Academic Program Requirements

The program of study is planned by the student in consultation with his/her advisor, and includes the following areas: Core courses, Guided Electives, and Master’s Thesis hours.

<table>
<thead>
<tr>
<th>Master of Science Core Courses - 30 total credits</th>
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<tbody>
<tr>
<td>NUTR- 7010 Nutrition Education for Behavior Change (3)</td>
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<tr>
<td>NUTR- 7020 Macronutrients (3)</td>
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<td>NUTR- 7021 Vitamins &amp; Minerals (3)</td>
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<tr>
<td>NUTR- 7030 Advanced Clinical Nutrition (3)</td>
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<td>NUTR- 7040 Research Design and Topics in Nutrition (3)</td>
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<td>NUTR- 7050C Methods in Nutritional Assessment (3)</td>
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<td>NUTR- 7082 Nutrition and Wellness: Preconception to Adolescence (on-line) (3)</td>
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<td>HLSC- 7027 Introductory Pathophysiology (3)</td>
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<tr>
<td>EDST- 7010 Statistical Data Analysis I (3)</td>
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<tr>
<td>EDST- 7011 Statistical Data Analysis II (3)</td>
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Guided Electives (choose 3 credit hours from the following): - 3 credits minimum*

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<tr>
<th>Guided Electives</th>
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<tr>
<td>BE- 7076 Intro. to Epidemiology (2)</td>
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<tr>
<td>BE- 7024 Computational Statistics (3)</td>
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<tr>
<td>CNSL- 7021 Counseling Techniques (3)</td>
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<td>CNSL- 7025 Group Work in Ecological Counseling (3)</td>
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<td>CNSL- 8070 Motivational Interviewing (3)</td>
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<td>EDST- 7032 Human Development: Adolescence (3)</td>
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<tr>
<td>EDST- 7045 Community-Based Participatory Research (3)</td>
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<tr>
<td>EDST- 7095 Motivation and Cognition (3)</td>
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<td>EDST- 9089 ECAR- Photovoice (1) **</td>
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<tr>
<td>EDST- 9089 ECAR- Concept Mapping (1) **</td>
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<td>NUTR- 7060 Individual Study in Food &amp; Nutrition (1- 4)</td>
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<tr>
<td>NUTR- 7070 Readings in Nutrition (1- 4)</td>
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Master’s Thesis - 4 credits minimum

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<tr>
<th>Master’s Thesis</th>
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<tr>
<td>NUTR- 7090 Master’s Thesis (4)</td>
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</table>

**Total: 37 semester credit hours**

*other graduate courses may be taken in lieu of those listed above. Please check with your graduate advisor to get approval prior to registering for the course.

**ECAR stands for Educational & Community Based Action Research**
Although students will be encouraged to take the above *core* course selections, in the case of scheduling conflicts, alternate course selections are available (but only for classes offered *outside* the Nutrition program). Each student should see his/her advisor each semester, prior to registering for classes.

### Student Course Schedule (Model)

#### Fall Semester Year 1

- **NUTR-7010**  Nutrition Education for Behavior Change (3)  
- **NUTR-7020**  Macronutrients (3)  
- **NUTR-7082**  Nutrition and Wellness: Preconception to Adolescence  
- **EDST-7010**  Statistical Data Analysis I  
- Guided Elective  

#### Spring Semester Year 1

- **NUTR-7021**  Vitamins and Minerals  
- **NUTR-7030**  Advanced Clinical Nutrition  
- **NUTR-7040**  Research Design and Topics in Nutrition  
- **NUTR-7050**  Methods in Nutritional Assessment  
- **HLSC–7027**  Introductory Pathophysiology*  

#### Summer Semester or Fall Semester Year 2

- **NUTR-7090**  Master’s Thesis  
- **EDST-7011**  Statistical Data Analysis II  

#### Spring Semester Year 2

- **NUTR-7090**  Master’s Thesis  

* This course is offered on Tuesday and Thursday from 9:30-10:50am. If work schedules preclude a student taking day classes, the student should make the following change: For fall semester, register for NURS 8022 Advanced Physiology and Pathophysiology (online version) instead of EDST 7010 Statistical Data Analysis I. For spring semester, take EDST 7010 Statistical Data Analysis I instead of HLSC 7027 Introduction to Pathophysiology.
Core Courses

The following core courses are required of all graduate students:

**NUTR-7010. Nutrition Education for Behavior Change (3)**
This course will provide students with the skills necessary for the development of appropriate nutritional intervention for optimal health. Topics include: development of food preferences, psychosocial correlates of dietary intake, theoretical models of behavior change, adherence issues in clinical trials and research. Offered: Fall Semester, Wednesday 4:00 – 6:30 pm  
*Pre-requisite:* NUTR 1030 Personal Nutrition or equivalent

**NUTR-7020. Macronutrients (3)**
This course will provide students with an in-depth examination of energy and the macronutrients. Discussion will include structure, function, digestion, absorption, transport, metabolism and requirements of macronutrients. The relationship of the macronutrients to energy transformation will be discussed, as well as the regulation of fuel utilization. Offered: Fall Semester, Thursday 4:00 – 6:30 pm  
*Pre-requisite:* 1 year of undergraduate biochemistry equivalent to Survey of Biochemistry I and II

**NUTR-7021. Vitamins and Minerals (3)**
For each vitamin and mineral, consideration will be given to structure, sources, digestion, absorption, transport, functions and mechanisms of action, metabolism and excretion, recommended dietary allowance or dietary reference intake, deficiency, toxicity, and assessment. Offered: Spring Semester, Tuesday 4:00 – 6:30 pm  
*Pre-requisite:* One semester of biochemistry equivalent to Survey of Biochemistry I

**NUTR-7030. Advanced Clinical Nutrition (3)**
This course is based on knowledge of macronutrient metabolism, physiology and biochemistry. Chronic and acute diseases with a nutrition component will be examined from the standpoint of understanding the disease state and the current nutritional approaches to preventing and/or managing the disease. Offered: Spring Semester, Monday 4:00 – 6:30 pm  
*Pre-requisite:* NUTR 7020, concurrent HLSC 7027, and NUTR 1030 Personal Nutrition or equivalent

**NUTR-7040. Research Design and Topics in Nutrition (3)**
This course is designed to explore current nutrition research. Emphasis is given to studies that explore functional foods, alternative and complementary therapies, genetically-modified foods, and food security and sustainability. Offered: Spring Semester, Wednesday 4:00 – 6:30 pm  
*Pre-requisite:* NUTR-1030 Personal Nutrition or equivalent and EDST 7010 Statistical Data Analysis I (can be taken as a co-requisite) or permission of the faculty

**NUTR-7050C. Methods in Nutritional Assessment (3)**
Using a learning-centered approach, this course will provide graduate students with a thorough understanding of methods, and the rationale behind them, for assessing the nutritional status of
individuals and populations. Students will practice critical, practical and creative thinking skills independently and cooperatively in the study and application of nutritional assessment. Offered: Spring Semester, Thursday 4:00 – 6:30 pm Pre-requisite: NUTR 7020, concurrent HLSC 7027, and NUTR 1030 Personal Nutrition or equivalent

NUTR-7082. Nutrition and Wellness: Preconception through Adolescence (online) (3)
Using an interactive learning approach, students will explore nutritional issues of women from preconception through lactation and of children through adolescence. Students will use public and community health frameworks to identify nutritional needs and influences and develop strategies to improve nutritional status. This is a life-course modeled class that takes a multidisciplinary approach towards maternal and child nutrition. Offered: Fall Semester 2016, online. Tuesday 4-6:30 pm
Pre-requisite: NUTR-1030. Personal Nutrition, or equivalent

HLSC-7027. Introductory Pathophysiology (3)
This course builds upon basic knowledge of human anatomy, physiology, and the mechanisms of disease. Basic and translational research into biochemical, molecular and organ system dysfunction are emphasized. Current thought concerning age-related changes and theories of physiological aging are included. Offered: Spring Semester, T, H 9:30-10:50am
Pre-requisite: 1 year of undergraduate Anatomy and Physiology
Alternates: BIOL-7021 Human and Animal Comparative Physiology (3) or NURS-8022 Advanced Physiology and Pathophysiology (online 4)

EDST-7010. Statistical Data Analysis I (3)
Descriptive statistics and simple significance tests. First comprehensive course in statistics for graduate students. Offered: online or in class Fall Semester and Summer; check OneStop or department
Alternate: BE-7022. Intro to Biostatistics (4)

EDST-7011. Statistical Data Analysis II (3)
Inferential statistics through three-way analysis of variance and analysis of covariance.
Pre-requisite: EDST-7010 Statistical & Data Analysis I Offered: online or in class Spring Semester and Summer Session; check One Stop or department
Alternate: BE-7088. Regression Analysis (4); BE-7061 Biostatistics in Research (3)

Guided Electives:
The following guided electives offer diverse course content in areas related to the field of nutrition. Students will be advised to choose a minimum of 3 semester credits hours based on their needs and interests.

BE-7024. Computational Statistics (3)
SAS - Introduction; windows environment; techniques of entering data; importing data; creating permanent data sets; managing data; sub setting data sets; merging data sets; proc command; running SAS programs; analyzing counts and tables; analyzing quantitative data; creating graphs; controlling output. R - Downloading and installing R; packages; graphing facilities;
getting data into R; downloading data sets into R from external sources; matrix function; data frame function; list function; managing subsets of data; sorting data; exporting data; loops and functions; analyzing counts and tables; analyzing quantitative data; panel data Project - Analyze a specific internet health data

**BE-7076. Introduction to Epidemiology (2)**
This course examines methodologies for studies of disease in human populations. Examples include chronic disease, infectious disease, occupational, and environmental epidemiology. Sources, collection, handling, and interpretation of health data are also discussed.  
*Prerequisite:* Permission of instructor.

**CNSL-7021. Counseling Techniques (3)**
This course focuses upon the skills necessary to counsel effectively. Students will have the opportunity to learn, observe, and demonstrate effective counseling behaviors. Through work with the instructor, with an individual supervisor, and with one other, students will develop and practice basic and advanced counseling skills and strategies.

**CNSL-7025. Group Work in Ecological Counseling (3)**
The study of group work course includes theoretical and experiential studies of group purpose; types of groups (e.g., task, psychoeducation, counseling, psychotherapy); group development; group member behavior; group leadership style; group process and dynamics; planning, implementation, processing, and evaluation in group work; theories of group counseling and psychotherapy. To develop facilitative skills, students will participate in supervised practice as both members and leaders of group activities.

**CNSL-8070. Motivational Interviewing (3)**
Motivational Interviewing is an evidence-based person-centered counseling practice for addressing the common problem of ambivalence about behavior change. Students in this course will learn how to describe and apply principles and techniques of MI to a wide range of behaviors (e.g. smoking cessation, weight loss and medication adherence) across various settings (e.g., addiction treatment centers, hospitals and schools)

**EDST-7032. Human Development: Adolescence (3)**
This course offers an investigation of adolescence (from puberty to emerging adulthood) with an examination of physical, cognitive, cultural, personality, and socio-emotional development.

**EDST-7045. Community- Based Participatory Research (3)**
This course is designed to familiarize learners with the theoretical framework, methodologies, and applications of community-based participatory research and how it differs from traditional research approaches and community-placed research. The course will emphasize how to apply such an approach to complex health and socio-cultural problems.

**EDST-7095. Motivation and Cognition (3 Graduate Credits)**
This course offers an investigation of adolescence (from puberty to emerging adulthood) with an examination of physical, cognitive, cultural, personality, and socio-emotional development.
**EDST-9089. ECAR- Photovoice (1)**
This course focuses on Photovoice, a participatory research technique in which people use cameras to document aspects in their life and then they share and engage in a critical dialogue about the photos.

**EDST-9089. ECAR- Concept Mapping (1)**
This course focuses on Concept Mapping Methodology, an integrative, mixed methods research approach that uses brainstorming, card sorting, and ratings with multidimensional scaling and cluster analysis to create a data-driven visual representation of thoughts or ideas of a group.

**NUTR-7060. Individual Study in Food and Nutrition (1-4)**
Individual research in the area of food and nutrition when there is no opportunity in a regularly scheduled class to pursue such an investigation.
*Pre-requisite:* Permission of advisor; Choose section number with major advisor

**NUTR-7070. Readings in Nutrition (1-4)**
A selected program of readings regarding major research contributions in the area of food and nutrition when there is no opportunity in a regularly scheduled class to pursue such an investigation.
*Pre-requisite:* Permission of advisor; Choose section number with major advisor