0) Credit 4** Embryological, physiological, hormonal, cellular and molecular mechanisms involving the endocrine and reproductive systems of mammals; emphasis on domestic livestock, rodents and humans; current theories evaluated and discussed using information from recent scientific publications. Prerequisite: ANSC 433; BICH 411 or equivalent.
- ANSC 631 **Physiology of Reproduction I (4-0) Credit 4** Embryological, physiological, hormonal, cellular and molecular mechanisms involving the endocrine and reproductive systems of mammals; emphasis on domestic livestock, rodents and humans; current theories evaluated and discussed using information from recent scientific publications. Prerequisite: ANSC 630 or approval of instructor.
- KINE 637 **Exercise Physiology I (3-0) Credit 3** Functional changes brought about by acute and chronic exercise; topics include muscle structure/function, energy transduction, biochemistry of exercise, muscle mechanics, fatigue and adaptation. Prerequisite: KINE 433 or equivalent. Offered during the spring semester.
- KINE 638 **Exercise Physiology II (3-0) Credit 3** Functional changes brought about by acute and chronic exercise; topics include pulmonary and cardiovascular physiology, training and detraining, and special topics. Prerequisite: KINE 433 or equivalent. Offered during the fall semester.
- MPHY 604 **Advanced Cardiovascular Biology I (4-0) Credit 4** Biology of cardiogenesis, vasculogenesis and hematopoiesis; function of cardiac and vascular system with integrated molecular and cellular mechanisms that regulate cardiovascular network. Prerequisite: MPHY 901 or VTPP 910 and 912; MSCI 601 and 602 or approval of department head. Cross-listed with VTPP 655. Offered during fall semester.
- MPHY 606 **Advanced Cardiovascular Biology II (4-0) Credit 4** Interactions of the heart and vascular system including neural and humoral control systems; molecular genetics and pathophysiology of cardiovascular system during the development of diseases; gene therapy approaches in cardiovascular biology. Prerequisite: MPHY 604 or approval of department head. Cross-listed with VTPP 656. Offered during spring semester.
- MPHY 901 **Medical Physiology (8-0) Credit 8** Function and regulation of the systems of the human body with special emphasis on their relationships and feedback control mechanisms. Clinical correlation lectures in pathophysiology. Prerequisite: Admission to medical curriculum or approval of department head. Offered during spring semester.

- POSC 609 **Avian Physiology (3-3) Credit 4** Basic physiological principles pertaining specifically to avian species; cardiovascular, neural, respiratory, digestive, endocrine, and reproductive systems; physiological experiments using various avian species as laboratory animals. Prerequisite: Approval of instructor.
- VTPP 605 **Systemic Veterinary Physiology I (5-0) Credit 5** Aspects of cellular physiology, physiology of excitable membranes, physiology of body fluids, neurophysiology, and the physiology of smooth, cardiac and skeletal muscle; provides a basic understanding of mammalian physiology essential as a framework for advanced graduate studies. Prerequisite: Graduate classification. Offered during fall semester.
- VTPP 606 **Systemic Veterinary Physiology II (5-0) Credit 5** In-depth study covering cardiovascular, respiratory, renal physiology, gastrointestinal and endocrine physiology; provides a basic understanding of mammalian physiology essential as a framework for advanced graduate studies. Prerequisite: VTPP 605. Offered during spring semester.
- VTPP 653 **Endocrinology (3-3) Credit 4** Physiology, biochemistry, and pharmacology of the endocrines. Laboratory emphasizes a number of classical experiments with clinical application. Prerequisite: Approval of instructor. Offered during fall and spring semester.
- VTPP 655 **Vascular Physiology (4-0) Credit 4** Structure and function of blood vessels and vascular beds; molecular and cell biology of endothelium and vascular smooth muscle; microcirculation; capillary exchange; regulation of blood flow by local, neural and humoral signals. Prerequisite: MPHY 901 or approval of department head. Cross-listed with MPHY 604. Offered during fall semester.
- VTPP 656 **Physiology of the Heart (4-0) Credit 4** Structure and function of the heart; molecular and cell biology of cardiac myocytes; electrophysiology of myocardium, pacemaker cells and conduction tissue; cardiac mechanics; control of cardiac performance; coronary circulation. Prerequisite: MPHY 901 or MPHY 604 or approval of department head. Cross-listed with MPHY 606. Offered during spring semester.
- VTPP 657 **Cardiovascular Physiology (3-3) Credit 4** Physiological consideration of the circulatory system including general and integrative aspects of the heart and blood vessels. Prerequisite: Approval of instructor. Offered during fall and spring semester.
- WFSC 616 **Physiological Ecology of Vertebrates (3-4) Credit 4** Effects of temperature, oxygen and other environmental factors on the distribution and abundance of animals; comparative behavioral and physiological adjustments to environment as an evolutionary response; students will be expected to develop and execute a

research project in an appropriate subject area. Prerequisite: ZOOL 388 or WFSC 417 or approval of instructor.

- ZOOL 649 **Comparative Endocrinology (3-3) Credit 4** Function of endocrine glands and hormonal regulatory systems in different animal groups, vertebrates and invertebrates. Mechanisms of action of hormones at the cellular, subcellular, and molecular level. Recent experimental advances in endocrinological research, isolation, purification and assays of certain hormones. Prerequisite: Course in Physiology, BICH 410 or equivalent, or approval of instructor. Offered during spring semester of odd-numbered years.

### Statistics

- STAT 608 **Least Squares and Regression Analysis (3-0) Credit 3** Regression analysis, simple, multiple, and curvilinear; orthogonal polynomials; analysis of nonorthogonal and incomplete experiments by least squares methods, and computer methods for least squares problems. Prerequisite: STAT 601 or 652. Offered during fall and spring semesters.
- STAT 651 **Statistics in Research I (3-0) Credit 3** An application of the various disciplines in statistics to data analysis, introduction to statistical software, and demonstration of interplay between probability models and statistical inference. Prerequisite: MATH 222 or 304 or equivalent. Offered during fall, spring, and summer semesters.
- STAT 652 **Statistics in Research II (3-0) Credit 3** Continuation of STAT 651. Concepts of experimental design, individual treatment comparisons, randomized blocks and factorial experiments, multiple regression, chi-square tests, and a brief introduction to covariance, non-parametric methods, and sample surveys. Prerequisite: STAT 651. Offered during fall, spring, and summer semesters.
- STAT 653 **Statistics in Research III (3-0) Credit 3** Advanced topics in ANOVA; analysis of covariance; and regression analysis including analysis of messy data; non-linear regression; logistical and weighted regression; diagnostics and model building; emphasis on concepts; computing and interpretation. Prerequisite: STAT 652

## SECTION A - RESOURCES

### **Research Facilities**

The Department of Nutrition and Food Science contains extensive modern research facilities, which are generously equipped with a full range of instrumentation required for research in cellular, molecular, developmental, endocrine, and reproductive biology. Included are laboratories for recombinant DNA research, facilities for cell culture, electron microscopy, flow cytometry, histology, image analysis/cytogenetics, laboratory/transgenic animal research and containment, peptide sequencing, genomic/proteomic/metabolomics, processing pilot plant, veterinary medicine diagnostics, avian diagnostics, mass spectrometry, and horse, swine, avian, and aquaculture centers. There is also a new multi-million dollar Animal Nutrition and Physiology Lab available for research studies.

Research Symposium Competition. Selected students present their research results to a panel of judges to compete for monetary prizes.

Travel Grants. Students may be awarded up to \$500 to travel to scientific meetings where they are giving presentations. Students must acknowledge the Department of Nutrition and Food Science support in the abstract.

**TABLE 3 – MEMBERS AND THEIR RESEARCH INTERESTS**

**Clinton D. Allred**, Associate Professor and Associate Head, Nutrition and Food Science Department, MS 2253 (callred@tamu.edu), 979-845-0863

- Research Interests: *The ability of diet to influence development and progression of cancer with a focus on how dietary compounds interact with nuclear receptor signaling pathways.*

**Christine Z. Alvarado**, Associate Professor, Department of Poultry Science, MS 2472 (czalvarado@tamu.edu), 979-845-4818

- Research Interests: *poultry meat quality and safety, egg quality and safety, process efficiency and yield improvements for the poultry industry.*

**Jenna D. Anding\***, Associate Department Head for Extension, Associate Professor and Extension Specialist, MS 2253 (j-anding@tamu.edu), 979-847-9227

- Research Interests: *food insecurity and hunger, consumer food safety, evaluation of food and nutrition education programs*

**Christopher A. Bailey**, Professor, Department of Poultry Science, MS 2472 (chris.bailey@ag.tamu.edu), 979-845-7537

**Susan A. Bloomfield**, Professor of Health and Kinesiology, MS 1113 (sbloom@tamu.edu), 979-845-2871

- Research Interests: *Research focuses on the effects of exercise, disuse or spaceflight on bone biology and how those responses are altered by hormonal and nutritional factors.*

**Raymond J. Carroll**, Distinguished Professor of Statistics, MS 3143 (carroll@stat.tamu.edu), 979-845-3141

- Research Interests: *Biostatistics, bioinformatics, nutritional epidemiology, colon carcinogenesis.*

**Gordon E. Carstens**, Associate Professor of Animal Science and Nutrition, MS 2471 (g-carstens@tamu.edu), 979-845-5065

- Research Interests: *Research is aimed at understanding mechanisms that regulate energy expenditures in beef cattle to identify the metabolic basis for variation in efficiency of feed utilization.*

**Robert S. Chapkin**, Distinguished Professor of Nutritional Sciences, University Faculty Fellow, MS 2253 (r-chapkin@tamu.edu), 979-845-0419, 979-845-0448

- Research Interests: *The molecular mechanisms by which diet modulates signaling cascades and genomic responses in relation to colon cancer and chronic inflammation.*

**Josie A. Coverdale**, Associate Professor, Animal Science Department, MS 2471 (jcover@tamu.edu), 979-845-1562

- Research Interests: *Equine nutrition with an interest in forage utilization and hindgut fermentation.*

**Stephen F. Crouse**, Ph.D., FACSM, Professor, Health & Kinesiology Department & Joint Professor of Internal Medicine, Director of Applied Exercise Science Laboratory, MS 4253 (s-crouse@tamu.edu), 979-845-3997

- Research Interests: *The enhancement of human health, physical fitness, and quality of life through physical activity, including the effects of exercise and diet on blood lipid metabolism, on the cardiovascular system, and on other accepted atherosclerotic disease risk factors.*

**Nicolaas Deutz**, Professor, Health & Kinesiology Department, MS 4243 (nep.deutz@tamu.edu), 979-220-2910

- Research Interests: *Clinical nutrition, amino acid metabolism, in vivo protein synthesis and breakdown, Human Clinical Research Center, use of stable isotopes in clinical research.*

**Marielle P. Engelen**, Associate Professor, Health & Kinesiology Department, MS 4243 (mpkj.engelen@tamu.edu)

- Research Interests: *Translational research on alterations in protein and amino acid metabolism underlying muscle loss, and the acute and chronic effects of specific nutritional modulation and exercise on metabolism, body composition, functional capacity and outcome in the elderly and in chronic wasting diseases (ie cancer, chronic lung diseases (COPD, CF), chronic heart failure).*

**Delbert M. Gatlin III**, Professor and Associate Head for Research and Graduate Programs of Wildlife and Fisheries Sciences, MS 2258 (d-gatlin@tamu.edu), 979-847-9333

- Research Interests: *Studying nutrient requirements and metabolism of fish as well as evaluation of feedstuffs and diet formulations for application to aquaculture.*

**Yenory Hernandez-Garbanzo\***, Instructional Assistant Professor, Department of Nutrition and Food Science, MS 2253 (y-hernandez@tamu.edu), 979-458-4642

- Research Interests: *community-based nutrition education programs, program evaluation, survey development and training of nutrition undergraduates/extension educators, obesity prevention in children with a focus on the Hispanic community; capacity building approaches for promoting the use of locally grown available foods, and for preventing obesity and food insecurity, and the role of cultural and environmental factors on the food choices and nutritional outcomes of the Hispanic Community in the US and Latin-America.*

**Richard Kreider**, Professor and Head, Health & Kinesiology, MS 4243(rbkreider@tamu.edu), 979-845-3497

**Karen S. Kubena**, Professor of Nutrition & Food Science, MS 2253 (k-kubena@tamu.edu), 979-862-3164

- Research Interests: *Childhood obesity; diet patterns and food use related to risk factors for chronic disease.*

**John M. Lawler**, Professor of Health and Kinesiology, MS 4243 (jml2621@neo.tamu.edu), 979-862-2038

- Research Interests: *Oxidative stress, cell signaling, and skeletal muscle function and disease.*

**Joanne R. Lupton**, Distinguished Professor of Nutrition and William W. Allen Chair in Nutrition, University Faculty Fellow, MS 2253 (jlupton@tamu.edu), 979-845-0850

- Research Interests: *Effect of diet on colon physiology and colon cancer with a particular focus on dietary fiber and n-3 fatty acids.*

**W. Alex McIntosh**, Professor of Sociology, MS 4351 (w-mcintosh@tamu.edu), 979-862-7948

- Research Interests: *Investigation of social factors that affect food habits, dietary intake, and nutrition.*

**Rhonda K. Miller**, Professor of Animal Science and Food Science & Technology, MS 2471 (rmiller@tamu.edu), 979-845-3935

- Research Interests: *The effects of pre- and post-harvest factors that affect red meat palatability, composition and shelf life.*

**Caurnel Morgan**, Assistant Professor in Nutrition, Nutrition and Food Science Department, MS 2253 (camorgan@ag.tamu.edu), 979-458-1849

- Research Interests: *Dr. Morgan's research will focus on neural and endocrine signals that underlie disturbances in eating and emotional behavior. He will model these disturbances in the Syrian hamster and study stress resilience of escape, food-seeking, and feeding behaviors in melanocortin-5 receptor (MC5R) knockout mice.*

**Peter Murano**, Associate Professor, Nutrition and Food Science Department, MS 2472 (psmurano@tamu.edu), 979-458-0946

- Research Interests: *Examine effectiveness of policies targeting childhood obesity; develop/test anti-obesity food formulations.*

**Bhimu Patil**, Professor of Horticulture, MS 2133 (b-patil@tamu.edu), 979-458-8090

- Research Interests: *Isolation, purification and characterization of functional components and disease prevention; enhancing bioactive compounds through pre and postharvest practices.*

**Steven Riechman**, Associate Professor of Health and Kinesiology, Health and Kinesiology Department, MS 4243 (sriechman@hlkn.tamu.edu), 979-862-3213

- Research Interests: *Environmental and genetic factors associated with muscle loss with aging and responses to preventative interventions, specifically resistance training.*

**Sharon Robinson\***, Associate Professor and Extension Specialist, Texas A&M Agrlife Extension Service, MS 2253 (s-robinson@tamu.edu), 979-847-9227

- Research Interests: *Robinson's research interest involves the development and evaluation of nutrition programs which increase knowledge and improve lifestyle behaviors.*

**Jason Sawyer**, Associate Professor and Associate Department Head, Animal Science Department, MS 2471 (j-sawyer@tamu.edu), 979-845-1542

- Research Interests: *Dr. Sawyer's research focuses on the nutrition and production efficiency of growing beef cattle. Specific research interests include efficiency of forage utilization, nutrient partitioning and beef cattle production systems.*

**Friedhelm Schroeder**, Professor of Veterinary Physiology and Pharmacology, MS 4466 (fschroeder@cvm.tamu.edu), 979-862-1433

- Research Interests: *To determine the role of intracellular lipid binding proteins in fat uptake, oxidation, storage, and regulation of genes involved in lipid metabolism.*

**Joseph R. Sharkey**, Professor of Health Promotion and Community Health Sciences, School of Public Health, MS 1266 (jrsharkey@srph.tamhsc.edu), 979- 458-4268

- Research Interests: *University/community collaborative research that examines interrelationships among the food and activity environments, lifestyle behaviors, food insecurity, obesity, dietary intake, nutritional literacy, burden of chronic diseases, and physical performance in rural and Mexican-origin families and children.*

**Stephen B. Smith**, Regents Professor of Animal Science, MS 2471 (sbsmith@tamu.edu), 979-845-3936

- Research Interests: *Dietary and cellular factors determining the fatty acid composition of lipids in muscle and adipose tissue; cellular and genetic factors that regulate the growth rate of adipose tissue, especially in the marbling fat depot of beef cattle; cholesterol metabolism and measures of metabolic syndrome in human populations consuming naturally modified beef and pork products.*

**Susanne Talcott**, Assistant Professor, Department of Nutrition and Food Science, MS 2253 (smtalcott@tamu.edu), 979-458-1819

- Research Interests: *Efficacy, Safety and Dosing recommendations for secondary plant compounds with the long-term goal to define dosing recommendations for secondary plant compounds in the promotion of health and prevention of chronic diseases including cancer, cardiovascular disease, and diabetes.*

**Luis O. Tedeschi**, Associate Professor of Animal Science, Animal Science Department, MS 2471, (luis.tedeschi@tamu.edu), 979-845-5065

- Research Interests: *The development and evaluation of mathematical nutrition models, physicochemical characterization of feeds, and determination of energy and nutrients requirements for ruminant animals.*

**Nancy D. Turner**, Associate Professor of Nutrition & Food Science, MS 2253 (n-turner@tamu.edu), 979- 847-8714

- Research Interests: *To determine the impact of dietary factors, such as fiber, lipids, and phytochemicals, on colon carcinogenesis.*

**Rosemary L. Walzem**, Professor, Department of Poultry Science, MS 2472 (rwalzem@poultry.tamu.edu), 979-845-7537

- Research Interests: *Lipoprotein biology and functional foods.*

**Tryon A. Wickersham**, Associate Professor of Animal Science, MS 2471 (tryon@tamu.edu), 979-845-5065

- Research Interests: *Ruminant nitrogen, metabolism, and forage utilization*

**Lori E. Wright\***, Professor of Anthropology, MS 4352 (lwright@tamu.edu), 979-862-7665

- Research Interests: *Examination of social inequality in nutrition using stable isotopic paleodietary analysis and paleopathology of human skeletons at Tikal, Guatemala.*

**Chaodong Wu**, Associate Professor, Nutrition and Food Science Department, MS 2253 (cdwu@tamu.edu), 979-458-1521

- Research Interests: *Dr. Wu will study roles of the interactions between metabolism and inflammation in the pathogenesis of obesity and obesity-associated metabolic diseases such as insulin resistance, diabetes, fatty liver disease, and atherosclerosis.*

**Guoyao Wu**, Distinguished Professor of Animal Science, Texas A&M AgriLife Research Senior Faculty Fellow, and University Faculty Fellow, MS 2471 (g-wu@tamu.edu), Tel. 979-845-1817; Fax 979-845-6057

- Research Interests: *Biochemistry, nutrition and physiology of amino acids; Fetal nutrition and metabolism, cardiovascular physiology and disease; Diabetes; Intestinal Metabolism and development; Comparative Animal Nutrition.*

**Debra L. Zoran\***, Associate Professor of Veterinary Small Animal Medicine & Surgery, MS 4474 (dzoran@cvm.tamu.edu), 979-845-2351

- Research Interests: *Gastroenterology, small animal (especially feline) nutrition and nutritional management of inflammatory and allergic intestinal disease.*

\* Associate Members

## Research Symposium

|                         |  |
|-------------------------|--|
| What:                   | Department of Nutrition and Food Science RESEARCH SYMPOSIUM  |
| Who should participate? | <b>All Department of Nutrition and Food Science students and faculty</b> are strongly encouraged to participate! If a student cannot present a paper or prepare a poster, then please support your fellow classmates by attending. |
| When:                   | Spring Semester  |
| What's in it for me?    | <ol style="list-style-type: none"><li>1. The opportunity to get to know each other.</li><li>2. A chance to hone presentation skills.</li><li>3. A chance to win a monetary award for research.</li></ol>                           |
| What do I do?           | Submit an abstract related to your research efforts. Those abstracts not selected for oral presentation will be scheduled for poster presentation.   |
| Where do I send it?     | All abstracts must be electronically submitted to NSGA. A call for abstracts will be sent to the graduate student listserv in the spring semester.   |
| What can I win?         | Those graduate students whose abstracts are deemed most meritorious will receive competitive scholarships.   |
| Whom do I contact?      | Contact NSGA at <a href="mailto:TAMUNSGA@gmail.com">TAMUNSGA@gmail.com</a> or Kristin de Ruiter at <a href="mailto:kderuiter@tamu.edu">kderuiter@tamu.edu</a> .  |

## **UNIVERSITY RESOURCES**

### **Admissions**

Applications for admission to the Graduate Program may be obtained on-line at <http://admissions.tamu.edu>. Other application requirements are available at the Department of Nutrition and Food Science website at <http://nfs.tamu.edu/academics/graduate-programs/application-process>. Admission to Texas A&M University and any of its sponsored programs is open to qualified individuals regardless of race, color, religion, sex, age, national origin or educationally unrelated handicaps. Applicants are urged to return completed applications by December 1 in order to be considered for various scholarships and awards prior to enrollment for the Fall semester.

Acceptance criteria for the graduate programs in nutrition include a GRE score above 300 and a GPR above 3.0 in the last 60 hours of in class study. An applicant whose academic record is not satisfactory or who is changing fields of study may be required to take additional course work to acquire the background necessary to meet core course requirements. The core curriculum includes courses in nutrition, biochemistry, physiology, and statistics. Anyone not having the prerequisites for these courses can fulfill those requirements during the first year.

### **Office of Graduate and Professional Studies**

The Office of Graduate Studies and Professional Studies (OGAPS) is responsible for overseeing all graduate students at Texas A&M. Over the course of your graduate career, there are several steps where OGAPS approvals are needed: when you submit your degree plan, when you turn in your checklist and signature sheet for your preliminary exams (prelims), when you submit your proposal, when you schedule your final defense, and when you are getting ready to graduate. The relevant functions of the OGAPS are described in this handbook and in a Graduate Student Handbook, available on the OGAPS website at <http://ogs.tamu.edu/>. This website also has downloadable forms and relevant instructions required at various times during your graduate career.

### **International Student Services**

International Student Services office is located in Bizzell Hall East and offers assistance to international students. For further information, call 845-1824 or visit the website at <http://international.tamu.edu/iss>.

### **Student Loans/Financial Aid**

The Department of Student Financial Aid is located on the second floor of the Pavilion and offers both emergency loans for tuition and fees and short-term loans for expenses other than tuition and fees. Emergency loan applications must be completed online via a valid Texas A&M “neo” email account. For more information, call 845-3236 or 845-3987 or visit the website at <https://financialaid.tamu.edu/>.

Qualified full-time students may receive support in the form of graduate assistantships. In addition, the faculty may submit outstanding applications to various college and interdepartmental fellowship programs. These fellowships usually provide higher support levels and carry a partial or full exemption from tuition fees.

### **Student Health Insurance**

Teaching and research assistants are considered TAMU employees and receive medical insurance through TAMU. Several plans are available. Students sign up for coverage during orientation.

Students on fellowships and training grants are not considered TAMU employees and must purchase their own health insurance. Students with fellowships have the option to purchase health insurance and should contact their mentor to obtain information on health insurance and reimbursement.

International students require additional health insurance for evacuation and repatriation. Information about health insurance is available through the Benefits office within the Agriculture Program Human Resources office at 845-2423 on the 5th floor of the Wells Fargo Building on Briarcrest and Highway 6; information can be found at <http://aghr.tamu.edu/insurance.htm>

Also, for latest student health insurance information, please visit <http://shs.tamu.edu/insurance.htm>

### **Housing**

The University has a limited number of apartments for married students at reasonable rental rates. Applications for these apartments should be submitted online at this link: <https://reslife1.tamu.edu/UApt1/App/onlineapp.htm>. For any further information, please contact University Apartments Office, 1253 TAMU; College Station, TX 77843-1253. A wide variety of off-campus housing is available. Information on off-campus housing can be obtained from the **Adult & Graduate & Off-Campus Student Services**, Department of Student Life, Cain Hall, Room C114, College Station, TX 77843-1257; phone: (979) 845-1741; or <http://studentlife.tamu.edu/agoss/>

## SECTION B - THE DOCTORAL PROGRAM

### ***FIRST YEAR***

#### **Prerequisites**

Incoming students should have undergraduate training in nutritional sciences and/or any of the biological and life sciences. Specifically, most of our first-year students will have already had all of the following:

- A two-semester course in Biochemistry (equivalent to BICH 410/411 at TAMU)
- Two semesters of Organic Chemistry
- One semester of Calculus

This background is considered essential for students in the doctoral program. Students lacking any of these prerequisites will likely be required to enroll in the necessary course during the first year or during the summer prior to the first year and earn a grade of "B" or above.

#### **Library Orientation**

A library orientation for new/returning students is held on the second day of classes at 4 PM in 108 Bio/Bio where Ms. Nancy Duran, MS, MLS, MS, Agriculture Subject Specialist Librarian and Assistant Professor has provided information regarding a variety of things pertaining to the usage of library.

#### **Courses**

During orientations, each student will meet with their mentor to determine which courses they will take during the first year. You must register for at least 9 credit hours in both the fall and spring semesters and must maintain an average of 3.0 or better in the required core courses.

**Please refer to Core Curriculum Requirements (Table 1) for the Doctoral Degree in Nutrition and the Courses Approved to meet the Core Curriculum Requirements**

#### **Seminars (also applicable to MS candidates)**

All NUTR students are expected to attend the regular Nutrition seminars, which are held 11:30 AM each Monday during the fall and spring semesters. These seminars provide graduate students with an excellent opportunity to learn about research being done around the country.

**For the latest seminar schedule, visit <http://nfs.tamu.edu/academics/graduate-programs/events-seminars/>**

*Or contact the graduate program coordinator, 129 Cater-Mattil, 2253 TAMU College Station, TX 77843-2253, 979-845-2142, 979-862-6842 (fax), [kderuiter@tamu.edu](mailto:kderuiter@tamu.edu)*

**Scientific Meetings (also applicable to MS candidates)**

Attending scientific meetings is an integral part of being a professional scientist. Researchers learn about the latest results before they are published, exchange ideas, and make professional contacts

**Student Travel Rules (also applicable to MS candidates)**

For an Application for Student Research Travel Subsidy Form, visit the website's Current Student Resources page. <http://nfs.tamu.edu/students/>

**Advisory Committee**

Upon entering a laboratory, the student forms an advisory committee. A list of the proposed members of the advisory committee must be turned in to the Office of Graduate and Professional Studies before the end of the first academic year. The advisory committee must consist of four members of the graduate faculty representative of the student's field of study and research and include one member outside the student's department. The chair or co-chair must be from the Nutrition Faculty. The committee members should reflect a broad perspective. All advisory committees must be approved by the Office of Graduate and Professional Studies. Once formed, the advisory committee is encouraged to meet between September 1 and March 30 of each academic year.

All graduate students are required to meet with their committee at least once per year to discuss progress towards degree. An evaluation form must be completed and turned into the graduate program coordinator, Kristin de Ruiter, by March 30 of each year. If the form is not turned in a registration hold will be placed on the student's account.

***BEYOND THE FIRST YEAR*****Continuing Registration**

Students must enroll every semester for a total of 9 credit hours during fall and spring semester and 6 credit hours during the summer.

**Degree Plan**

The degree plan serves to establish the official advisory committee and states the coursework for the MS/doctoral degree. The College of Agriculture and Life Sciences requires the doctoral degree plan to be submitted to the Office of Graduate and Professional Studies (OGAPS) upon formation of the Advisory Committee and before the end of a doctoral student's 4<sup>th</sup> regular semester. To be eligible to schedule the dissertation defense, a student must have completed all formal coursework on his or her degree plan. This is not counting 691 coursework. This rule affects how you design your degree plan.

In order to allow time for approval of the degree plan, the Department of Nutrition and Food Science requires that the degree plan be turned in to the Graduate Programs Office by the end of the fall semester of the 2nd year. The degree plan should be formulated at the first meeting of the student's Advisory Committee, which should be scheduled before or during the first semester of the second year.

If the Advisory Committee later determines there is sufficient reason to alter the plan of coursework, changes to the degree plan can be made by petitioning the Office of Graduate Studies. Petitions to change your degree plan should be submitted to the OGAPS Document Processing Submission System <https://ogsdps.tamu.edu/default.aspx>.

### **99 Hour Cap**

The Department of Nutrition and Food Science has been granted a Programmatic Exemption increasing the Ph.D. Nutrition at TAMU to 130 doctoral G8 Semester Credit Hours (**SCH**). Once a student accumulates 130 or more hours, no exemptions are allowed, and he or she will not be qualified to pay in-state tuition.

### **Teaching**

Nutrition graduate students can apply for Department of Nutrition and Food Science Teaching Assistantships in either undergraduate lab or lecture courses. International students serving as TAs must have certifications in English proficiency. For information about the English language requirement, visit <http://iss.tamu.edu/>.

### **Candidacy**

A student must meet the following requirements to be admitted to Ph.D. candidacy.

- \*Has completed all but six credit hours of formal course work on the degree plan with the exception of any remaining NUTR 681, 690, and 691.

- \*Has a 3.0 graduate GPR and a degree plan GPR of at least 3.0 with no grade lower than a C in any course on the degree plan.

- \*Has passed the preliminary examination (written and oral portions).

- \*Has met the residence requirements.

### **Residence Requirements**

Students who enter the doctoral degree programs with baccalaureate degrees must spend two academic years in resident study. Students who hold master's degrees when they enter doctoral programs must spend one academic year in resident study. Having met these requirements, the student is admitted into candidacy for the Ph.D. degree at the beginning of the next academic semester. In the event that the student fails to pass either portion of the preliminary examinations, the advisory committee may elect to reschedule that portion of the preliminary examinations after at least three months of additional preparation. Alternatively, the student may be assigned to, or elect to change to, the Master of Science degree.

### **Dissertation Proposal and Preliminary Examinations**

All students must complete preliminary examinations and have an approved dissertation proposal as part of the Ph.D. requirements.

A student first schedules the times of the written and oral exams. The schedule must be finalized at least three weeks before the date of the first written examination. When scheduling preliminary examinations, keep in mind that getting all of the members of the advisory committee together at the same time and place requires planning well in advance. Once the schedule is set, the student **MUST** fill out the **Preliminary Examination Checklist (PEC)**. The student will then need to obtain the advisory committee chair's signature on the PEC. The

student will give the signed checklist to the graduate academic advisor to obtain the department head's signature.

The preliminary exams have two parts: written and oral. The written exams are usually scheduled for the week before the oral exam, with each member of the committee allotted one day. In any case, all written exams and the oral exam must be completed in a time period of no more than three weeks. Each member of the advisory committee gives the student a written examination. The student should discuss the format of each exam beforehand with the respective committee members. An individual member may choose to waive a written exam.

Upon successful completion of all written exams, the oral examination may be taken. The oral examination usually focuses on a defense of the dissertation proposal as well as general breadth of knowledge in the fields of Nutrition and Metabolic Physiology. The oral exam also gives committee members the opportunity to follow up on questions that arose in the written exams. Unanimous agreement of the committee that the performance was satisfactory is required for successful completion of the preliminary examination.

Upon completion of the oral exam, the committee chair (your research advisor) will submit the signed Report of the Preliminary Examination immediately to the Office of Graduate and Professional Studies. The Office of Graduate and Professional Studies will then do a post-review of the examination and the eligibility requirements.

A sample of the Preliminary Examination Checklist and the Report of the Preliminary Examination can be found in the Appendices on the Graduate Catalog. For the most recent information, visit <http://ogs.tamu.edu/incoming-students/student-forms-and-information/>.

### **PhD Proposal (also applicable to MS candidates)**

A dissertation proposal documenting the research project must be prepared and submitted to the advisory committee. The proposal defines the scientific problem you will study for your research. The proposal is a description of proposed research so that it can be prepared as soon as the overall research plan is developed. There is no requirement or even expectation that a proposal will contain significant preliminary data.

The proposal should explain the rationale or approach and the methodology you will use. A well-written proposal is organized according to NIH Grant Guidelines and should include four sections: 1) specific aims, 2) background and significance, 3) experimental design and methods, and 4) literature cited.

Further recommendations on how you should prepare the proposal are found at <http://ogs.tamu.edu/wp-content/uploads/2011/05/Proposal-Approval-Page.pdf>

### **Defense of the Dissertation (also applicable to MS candidates)**

The final step in obtaining a Ph.D. is defense of the dissertation. The student should discuss the status of the research with the advisory committee before beginning to write the dissertation.

When the student, advisor, and advisory committee agree on a time for submission and defense of the doctoral dissertation, the Office of Graduate Studies must approve the scheduling of the defense.

At the start of the semester, when you plan to defend your dissertation, you must apply to OGAPS for your graduate degree and pay a diploma fee. The OGAPS publishes a calendar for each academic term listing strict University deadlines for these events, which can be found at <http://ogs.tamu.edu/calendar>

The dissertation must be given to members of the advisory committee at least two weeks before the scheduled defense. A defense of a dissertation includes a public seminar. The student and research advisor must do the scheduling of the defense with this site requirement in mind. In addition, the Administrative Assistant must be notified of the date, time, place, and title at least two weeks beforehand to allow sufficient time to distribute and post notices of the defense. When the students have only their defense to complete and will not be on Texas A&M payroll the entire semester, they may register for one credit hour of NUTR 691 and be reclassified as a temporary research assistant.

For the most recent version of “Steps to Fulfill Doctoral Degree Requirements,” visit <http://ogs.tamu.edu/incoming-students/student-forms-and-information/getting-a-degree/doctoral-degree-requirements/>

For a Preliminary Examination Checklist and a Report of Preliminary Examination Checklist, visit <http://ogs.tamu.edu/incoming-students/student-forms-and-information/getting-a-degree/preliminary-exam-requirements/>

For the most recent version of “Steps to Fulfill Master’s Degree Requirements,” visit <http://ogs.tamu.edu/incoming-students/student-forms-and-information/getting-a-degree/masters-degree-requirements/>

Please contact the department’s Graduate Program Coordinator, Kristin de Ruiter, at 979-845-2142 or email her at [kderuiter@tamu.edu](mailto:kderuiter@tamu.edu) if you have any questions.

## SECTION C - MASTER OF SCIENCE DEGREE

**Please refer to Core Curriculum Requirements (Table 2) for the Master's Degree in Nutrition and Courses Approved to be Used in the Core Curriculum.**

Students in the Master of Science program are strongly advised to familiarize themselves with the University requirements for Master of Science degrees, which are extensive, and to consult with their advisors. A few guidelines in general for the Master's degree requirements are provided in the following sections.

### ***THESIS OPTION***

The Master of Science thesis option requires a minimum of 33-semester credit hours of approved courses, including all required core courses, and research hours;

A degree plan must be approved by a thesis advisory committee (Masters committees only require two faculty members [one of which must be outside of the department] in addition to the student's mentor), the Graduate Program Coordinator, the Associate Department Head, and the Office of Graduate and Professional Studies. The College of Agriculture and Life Sciences requires Master's degree students to submit their degree plan to the Office of Graduate and Professional Studies (OGAPS) before the end of the 2<sup>nd</sup> regular semester.

Students are also required to submit a thesis *proposal* approved by the advisory committee and the Department Head (this does not require a committee meeting, but a meeting may be useful to discuss the proposal).

The oral defense of a Master's thesis must be approved by the advisory committee and the head of the department.

Rules and procedures for submission of the completed thesis, with the appropriate approvals, can be found at <http://thesis.tamu.edu/>

### **Seminars, Scientific meetings and Student Travel Rules**

Please refer to the corresponding policies in Section B above.

### **MS Thesis Proposal and Defense of the Thesis**

To be eligible to request and announce the final exam Master's students must have completed all coursework, or be enrolled in the final courses, on the degree plan. Master's students may have incomplete grades on the degree plan but no grades of D or F on the degree plan are allowed.

Please refer to PhD proposal and Defense in Section B above. **The student submits a research / thesis proposal in place of a dissertation.**

### ***NON-THESIS OPTION***

Please consult with the Graduate Advisor for details.

Please contact the Graduate Program Coordinator at 979-845-2142 or email her at [kderuiter@tamu.edu](mailto:kderuiter@tamu.edu) if you have any questions.

## **SECTION D - UNIVERSITY AND FACULTY POLICIES**

The Texas A&M University System and the Intercollegiate Faculty of Nutrition have a strong commitment to equal employment opportunity, without regard to race, color, sex, religion, or age.

### **Petitions**

In the course of your graduate career, you may find it necessary to request changes in the approved degree plan on file in the OGS. A petition can be used to change a committee member or change coursework on the approved degree plan. A downloadable petition form and filing instructions are available on the OGS website. Petitions must be signed by all members of your official advisory committee and by the Faculty Chair before you submit it to the OGS.

### **Academic Status**

The University mandates that all full-time graduate students supported by an assistantship or fellowship must register for 9 credit hours each fall and spring semester, plus 6 credit hours in summer, and maintain a grade point average of 3.0 or above.

If you fail to register for the required minimum number of credit hours, or if for any reason your credit hours fall below the minimum during the semester, your graduate assistantship position may be terminated. If you are out of compliance with the continuous registration requirements, your registration will be blocked. To have the block lifted, you must get both 1) a favorable recommendation your advisor (major professor), and 2) approval from the Office of Graduate Studies.

International students may have additional requirements depending on their visa status. To obtain current information on visa requirements, international students should consult an international student advisor, Office of International Student Services, at 979-845-1824, Bizzell Hall East Building. In most cases, the only form required is a waiver for full-time hours, which can be obtained from the International Student Services Immigration Office, Bizzell Hall East, Room 104.

### **Tuition**

For details concerning payment of tuition and fees, refer to the current Schedule of Classes or visit the academic calendar at <http://admissions.tamu.edu/Registrar/General/Calendar.aspx>

Teaching assistants, research assistants, and non-teaching graduate assistants who are employed at least one-half time at a Texas institution of higher education, and whose job duties are related to teaching or research in an academic program associated with their field of study, are entitled to resident tuition and fees for themselves, their spouse, and their children. Graduate students in nutrition are limited to 130 credit hours of resident tuition at the doctoral level.

## Stipends

Stipend checks are paid for the preceding month on the first weekday of the subsequent month. Consequently, you will not receive your first paycheck until OCTOBER 1.

## English Language Requirement for International Students

The English proficiency of students whose primary language is not English must be certified before they are eligible to serve as TAs. Certification can be obtained in any of four ways:

- \*Scoring at least 80 on each of the six sections of the English Language Proficiency Examination (ELPE), or
- \*Obtaining grades of A or B in English Language Institute (ELI) courses at the 300 level or higher, or
- \*Being certified through the TAMU Office of Graduate Studies, or
- \*Receiving a bachelor's degree after four years of study at an accredited U.S. institution.

Graduate students must begin to take ELI courses (in at least one of the areas not yet passed) no later than their second semester enrolled at Texas A&M. Graduate students will be allowed to take a combination of Texas A&M and ELI courses up to a total of 15 hours in the fall and spring semesters and up to a total of 12 hours for a 10-week summer semester.

Visit [http://international.tamu.edu/iss/people/newstudents\\_elpe.asp](http://international.tamu.edu/iss/people/newstudents_elpe.asp) for more information on these requirements.

## Right to Review Records

Students, once enrolled, have the right to review their educational records, except for those excluded by law, such as parents' financial statement or records maintained by a physician or psychiatrist. Educational records are maintained in departmental offices, the office of Student Records and of Student Financial Aid, the offices of various College Deans, the office of Career Development and Placement, and in the office of Educational Advising.

## Academic Dishonesty

**Academic dishonesty in any form is a serious offense and cannot be tolerated in an academic community. Dishonesty in any form, including cheating, plagiarism, deception of effort, or unauthorized assistance, may result in a failing grade in a course and/or dismissal from the Graduate Program. Falsification of data can be grounds for immediate dismissal.** Visit <http://student-rules.tamu.edu/aggiecode.htm> for details on the Office of the Aggie Honor System.

## Ownership of Data

When a student enters a laboratory to work on a project, it is understood that any data produced remains the property of the University through the individual faculty member. NIH guidelines require that data and notebooks remain with the Principal Investigator and with the University. Final decisions on publication and on co-authorship of papers rest with the Principal Investigator (faculty advisor).