INTRODUCTION

WELCOME TO THE DEPARTMENT OF NUTRITION

The graduate program in Nutrition is administered by the Department of Nutrition, and its membership includes faculty from Nutrition, Animal Science, Biochemistry and Biophysics, Health and Kinesiology, Horticultural Sciences, Poultry Science, Sociology, Wildlife and Fisheries Sciences, the School of Public Health, and Veterinary Integrative Biosciences. Courses of study lead to the Master of Clinical Nutrition, the Master of Science, and the Doctor of Philosophy degrees. Courses for the degree program are selected from the various departments to serve the needs of the graduate student.

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

PROGRAM OF STUDY

Over thirty faculty members from the departments of Nutrition, Food Science and Technology 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, and Wildlife and Fisheries Sciences 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 Public Health, Texas A&M Health Sciences Center, Baylor College of Medicine, Baylor University Medical Center, 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

Doctoral students 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 enrolled participants in the Nutrition Seminar Series each semester they are enrolled.

Subject Requirements:

Nutrition Modules – 6 Credits
NUTR 642: Human Nutritional Biochemistry – 3 Credits
or
NUTR 671: Evidence-Based Practice - 3 Credits
NUTR 681: Seminar** – 4 Credits
Statistics or Biostatistics – 3 Credits, 600 level
Responsible Conduct of Research – 1 Credit, 600 level
Research Rotations in Nutrition - 1 Credit
Teaching in Nutrition - 2 Credits
Nutrition electives - 6 Credits, 600 level
Research (NUTR 691) – credits vary
Directed Studies (NUTR 685) – credits vary
Total: 96 credits for students with B.S.
64 credits for students with M.S.

***Seminar is required every regular semester. Students must register for either 0 or 1 credit.*

Core requirements may not be met by 691 (Research) or 685 (Directed Studies) 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 32 credits for the thesis option and 36 credits for the non-thesis option **(Table 2)** of graduate lecture, seminar, and research courses, and to complete and defend a thesis. The core lecture courses 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 NUTR Seminar** – 1 credits

Notes:

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

**Seminar is required every regular semester. Students must register for either 0 or 1 credit.

Master of Clinical Nutrition Program

The Master of Clinical Nutrition (MCN) degree is designed to provide a high-quality education and a variety of supervised practice experiences to prepare students in either the Texas A&M Dietetic Internship Program or Baylor University Medical Center's dietetic internship program to be effective registered dietitian nutritionists. The program integrates knowledge gained in coursework with intensive training in professional settings to help grow the student into a competent professional. The MCN Program meets the accreditation standards of the Accreditation Council for Education in Nutrition and Dietetics (ACEND) for dietetic internship programs. Qualified candidates must have completed an ACEND-accredited dietetics curriculum that provides foundation knowledge in dietetics. Students are required to complete the core curriculum in nutrition which includes the courses in nutrition, biochemistry, physiology, and statistics at the College Station campus. Additionally, students are required to complete supervised practice and research activities that address ACEND competencies for dietetic internship programs. Supervised practice activities may be completed in the following cities in Texas: Dallas (Baylor DI) or College Station, Temple, Houston, and San Antonio (Texas A&M DI). Upon successful completion of the MCN Program, students are eligible to take the credentialing exam for a registered dietitian nutritionist.

Students are required to complete a minimum of 36 credit hours **(Table 3)** of graduate lecture, seminar, directed studies, and clinical internship.

TABLE 3 – CORE CURRICULUM REQUIREMENTS FOR THE

MASTER OF CLINICAL NUTRITION

Subject Requirements:

NUTR 642 – 3 credits
NUTR 632 – 3 credits
GENE 603– 3 credits
STAT 651 – 3 credits
KINE 637 or KINE 638 – 3 credits
NUTR 684 Internship – 4 credits
NUTR 685 Directed Studies – 5 credits
Approved Electives – 10 credits
NUTR 681 Seminar** – 2 credit
Total: 36 credits

Notes:
**Seminar is required every regular semester. Students must register for either 0 or 1 credit.

A professional paper, which is a scholarly report of a problem-solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam.

Dual Masters (MS/MS) in Kinesiology and Nutrition

The Dual Masters program in Kinesiology and Nutrition is to provide integrative training for students who intend to become licensed practitioners in Sport or Clinical settings. Pursuing these two degrees simultaneously will provide better integration of material across the two disciplines (Exercise Physiology and Human Nutrition) leading to superior training for future professionals working in sport or clinical settings.

This non-thesis program requires a total of 72 credit hours [36 credits for each non-thesis MS].

TABLE 4 – CORE CURRICULUM REQUIREMENTS FOR THE NON-THESIS MASTER'S DEGREE IN NUTRITION

Nutrition Subject Requirements:	Nutrition or course cross-listed with nutrition – 6 credits Biochemistry* – 3 credits Physiology – 3 credits Statistics – 3 credits Directed Studies (NUTR 685) – credits vary Approved Elective Coursework: 10-20 credits NUTR Seminar** – 1 credit **Notes:** *Biochemistry 411 or equivalent may be used to meet the 3 credit Biochemistry requirement for the M.S. degree. **Seminar is required every regular semester. Students must register for either 0 or 1 credit. Total: 36 credit hours
Kinesiology Subject Requirements:	See the Department of Kinesiology for KINE MS requirements. Total: 36 credit hours

TABLE 5 - MINIMUM COURSE REQUIREMENTS FOR NUTRITION PHD AND MS

Course Requirement	96 hour PhD	64 hour PhD	MS with thesis	Non-thesis MS
Nutrition	12	6	6	6
Biochemistry	6	3	3	3
Physiology	6	3	3	3
Statistics	6	3	3	3
Seminar	3	2	1	1
Research (NUTR 691)	credits vary	credits vary	0-8*	No 691 credits allowed
Directed Studies (NUTR 685)	credits vary	credits vary	0-8*	0-8**

Supporting Electives	credits vary	credits vary	3	10
Total Credits	96	64	32	36

** Not more than **12 hours** may be used in any combination of the following categories:1. Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) 2. Not more than 8 hours of 685 (Directed Studies) may be used.*

*** No more than **25 percent (9 hours)** of the total degree plan hours may be used in any combination of the following categories: a. Not more than 4 hrs of 684 (Professional Internship) may be used. b. Not more than 8 hrs of 685 (Directed Studies) may be used.*

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

The 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 Baylor Scott and White Memorial Hospital. Other affiliations include Bryan Independent School District, College Station Independent School District, Texas Cooperative Extension, Excellence in Health, Brazos County WIC, and Memorial Hermann Hospital-Texas Medical Center. 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.

Graduates of the dietetic internship have successfully passed the registration exam to become registered dietitians as evidenced by a pass rate of over 80%. The interns who have completed the program have come from Texas A&M and other universities and colleges and are employed in areas of clinical and community nutrition, food service management, and the food industry from coast to coast.

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

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

Nutrition

NFSC 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.

NFSC 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.

NFSC 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: NFSC 202 or 203 or NFSC 201 or CHEM 227 or CHEM 222 or instructor approval..

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.

NFSC 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.

NFSC 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.

NFSC 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.

NFSC 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 **Precision Diet Formula (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.

NFSC 632 **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: NFSC 202; BICH 410 or equivalent.

NFSC 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).

NFSC 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.

NFSC 642 **Nutritional Biochemistry II (3-0) Credit 3** Integration of nutrition, biochemistry, and other life sciences focusing on 1) nutrients and their needs in healthy and unhealthy individuals; 2) macronutrients and their metabolism and the pertinent regulation; 3) nutrient sensing and signaling pathways; 4) nutritional and hormonal regulation of gene expression; and 5) commonly used nutritional and biochemical assays.
Prerequisites: NFSC 475; BICH 410 or equivalent

NFSC 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.

NFSC 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.

NFSC 651 **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.

NFSC 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.

NFSC 655 **Nutrition and Healthy Aging (3-0) Credit 3** Fusion of biology of aging and geriatric nutrition; different aging theories, pathophysiology of aging and age-related diseases, nutritional needs of older adults, nutritional impacts on lifespan and healthspan and nutritional interventions for healthy aging.

NFSC 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.

NFSC 679 **Lipoproteins in Health and Disease (3-0) Credit 3** Understanding of lipoprotein biology as it relates to nutrient delivery and disease development; emphasis on understanding how structure influences the function of different lipoprotein particles in human and avian systems; opportunity to study individual lipoprotein profiles or those of animals by modern imaging techniques; background in basic lipid biochemistry helpful. Cross-listed with POSC 679.

NFSC 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.

NFSC 689 **Special Topics.** Courses dealing with specialized topics in nutritional sciences are offered by individual faculty as interest and need arises.

KINE 628 **Nutrition in Sport and Exercise (3-0) Credit 3** Interaction between nutrition, exercise, and athletic performance; including: biochemical and physiological aspects of nutrition and exercise; nutrition for training and competition; exercise and oxidant stress; nutritional supplements and ergogenic acids; and nutritional aspects of body composition and weight control.

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 **Analyses of Gene Expression (0-3) Credit 2** 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.

NFSC 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.

NFSC 642 **Nutritional Biochemistry II (3-0) Credit 3** Integration of nutrition, biochemistry, and other life sciences focusing on 1) nutrients and their needs in healthy and unhealthy individuals; 2) macronutrients and their metabolism and the pertinent regulation; 3) nutrient sensing and signaling pathways; 4) nutritional and hormonal regulation of gene expression; and 5) commonly used nutritional and biochemical assays. Prerequisites: NFSC 475; BICH 410 or equivalent

Physiology

ANSC 630 **Reproductive Biology 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 **Reproductive Biology II (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 613 **Medical Physiology Credit 1-5** This course is a comprehensive survey of the functions of the human body: transport processes, feedback control systems and homeostasis; general structure and function of the central nervous system, electrophysiology, autonomic nervous system; musculoskeletal system; and cardiovascular system. Format includes lectures, labs, field trips, and student projects/presentations. The overall goal is for students to understand, integrate, and appreciate the numerous and complex interactions between the components of the intact system. Prerequisite: MSCI 601 or equivalent. 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 623 **Biomedical Physiology I (3-2) Credit 4** Human physiological principles, review of cellular physiology, and development of an understanding of the nervous system and muscle, cardiovascular, and renal physiology; clinical applications related to organ systems. Prerequisite: Graduate classification; BICH 410 and VIBS 305 recommended.

VTPP 652 **Fetal and Embryo Physiology (3-0) Credit 3** Introduction to the physiologic processes driving embryonic development and pregnancy; focus on embryo implantation, establishment of the placenta, development of the fetal circulatory systems and the molecular processes governing embryo differentiation and development; special emphasis on the major organ systems affected by pediatric disease and on the actions of teratogens. Prerequisites: Graduate classification.

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 flew by local, neural and humoral signals. Prerequisite: MPHY 901 or approval of department head.

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.

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

If you have a question about degree plan credit for a course not listed, send the course number and syllabus to the graduate advisor for consideration in consultation with the graduate curriculum committee.

SECTION A - RESOURCES

Research Facilities

The Department of Nutrition 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 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 support in the abstract.

NUTRITION GRADUATE FACULTY MEMBERS

Hubert Amrein, Professor, Molecular and Cellular Medicine, MS 1114 (amrein@tamu.edu), 979-436-0799

- Research Interests: *Taste sensory coding; Taste receptor specificity; Nutrient sensing by the brain and the gut.*

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*

Robert S. Chapkin, Distinguished Professor of Nutritional Sciences, Regents Professor, University Faculty Fellow and Allen Endowed Chair in Integrative Nutrition & Complex Diseases, MS 2253 (r-chapkin@tamu.edu), 979-845-0419, 979-845-0448
- Research Interests: *Molecular mechanisms by which diet modulates host-microbiome interaction, e.g., aryl hydrocarbon signaling cascades and genomic responses in relation to stem cell biology; noninvasive biomarkers using host exfoliomics and gut microbial metagenomics; membrane therapy and proteolipid nanoclustering; dietary interactions, colon cancer and chronic inflammation.*

Mahua Choudhury, Associate Professor of Pharmaceutical Sciences, Texas A&M Health Science Center (mchoudhury@pharmacy.tamhsc.edu), 979-436-0286
- Research Interests: *prediction of disease risk, genes and the environment, pathology, diabetes, obesity, pregnancy complications, epigenetics*

Roderick Dashwood, John S Dunn Chair, Professor, and Director, Center for Epigenetics & Disease Prevention, Institute of Biosciences and Technology, MS 1201 (rdashwood@tamu.edu), 713-677-7806
- Research Interests: *Genetic/epigenetic mechanisms in cancer prevention and treatment.*

Shaodong Guo, Associate Professor, Department of Nutrition, MS 2253 (Shaodong.guo@tamu.edu), 979-845-0850
- Research Interests: *Mechanisms of insulin resistance, diabetes mellitus, and associated cardiac disorders, aiming at nutritional and therapeutic intervention.*

Jun-Yuan Ji, Associate Professor, Molecular and Cellular Medicine, Texas A&M Health Science Center, MS 1114 (junyuan@tamu.edu), 979-845-6389
- Research Interests: *Cell cycle and transcriptional regulation during development and tumorigenesis*

Bradley Johnston, Associate Professor, Department of Nutrition, MS 2253 (Bradley.johnston@tamu.edu)
Research Interests: *Methodology and reporting standards of randomized trials, systematic reviews, meta-analysis, and dietary practice guidelines. Dietary patterns and the management of obesity, diabetes and cardiovascular disease.*

Richard Kreider, Professor, Health & Kinesiology, MS 4243 (rbkreider@tamu.edu), 979-458-1498
- Research Interests: *Exercise and Sport Nutrition*

John M. Lawler, Professor of Health and Kinesiology, MS 4243 (jml2621@tamu.edu), 979-862-2038
- Research Interests: *Redox regulation of mechanotransduction and remodeling in skeletal muscle and heart. Antioxidant and nutraceutical therapeutic development against pathology with spaceflight, aging, metabolic disease, and Duchenne muscular dystrophy.*

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.*

Bhimu Patil, Interim Head, Department of Food Science and Technology, University Professor, Director, Vegetable and Fruit Improvement Center, Director, USDA National Center of Excellence, 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.*

Rebecca Seguin-Fowler, Associate Professor, Associate Director of AgriLife Research, Texas A&M AgriLife Research (r.seguin-fowler@ag.tamu.edu)

- Research Interests: *Development and implementation of community-based randomized intervention trials and dissemination research for at-risk populations (e.g., low income families) and settings (e.g., rural communities) focused on obesity and chronic disease prevention; health equity; food insecurity; and policy, system, and environmental change.*

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.*

Yuxiang Sun, Associate Professor, Department of Nutrition, MS 2253 (yuxiangs@tamu.edu), 979-862-9143

Research Interests: *Nutritional regulation and metabolic programming of obesity, diabetes, aging and Alzheimer's disease using cutting-edge tools and methodologies. Current focuses are the roles of nutrient-sensing hormone ghrelin in immunometabolism and inflamm-aging, that are the newly emerged interdisciplinary mechanisms central to many diseases.*

Susanne Talcott, Associate Professor, Department of Food Science and Technology, 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, Professor of Animal Science, Texas A&M AgriLife Research Fellow, 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.*

David Threadgill, Department Head, Department of Nutrition, Distinguished Professor of Molecular and Cellular Medicine and Biochemistry & Biophysics and Director of the Texas A&M Institute of Genome Sciences and Society, MS 4467 (dwthreadgill@tamu.edu), 979-436-0850

- Research Interests: *The role of genetics in mediating how individuals respond to diet to alter health and disease.*

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

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

Chaodong Wu, Professor, Faculty Fellow of Texas A&M AgriLife Research, Department of Nutrition, MS 2253 (cdwu@tamu.edu), 979-458-1521

- Research Interests: *Roles for nutrient-gene interactions and inflammation in the pathogenesis of obesity and nutrition stress-associated metabolic diseases such as insulin resistance, diabetes, and fatty liver disease.*

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.*

Linglin Xie, Associate Professor, Department of Nutrition, MS 2253 (Linglin.xie@tamu.edu), 979-862-9141

- Research Interests: *Understanding the impact and molecular mechanisms of maternal diet intervention on offspring obesity and related metabolic complications. 2. Understanding the molecular and genetic mechanisms of heart development and the ontogeny of congenital heart defects, with special focus on how maternal obesity and diabetes affect the heart development in next generation.*

Kurt Zhang, Associate Professor, Center of Epigenetics & Disease Prevention, Institute of Biosciences and Technology, Texas A&M Health Science Center, MS 1201 (kzhang@tamu.edu), 979-847-8714

- Research Interests: *The transgenerational epigenetic inheritance and regulation for metabolic diseases; 2. Integrate advanced genomics research to understand the gene-gene and gene-environmental interactions during heart development.*

Annual Nutrition Research Symposium

What:	Departments of Nutrition RESEARCH SYMPOSIUM
Who should participate?	Participation in the annual Graduate Research Symposium is required for all graduate students beyond their first year of graduate study. All students must present either a poster or oral presentation. If you are unable to participate due to an academic conflict then you must notify the graduate advisor in order to make alternative presentation plans.
When:	TBD
What's in it for me?	1. The opportunity to get to know each other. 2. A chance to hone presentation skills. 3. A chance to win a monetary award for research.
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 fall semester.

What can I win?	Those graduate students whose abstracts are deemed most meritorious will receive competitive awards.

UNIVERSITY RESOURCES

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://ogaps.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 110 Pavilion and offers assistance to international students. For further information, call 845-1824 or visit the website at http://iss.tamu.edu/.

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 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 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 International Student & Scholar Services. For latest student health insurance information, please visit Student Health Services.

Housing
The University has a limited number of apartments for students at reasonable rental rates. Applications for these apartments should be submitted online at the Department of Residence Life. 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, College Station, TX 77843-1257; phone: (979) 845-1741.

SECTION B - THE DOCTORAL PROGRAM

FIRST YEAR

Courses
Students will take the courses below during their first year in the doctoral program. 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.

First Semester	**Second Semester**
NUTR Modules - 3 Credits	NUTR Modules - 3 Credits
NUTR 642 or NUTR 671 - 3 Credits	NUTR 681 - 1 Credit
NUTR 681 - 1 Credit	NUTR 691 - 1 Credit
Rotations - 1 Credit, (NUTR 685)	NUTR elective - 3 Credits
RCR - 1 Credit, (MSCI 609)	or Statistics - 3 Credits

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 nutrition students are expected to attend the department's Distinguished Lecture Series every semester. These seminars provide graduate students with an excellent opportunity to learn about research being done by other students and faculty in the department.

The Nutrition Seminar (NFSC 681) is a variable credit (0-1 credit) course. All nutrition graduate students are required to register for a NFSC seminar every semester. 0 credit seminar cannot be used on degree plans, and it does not count for continuous registration requirements. Students who need the course credit for their degree plan should register for 1 credit. All students who are not registering for course credit must register for 0 credit.

For questions contact the graduate program coordinator, 129 Cater-Mattil, 2253 TAMU College Station, TX 77843-2253, 979-845-1735, 979-458-3129 (fax), 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 Graduate Student Resources page. http://nfs.tamu.edu/academics/graduate-programs/forms-and-documents/ Student travel related to internships, student teaching, research, or conferences should be registered with Texas A&M Student Activities.
https://stuactonline.tamu.edu/app/form_travel

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 when a graduate student submits their degree plan. 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 Graduate Faculty. The committee members should reflect a broad prospective. 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, 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
A student in a graduate degree program requiring a thesis, dissertation, internship or record of study, who has completed all coursework on his/her degree plans other than 691 (Research), 684 (Internship) or 692 (Professional Study) is required to be in continuous registration until all requirements for the degree have been completed. If a student is registered only for zero credit 681, 684 or 685 course, this registration does not satisfy the continuous registration requirement for students in graduate degree program requiring thesis, dissertation, internship or record of study. Other courses, including 691 research hours, are not eligible for zero credit.

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 4th 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 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.

99 Hour Cap
The Department of Nutrition 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.

Time Limit
All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after

the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Teaching

Nutrition graduate students can apply for Department of Nutrition 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.

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.

Residence Requirements

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan.

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.

The written portion of the exam will be standardized and will be an NIH F31/R21 style proposal on their planned dissertation research. This will follow NIH guidelines and include an abstract (Project Summary), Specifics Aims page, and 6-page research project (with NIH text and spacing rules). While the proposal should be relevant to the research advisor's lab and the likely dissertation project of the student, the writing of the proposal for the purpose of the candidacy exam will be completed independent of the student's advisor, although they can have other students provide feedback. The proposal must be provided to the dissertation committee at least two weeks prior to the date scheduled for the oral portion of the exam. The PhD candidate's advisor in consultation with the dissertation committee will inform the student if the written portion is acceptable to progress to the oral exam at least 7 days before the oral exam. If the student is not made aware that the written proposal needs remediation, the assumption is that the student will have passed the written portion of the exam. Revisions to the written proposal, minor or major, may still be suggested by members of the dissertation committee after the oral exam including the student's advisor.

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. 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 OGAPS 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 general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website http://rcb.tamu.edu.

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.

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://ogaps.tamu.edu/Buttons/Calendars.

Students are required to submit their dissertation in final form to their committee at least two weeks before the scheduled defense. Final form indicates that the dissertation meets all Graduate and Professional School requirements for submission. 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, department staff must be notified of the date, time, place, and title at least 6 weeks beforehand to allow sufficient time to distribute and post notices of the defense.

For the most recent version of "Steps to Fulfill Doctoral Degree Requirements," visit http://ogaps.tamu.edu/Buttons/Resources-for-Degree-Completion

For a Preliminary Examination Checklist and a Report of Preliminary Examination Checklist, visit http://ogaps.tamu.edu/Buttons/Forms-Information

For the most recent version of "Steps to Fulfill Master's Degree Requirements," visit http://ogaps.tamu.edu/Buttons/Resources-for-Degree-Completion

Annual Graduate Student Evaluation (also applicable to MS candidates)

All graduate students in the Department of Nutrition are required to have an annual committee meeting and submit an annual graduate student evaluation form. The form will be due to the graduate advisor every year on March 30. If an evaluation has not been received by the deadline, the student will not be considered for a Graduate Assistantship or Graduate Scholarship from the Department. Students will also be blocked from course registration.

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 32-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 2nd 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.

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.

Residence
In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

MS Thesis Proposal
For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

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

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, and have an approved research proposal. Master's students may have incomplete grades on the degree plan but no grades of D or F on the degree plan are allowed.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a minimum of 10 working days in advance of the scheduled date for the examination. The Office of Graduate and Professional Studies must be notified in writing of any

cancellations. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

NON-THESIS OPTION
Please consult with the Graduate Advisor for details.

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 with Graduate and Professional School. A petition can be used to change a committee member or change coursework on the approved degree plan. Petitions can be accessed through the DPSS system. Petitions must be approved by all members of your official advisory committee and by the department head.

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. You may be required to reapply for admission if you fail to comply with continuous registration requirements.

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 in the Office of International Student Services.

Tuition
For details concerning payment of tuition and fees, refer to the current Schedule of Classes or visit the academic calendar at http://registrar.tamu.edu/Catalogs,-Policies-Procedures/Academic-Calendar.

PhD students working as teaching assistants who are employed at least one-half time at a Texas institution of higher education, and whose job duties are related to teaching in an academic

program associated with their field of study, are entitled to resident tuition. Graduate students in nutrition are limited to 130 credit hours of resident tuition at the doctoral level.

English Language Requirement for International Students
The English proficiency of students who primary language is not England must be certified before they are eligible to serve as TAs. Certification can be obtained in any of these ways:

*Score at least 80 on the oral section of the English Language Proficiency Examination (ELPE),
or
*Score at least 26 on the TOEFL speaking section,
or
*Score at least 8.0 on the IELTS speaking section.
or
* Acquire alternative certification from the Office of Graduate and Professional Studies via a departmental request. A student who has received a baccalaureate degree following four years of study at an accredited U.S. institution or institutions qualifies for alternative certification. All other requests for alternative certification require strong department justification and review in compliance with Office of Graduate and Professional Studies policies and guidelines.

Visit http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency 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/ 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).

Ombuds Officer

The Ombuds Officer serves as an informal, neutral and confidential resource for graduate students to discuss questions and concerns related to their graduate experience. The university is a large and complex institution and graduate students often play multiple roles (e.g., student, research collaborator, instructor, technician, peer). Misunderstandings and conflicts can arise in any one of these roles. Having a safe, off-the-record conversation with an Ombuds Officer can be a first step if you do not know where to turn. The Ombuds Officer is here to help graduate students identify options for addressing concerns and will promote a fair and impartial process for all parties involved.

You might want to contact the Ombuds Officer when:

* You need an impartial, independent, and confidential person to listen.
* You think someone at the university has treated you unfairly.
* You have an issue that you and others have not been able to resolve and that you would prefer not to address through formal channels.
* You are not sure how to interpret a University policy or procedure or how it applies to your situation.
* You feel that a University policy, procedure, or regulation has been applied unfairly, or itself is unfair or ambiguous.
* You have a problem that requires an outside party to help facilitate communication and/or negotiate a solution.

The Ombuds Officer hears about a wide range of experiences and concerns related to graduate education. Some common concerns include:

* Academic related issues (e.g., grade disputes, testing procedures, instructor/student misunderstandings)
* Intellectual property
* Interpersonal conflicts, lab politics, and problems with workplace climate
* Professional ethics
* Advice on how to have difficult conversations

* Concerns about procedural fairness or due process
* Conflicts between graduate students and their research advisors
* Concerns about inequities in work expectations and/or funding opportunities
* Disagreements with or misunderstandings of university policy/procedure
* Cultural conflicts
* Concerns about unethical or inappropriate behavior

Ombuds Officer contact information:
Ombuds Officer for Graduate and Professional Education
112 Jack K. Williams Administration Building
1113 TAMU College Station, TX 77843-1113
979-845-3631
ombuds@tamu.edu