Online MS Nutrition (Non-Thesis)
Program Curriculum

MS Nutrition Prerequisite Coursework

All prospective students to the MS Nutrition online program must have completed or must complete 7 basic science core courses. 5 out of the 7 of these courses must be taken before matriculation and 2 can be taken after. The courses can be taken with UMass Amherst or with any other US institution. Nutr 230-Basic Nutrition must be completed before Matriculation. The UMass course are listed for your reference:

<table>
<thead>
<tr>
<th>Required course</th>
<th># of semesters needed</th>
<th>UMass offering</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro to Biology and Zoology</td>
<td>1</td>
<td>Bio 151-Introductory Biology</td>
<td>On-campus</td>
</tr>
<tr>
<td>Human Physiology</td>
<td>1</td>
<td>Kin 270-01-Anatomy and Physiology with lab</td>
<td>Online-spring, summer, fall and winter terms.</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>2</td>
<td>Chem 111 &amp; 112-General Chemistry</td>
<td>On-campus</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>1</td>
<td>Chem 250-Organic chemistry</td>
<td>On-campus</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>1</td>
<td>Biochem 420-Elementary Biochemistry</td>
<td>On-campus</td>
</tr>
<tr>
<td>Microbiology</td>
<td>1</td>
<td>Microbio 310-General Microbiology</td>
<td>On-campus</td>
</tr>
<tr>
<td>Basic Nutrition</td>
<td>1</td>
<td>Nutr 230-Basic Nutrition</td>
<td>Online/on-campus</td>
</tr>
</tbody>
</table>

Additionally, if a student did not get a BS in Nutrition for their undergraduate degree, they must complete the following 2 courses either before matriculation or after:
- Nutr 352-Nutrition in the Lifecycle
- Nutr 430-Nutrition and Metabolism

MS Nutrition Curriculum

The 33 required credits are split into 4 types of courses (full descriptions are below):

1. Advanced Nutrition Core Courses (14 credits):
   - Nutrition 630-Advanced Nutrition and Metabolism
   - Nutrition 640-Public Health Nutrition
   - Nutrition 714-Vitamins and Minerals
   - Nutrition 741-Methods in Nutrition Research
   - Nutr 793A/794A-Graduate Seminars in Nutrition

2. Required Public Health Course work (6 credits):
   - Biostats 540-Introduction to biostatistics
   - Epi 630-Principles of Epidemiology

3. Elective courses (12 credits):
   - 2 3-credit elective courses from the Nutrition department. 500 level or above.
   - 2 additional 3-credit courses, 500 level or above, with at least one from outside Nutrition department.

4. Culminating Experience (1 credit):
   - Nutr 697A ST: Advanced Writing Seminar
MS Nutrition Course Descriptions


Nutr 352-Nutrition in the Lifecycle (3-credits): Nutritional needs and effects of intakes during pregnancy and lactation, infancy, preschool period, middle childhood, adolescence, adulthood and aging. Relation of nutrition to physical and physiological growth, development, maturation, and decline.

Nutr 430-Nutrition and Metabolism (3-credits): The nutrients and their metabolic fate. The interdependent and interrelated nature of nutrients, and the effects of diet upon metabolic functions.

Nutr 630-Advanced Nutrition and Metabolism (3-credits): Metabolism of nutrients and dietary constituents and its integration into biochemical mechanisms. Critical reviews, evaluations and discussions of current research papers involving topics of nutrient metabolism and biochemistry relevant to human health and metabolic disorders.

Nutr 640-Public Health Nutrition (3-credits): A practice-based approach to public health nutrition processes through readings, lectures and active participation; assessing community needs, priorities and goals; implementing nutrition interventions; designing nutrition plans; building coalitions; and preparing grant applications.

Nutr 714-Vitamin and Minerals (3 credits): This course is designed as a foundational course in micronutrient nutrition. The course will focus on specific vitamin and mineral functions, requirements and factors that influence them, methods for assessing vitamin status in individuals and populations, and the health consequences of deficiency or excess. The clinical and public health implications of micronutrient nutrition will be emphasized.

Nutr 741-Methods in Nutrition Research (3-credits): Overview of laboratory and population research methodologies used in nutrition. Students will increase familiarity with nutrition research methods and study design.

Nutr 793A/794A (1-credit each): Graduate Seminars in Nutrition. Various topics covered.

Nutr 697A-ST Advanced Writing Seminar: This 1-credit graduate course will prepare students to write a systematic review. The purpose of a systematic review is to find as much research as possible that is relevant to particular research questions, and use explicit methods to identify what can reliably be said on the basis of these studies. Such reviews synthesize research findings in a form which is easily accessible to those who may use it to make policy or practice decisions. In this way, systematic reviews reduce the bias which may occur in reviewing research evidence.

Biostats 540-Introduction to Biostatistics (3-credits): Principles of statistics applied to analysis of biological and health data, evaluation of public health and clinical programs.

Epi 630-Principles of Epidemiology (3-credits): An epidemiological perspective on health. General approaches for describing patterns of disease in groups of people, and elucidating various processes involved in creating differing levels of health in human groups. Lecture and lab examples of a wide range of contemporary health problems.
Nutrition Electives

**Nutr 597K-Culture, Nutrition, and Health (3-credits):** How culture and ethnicity affect dietary practices and health in the U.S. Influence of food security, acculturation, and politics on food availability, food practices, and health outcomes. Health and health disparities in different cultural/ethnic groups, including overview of epigenetics. Emphasis on cross-cultural communication to address health and nutrition concerns.

**Nutr 572-Community Nutrition (3-credits):** Skills and techniques needed to effectively carry out community nutrition programs and nutrition education, including knowledge of agencies and programs, community assessment, legislation, nutrition education, and working with people.

**Nutr 577-Nutritional Problems in the US (3-credits):** The goal of this course is for students to develop insight into the epidemiologic, physiologic, biochemical and nutritional complexities of major diet-related diseases in the United States.

**Nutr 578-Nutritional Problems in the developing world (3-credits):** Malnutrition as it exists in developing countries and its socioeconomic background. Protein-energy malnutrition, famine, vitamin and mineral deficiency diseases, synergism between nutrition and infection, and the role of international agencies in fighting malnutrition. Prerequisite: NUTRITN 352 or consent of instructor.

**EPI 634-Nutritional Epidemiology (3-credits):** Epidemiologic study design problems and issues; major methods of dietary assessment; non-dietary nutritional assessments; and the relative strength of evidence in support of diet-disease relationships.

MS Nutrition Course of study

All MS Nutrition courses run in a specific semester. Students will follow one of the plans of study based on their admissions date.

**Spring Semester Courses:**
**Prerequisites:**
Nutr 430-Nutrition and Metabolism

**Core:**
Biostats 540-Intro to Biostatistics
Epidemiology 630-Principles of Epidemiology
Nutr 630-Advanced Nutrition and Metabolism
Nutr 741-Methods of Nutrition Research
Nutr 697A-ST: Advanced Writing Seminar

**Electives:**
Nutr 578-Nutritional Problems in the Developing world

**Summer Semester Courses:**
**Prerequisites:**
Nutr 352-Nutrition in the Lifecycle

**Core:**
Nutr 793A & 794A-Nutrition graduate seminars
Nutr 697A-ST: Advanced Writing Seminar
**Fall Semester courses:**

**Core:**
- Biostats 540-Intro to Biostatistics
- Epidemiology 630-Principles of Epidemiology
- Nutr 640-Public Health Nutrition
- Nutr 714-Vitamins and Minerals
- Nutr 697A-ST: Advanced Writing Seminar

**Electives:**
- Nutr 572-Community nutrition
- Nutr 577-Nutritional Problems in the US
- Nutr 597K-ST: Culture, Nutrition and Health
- Epi 634-Nutritional epidemiology

**Plans of study**

For those admitted to the spring semester (*if needed):

<table>
<thead>
<tr>
<th>Spring Term 1st Year</th>
<th>Summer Term 1st Year</th>
<th>Fall Term 1st Year</th>
</tr>
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<tbody>
<tr>
<td>Biostats 540-Intro to biostats</td>
<td>Nutr 793A-graduate seminar</td>
<td>Nutr 640-Public Health Nutrition</td>
</tr>
<tr>
<td>Epi 630-Principles of epidemiology</td>
<td>Outside Nutrition Elective</td>
<td>Nutr 714-Vitamins and Minerals</td>
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<tr>
<td>Nutr 430-Nutrition and Metabolism*</td>
<td>Nutr 352-Nutrition in the Lifecycle*</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Nutr 630-Advanced Nutrition and Metabolism</td>
<td>Nutr 794A-Graduate Seminar</td>
<td>Nutrition Elective</td>
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<td>Nutr 741-Methods in Nutrition Research</td>
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For those admitted to the fall semester (*if needed):

<table>
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<tr>
<td>Nutr 640-Public Health Nutrition</td>
<td>Biostats 540-Intro to biostatistics</td>
<td>Nutr 793A-Graduate seminar</td>
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<td>Nutrition Elective</td>
<td>Epi 630-Principles of Epidemiology</td>
<td>Outside Nutrition Elective</td>
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