MASTER OF SCIENCE (M.S.)
MAJOR IN HUMAN NUTRITION

Major Program
The graduate program in human nutrition promotes the study of human nutrition, food science, and biotechnology with emphasis on promoting health and preventing disease. Graduate instruction is based on a variety of learning strategies, including lecture, seminar-style discussion, participation in research, and practical laboratory work using state of the art equipment and techniques. Graduates achieve the technical skills, scientific knowledge, and local, national, and global perspectives to integrate the fields of nutrition, food science and food biotechnology to address human health concerns of the 21st century.

Dietetic Internship Concurrent Enrollment
Students enrolled in the M.S. program who are interested in obtaining the registered dietitian (RD) credential are encouraged to apply for admission to the Texas State dietetic internship (DI) after they have completed at least one term. While up to nine hours of courses taken as part of the DI may count towards the M.S. and DI may require more course work than needed to complete the M.S. alone. Students interested in this dual option are required to meet with the graduate coordinator to determine courses required to complete both programs. It is important to note that admission to the M.S. does not guarantee acceptance into the Texas State DI.

Application Requirements
The items listed below are required for admission consideration for applicable semesters of entry during the 2017-2018 academic year. Submission instructions, additional details, and changes to admission requirements for semesters other than the 2017-2018 academic year can be found on the program’s web page (http://gradcollege.txstate.edu/programs). International students should review the International Admission Documents (http://mycatalog.txstate.edu/graduate/admission-documents/international) section of the catalog for additional requirements.

- completed online ApplyTexas application
- $40 nonrefundable application fee
- $50 nonrefundable international evaluation fee (if applicable)
- baccalaureate degree (preferably in nutrition, food science or a related field) from a regionally accredited university
- official transcripts required from each institution where course credit was granted
- minimum 3.0 GPA in your last 60 hours of undergraduate course work (plus any completed graduate courses)
- background course work in:
  - Introductory Biology
  - Introductory Nutrition
  - Microbiology
  - Anatomy and Physiology
  - Introductory Chemistry (at least two semesters)
  - Organic Chemistry (at least one course)
  - Biochemistry
- GRE scores not required

TOEFL or IELTS Scores
Non-native English speakers who do not qualify for an English proficiency waiver:
- official TOEFL iBT scores required with a 78 overall
- official IELTS (academic) scores required with a 6.5 overall and minimum individual module scores of 6.0

This program does not offer admission if the scores above are not met.

Degree Requirements
The nutritional science concentration prepares students to work in public and private nutrition and health care-related facilities, agencies and advocacy organizations. It also prepares students for doctoral programs in nutrition.

Thesis Option
Core Courses
- FCS 5310 Research Methods in FCS 3
- NUTR 5364 The Science of Nutrition and Exercise 3
- NUTR 5305 Seminar in Nutrition and Disease 3
- NUTR 5306 Seminar in Nutrition in the Lifespan 3
- NUTR 5366 Nutrient Metabolism I 3
- NUTR 5367 Nutrient Metabolism II 3

Nutritional Science
- FCS 5311 Statistics and Data Analysis for Family and Consumer Sciences 3
- Choose 3 hours from the following: 3
  - NUTR 5302E Nutrition and Disease
  - NUTR 5302F Nutritional Supplements
  - NUTR 5302G Pediatric Obesity
  - NUTR 5302J Diet Therapy and Pathophysiology
  - NUTR 5362 Advanced Medical Nutrition Therapy
  - NUTR 5363 Advanced Community Nutrition
  - NUTR 5371 Externship in Human Nutrition
  - NUTR 5374 Advanced Nutrition and Genetics
  - BIO 5426 Immunology
  - ESS 5317 Exercise Physiology
  - H ED 5315 Application of Quantitative Data Analysis in Health and Wellness Promotion (Research II)
  - H ED 5320 Foundation of Public Health

Thesis 6
Choose a minimum 6 hours
- NUTR 5199B Thesis
- NUTR 5299B Thesis
- NUTR 5399A Thesis
- NUTR 5399B Thesis
- NUTR 5599B Thesis
Include the Texas State IACUC approval code. It is recommended that the thesis research involves vertebrate animals, the proposal form must obtain exemption or approval from the Texas State Institutional Review Board. If the thesis research involves human subjects, the student must obtain approval from the Graduate College for approval before proceeding with research. If the thesis research involves human subjects, the student must obtain approval from the Texas State Institutional Review Board. If the thesis research involves vertebrate animals, the proposal form must include the Texas State IACUC approval code. It is recommended that the thesis proposal form be submitted to the dean of The Graduate College by the end of the student’s enrollment in 5399A. Failure to submit the thesis proposal in a timely fashion may result in delayed graduation.

**Thesis Committee**

The thesis committee must be composed of a minimum of three approved graduate faculty members.

**Thesis Enrollment and Credit**

The completion of a minimum of six hours of thesis enrollment is required. For a student's initial thesis course enrollment, the student will need to register for thesis course number 5399A. After that, the student will enroll in thesis B courses in their field, e.g., ENG 5399A, ENG 5199B, ENG 5299B, ENG 5399B, ENG 5599B, and ENG 5999B, in each subsequent semester until the thesis is defended with the department and approved by The Graduate College. Preliminary discussions regarding the selection of a topic and assignment to a research supervisor will not require enrollment for the thesis course.

A student will be required to enroll in and pay the fee for at least one hour of the thesis course during any term in which the student will receive thesis supervision or guidance and/or in which the student is using university resources. Failure to register for the thesis course during a term in which supervision is received may result in postponement of graduation. After initial enrollment in 5399A, the student will continue to enroll in a thesis B course as long as it takes to complete the thesis. In the rare case when a student has not previously enrolled in thesis and plans to work on and complete the thesis in one term, the student will enroll in both 5399A and 5399B. The only grades assigned for thesis courses are PR (progress), CR (credit), W (withdraw), and F (failing). If acceptable progress is not being made in a thesis course, the instructor may issue a grade of F. If the student is making acceptable progress, a grade of PR is assigned until the thesis is completed. The minimum number of hours of thesis credit (“CR”) will be awarded only after the thesis has been both approved by The Graduate College and released to Alkek Library.

A student who has selected the thesis option must be registered for the thesis course during the term or Summer I (during the summer, the thesis course runs ten weeks for both sessions) in which the degree will be conferred.

**Fee Reduction**

A master's degree candidate for graduation may be eligible for a one-time fee reduction under V.T.C.A. Education Code, Section 54.054. Please refer to the section titled Fee Reduction in the Additional Fees and Expenses chapter of this catalog for more information.

**Thesis Deadlines and Approval Process**

Thesis deadlines are posted on The Graduate College website under "Current Students." The completed thesis must be submitted to the chair of the thesis committee on or before the deadlines listed on The Graduate College website.

The following must be submitted to The Graduate College by the thesis deadline listed on The Graduate College website:

1. The Thesis Submission Approval Form bearing original (wet) and/or electronic signatures of the student and all committee members.

**Non-thesis Option**

**Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FCS 5310</td>
<td>Research Methods in FCS</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5364</td>
<td>The Science of Nutrition and Exercise</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5305</td>
<td>Seminar in Nutrition and Disease</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5306</td>
<td>Seminar in Nutrition in the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5366</td>
<td>Nutrient Metabolism I</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5367</td>
<td>Nutrient Metabolism II</td>
<td>3</td>
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</tbody>
</table>

**Nutritional Science Prescribed Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>FCS 5311</td>
<td>Statistics and Data Analysis for Family and Consumer Sciences</td>
<td>3</td>
</tr>
<tr>
<td>NUTR 5372</td>
<td>Advances in Nutrition Policy and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose 3 hours from the following:

- NUTR 5302E Nutrition and Disease
- NUTR 5302F Nutritional Supplements
- NUTR 5302G Pediatric Obesity
- NUTR 5302J Diet Therapy and Pathophysiology
- NUTR 5362 Advanced Medical Nutrition Therapy
- NUTR 5363 Advanced Community Nutrition
- NUTR 5374 Advanced Nutrition and Genetics
- BIO 5426 Immunology
- H ED 5315 Application of Quantitative Data Analysis in Health and Wellness Promotion (Research II)
- H ED 5320 Foundation of Public Health

**Graduate Advisor-approved Electives**

Choose 12 hours

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
</table>

If a student elects to follow the thesis option for the degree, a committee to direct the written thesis will be established. The thesis must demonstrate the student's capability for research and independent thought. Preparation of the thesis must be in conformity with the Graduate College Guide to Preparing and Submitting a Thesis or Dissertation.

**Thesis Proposal**

The student must submit an official Thesis Proposal Form and proposal to his or her thesis committee. Thesis proposals vary by department and discipline. Please see your department for proposal guidelines and requirements. After signing the form and obtaining committee members' signatures, the graduate advisor's signature if required by the program and the department chair's signature, the student must submit the Thesis Proposal Form with one copy of the proposal attached to the dean of The Graduate College for approval before proceeding with research on the thesis. If the thesis research involves human subjects, the student must obtain exemption or approval from the Texas State Institutional Review Board prior to submitting the proposal form to The Graduate College. If the thesis research involves vertebrate animals, the proposal form must include the Texas State IACUC approval code. It is recommended that the
2. One (1) PDF of the thesis in final form, approved by all committee members, uploaded in the online Vireo submission system.

After the dean of The Graduate College approves the thesis, Alkek Library will harvest the document from the Vireo submission system for publishing in the Digital Collections database (according to the student’s embargo selection). NOTE: MFA theses will have a permanent embargo and will never be published to Digital Collections.

While original (wet) signatures are preferred, there may be situations as determined by the chair of the committee in which obtaining original signatures is inefficient or has the potential to delay the student’s progress. In those situations, the following methods of signing are acceptable:

- signing and faxing the form
- signing, scanning, and emailing the form
- notifying the department in an email from their university's or institution's email account that the committee chair can sign the form on their behalf
- electronically signing the form using the university's licensed signature platform.

Scanned, faxed, or email communications must be submitted to The Graduate College together with the form containing original signatures.

No copies are required to be submitted to Alkek Library. However, the library will bind copies submitted that the student wants bound for personal use. Personal copies are not required to be printed on archival quality paper. The student will take the personal copies to Alkek Library and pay the binding fee for personal copies.

Master's level courses in Human Nutrition: NUTR

NUTR 5101. Graduate Assistant Development.
This course is required as a condition of employment for graduate teaching and instructional assistants. This course provides regular in-service and planned periodic evaluations of instructional responsibilities. This course does not earn graduate degree credit
1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.
Course Attribute(s): Graduate Assistantship Exclude from Graduate GPA
Grade Mode: Leveling/Assistantships

NUTR 5199B. Thesis.
Continuing thesis enrollment. Focus is on data collection, analysis and writing of the thesis. The student continues to enroll in this course until the thesis is defended. Prerequisite: NUTR 5399A
1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit

NUTR 5299B. Thesis.
Continuing thesis enrollment. Focus is on data collection, analysis and writing of the thesis. The student continues to enroll in this course until the thesis is defended. Prerequisite: NUTR 5399A
2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit

This course is designed for students who do not have a sufficient background in the foundations of nutrition and food science to be successful in graduate level courses. Prerequisite: consent of graduate advisor. No graduate credit awarded; may be repeated
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from Graduate GPA
Grade Mode: Leveling/Assistantships

NUTR 5302E. Nutrition and Disease.
An advanced study of the ability of various nutrient and non-nutrient compounds found in food to prevent and treat disease. Diseases covered include cancer, diabetes, cardiovascular disease, among others. Prerequisite: graduate standing and permission of instructor
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Topics
Grade Mode: Standard Letter

NUTR 5302F. Nutritional Supplements.
An advanced study of the efficacy of dietary supplements. Both nutrient and non-nutrient supplement components will be discussed. Clinical trials, epidemiological data and molecular mechanisms of action of dietary supplements will be compared to manufacturer’s claimed action. Prerequisite: graduate standing and consent of instructor
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Topics
Grade Mode: Standard Letter

NUTR 5302G. Pediatric Obesity.
An advanced study of pediatric obesity, including causes, economic and health related consequences, evidence-based treatment and prevention strategies. Prerequisite: graduate standing and consent of instructor
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Topics
Grade Mode: Standard Letter

NUTR 5302J. Diet Therapy and Pathophysiology.
This course will investigate the use of diet as a treatment for a variety of acute and chronic disease states. Students will also learn to apply the nutrition care process to treat patients/clients with acute and chronic diseases
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing Topics
Grade Mode: Standard Letter

NUTR 5303. Nutrition and Food Science Project.
Directs the graduate student to review, analyze and compile current scientific literature pertaining to a specific, advanced topic in nutrition under guidance of faculty. Course includes preparation of a manuscript (review of literature) in publication format. Prerequisite: Graduate Standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5305. Seminar in Nutrition and Disease.
An advanced study of a selected topic in nutrition concerning nutrients and functional foods and their role in disease prevention or treatment. Class topics will enter on clinical trials, epidemiological data and molecular mechanisms of action concerning the ability of nutrients to prevent or treat disease. Repeatable for credit when topic varies
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
NUTR 5306. Seminar in Nutrition in the Lifespan.
An advanced study of a selected topic in nutrition and the lifespan from a multidisciplinary perspective, including review of scientific literature in nutrition, physiology, biochemistry, sociology, exercise sports science, epidemiology, endocrinology and genetics. Repeatable for credit when topic varies
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

Evaluation of research concepts, methods, and strategies used in nutrition and food science research. Topics include the nature of scientific research, sampling, measurement, data collection, types of research methodology, use of data analysis and management software, and evaluation of research reports
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

Individual work with specific guidance from graduate nutrition faculty. Work may include participation in research, professional practice, and/or critical review of the scientific literature. Course may be repeated once for credit when topics vary
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5360. Practicum for Dietetic Internship.
Students observe and engage in the practice of dietetics under the supervision of practitioners in facilities for health care, public health, and food systems. Repeated twice to meet requirements to complete the dietetic internship program. Graded on a credit (CR), no credit (F) basis. Prerequisites: Admission to Texas State Dietetic Internship
3 Credit Hours. 6 Lab Contact Hours. 0 Lecture Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing
Grade Mode: Credit/No Credit

NUTR 5361. Advanced Food Systems Administration.
Techniques and procedures for management, service, and marketing of meals in commercial and noncommercial food service facilities
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5362. Advanced Medical Nutrition Therapy.
Advanced study of medical nutrition therapy with emphasis on application of principles and techniques of nutritional assessment emphasizing current clinical nutrition practices. Current scientific literature will be used extensively to discuss most recent advances in the area of medical nutrition therapy
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5363. Advanced Community Nutrition.
Assessment of the nutritional needs of the community and of programs that serve the needs. Experiences include survey techniques, nutritional education, and management of programs to meet specific nutritional needs through community agencies
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

An advanced course focusing on the physiological and biochemical impact of nutrient intake on physical performance, health and fitness. Special emphasis will be placed on the investigation of a variety of dietary supplements, including purported ergogenic aids. The course requires significant reading and interpreting of the scientific literature
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

Individual work with specific guidance from graduate nutrition faculty. Work may include participation in research, professional practice, and/or critical review of the scientific literature. Course may be repeated once for credit when topics vary
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5366. Nutrient Metabolism I.
An advanced study of the biochemical and physiological foundations of nutrition and metabolism and its relevance to health and wellness. Current scientific information pertaining to biochemical structure, metabolism and physiological regulation of macronutrients and water-soluble vitamins. Prerequisites: Graduate Standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5367. Nutrient Metabolism II.
An advanced study of the biochemical and physiological foundations of nutrition with emphasis on fat-soluble vitamins and minerals. Current scientific information pertaining to structure, metabolism and physiological regulation of these micronutrients. Prerequisites: Graduate Standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5369. Nutrition and Immune Function.
This course integrates existing knowledge in several areas - nutrition, food science, metabolism and immunology. Discussion will focus on the effect of dietary components on activation of cells and genes related to immune system and underlying mechanisms of nutritional immunomodulation. Prerequisites: Graduate standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5370. Food and Nutritional Toxicology.
Basic principles of nutritional and food toxicology. Absorption, metabolism and excretion of xenobiotics, allergenic and toxic constituents in diet. Effect of dietary toxins on nutritional status, mutagenesis, carcinogenesis and disease. Regulation and safety assessment of foods including food additives, environmental contaminants, pesticides and antibiotic residues. Prerequisite: Graduate standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5371. Externship in Human Nutrition.
Structured practical experience in human nutrition, food science, food biotechnology. Supervision provided by a member of the graduate faculty and a designated individual at the work site. Requires a minimum of 150 hours of supervised experience. Prerequisites: Graduate standing and approval by graduate advisor and faculty supervisor
3 Credit Hours. 40 Lab Contact Hours.
Grade Mode: Standard Letter
NUTR 5372. Advances in Nutrition Policy and Ethics.
This course considers the disparate influences on the US food supply, on federal and state nutrition and food-related policies, and ultimately, on individual dietary intake. Potential influences, including current state and federal policies, industry, interest groups, and the media, driven by economics and ethical consideration, will be addressed. Enrollment restricted to students in the MS in Human Nutrition program
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

This course will examine the specific processes in intermediary nutrient metabolism and their genetic regulation. The effects of nutrients on gene expression, cell signaling, cell physiology, and disease processes will also be explored
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5375. Advances in Life Span Nutrition.
An advanced study of the nutritional requirements throughout the life span involving a multidisciplinary approach including, biochemistry, endocrinology and genetics, and perspectives of human psychological and social development. Prerequisite: consent of graduate advisor
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

NUTR 5399A. Thesis.
Initial thesis enrollment. Focus is on identification of thesis topic, review of literature, research design and preparation of thesis proposal. No thesis credit is awarded until completion of NUTR 5399B. Prerequisite: Graduate standing
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit

NUTR 5399B. Thesis.
Continuing thesis enrollment. Focus is on data collection, analysis and writing of the thesis. The student continues to enroll in this course until the thesis is defended. Prerequisite: NUTR 5399A
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit

NUTR 5599B. Thesis.
Continuing thesis enrollment. Focus is on data collection, analysis and writing of the thesis. The student continues to enroll in this course until the thesis is defended. Prerequisite: NUTR 5399A
5 Credit Hours. 5 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit

NUTR 5999B. Thesis.
Continuing thesis enrollment. Focus is on data collection, analysis and writing of the thesis. The student continues to enroll in this course until the thesis is defended. Prerequisite: NUTR 5399A
9 Credit Hours. 9 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit