

NUTRITION AND FOOD SCIENCE MAJOR

Program Director: Sara Kao

The department offers three areas of concentration: dietetics, food science, and nutritional science. Each concentration provides for competencies in several areas of work; however, each concentration is designed specifically for certain professional careers.

The dietetics concentration develops an understanding and competency in food, nutrition, dietetics management, clinical nutritional care, community nutrition, counseling and education. The dietetics concentration is approved by the *Accreditation Council for Education in Nutrition and Dietetics (ACEND)*. Dietetics program graduates must apply and complete a post-baccalaureate internship prior to taking a national exam to become a registered dietitian. The course work in the dietetics option provides a strong foundation in science. Students share classes with undergraduate students majoring in biology, chemistry, biochemistry, food science; graduate students in nutrition; and those on pre-med or pre-health track.

The food science concentration is concerned with the application of the fundamental principles of the physical, biological, and behavioral sciences and engineering to understand the complex and heterogeneous materials recognized as food. The food science concentration is approved by the Institute of Food Technologists and prepares students for careers in food industry and food safety.

The nutritional science concentration emphasizes the physical and biological sciences in relation to nutrition and the development of laboratory skills in these areas. Students in this concentration frequently elect to go on to graduate or medical school.

Admission to the Major

The major in Nutrition and Food Science is not a Limited Enrollment Program (LEP). Students may either declare the major at the time of application or transfer into the major at any time thereafter. If interested in transferring into the NFSC major, please contact the departmental office and ask to speak with an advisor.

Program Learning Outcomes

1. Competency in integrating laboratory skills into analysis of food.
2. Competency in assessing the nutritional status of a patient and in developing an appropriate nutrition treatment plan for the patient

REQUIREMENTS

All students are required to earn a grade of "C-" or better in courses applied toward satisfaction of the major. This includes all required courses with a prefix of NFSC, as well as certain required courses in supporting fields. A list of these courses for each program may be obtained from the department office.

| Course | Title | Credits |
|---|------------------------------|---------|
| Base Curriculum for All Concentrations | | |
| NFSC100 | Elements of Nutrition | 3 |
| NFSC112 | Food: Science and Technology | 3 |

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|--|--|--------------|
| BSCI170 & BSCI171 | Principles of Molecular & Cellular Biology and Principles of Molecular & Cellular Biology Laboratory | 4 |
| BSCI223 | General Microbiology | 4 |
| CHEM131 | Chemistry I - Fundamentals of General Chemistry | 3 |
| CHEM132 | General Chemistry I Laboratory | 1 |
| CHEM231 | Organic Chemistry I | 3 |
| CHEM232 | Organic Chemistry Laboratory I | 1 |
| CHEM241 | Organic Chemistry II | 3 |
| CHEM242 | Organic Chemistry Laboratory II | 1 |
| CHEM271 | General Chemistry and Energetics | 2 |
| CHEM272 | General Bioanalytical Chemistry Laboratory | 2 |
| Concentration Requirements (select one of the following): | | 50-66 |
| Dietetics | | |
| Food Science | | |
| Nutritional Science | | |
| Total Credits | | 80-96 |

Concentrations: Dietetics

| Course | Title | Credits |
|---|--|-----------|
| NFSC315 | Nutrition During the Life Cycle | 3 |
| NFSC350 | Foodservice Operations | 5 |
| NFSC380 | Methods of Nutritional Assessment | 3 |
| NFSC440 | Advanced Human Nutrition | 4 |
| NFSC470 | Community Nutrition | 3 |
| NFSC455 | Medical Nutrition Therapy I | 4 |
| NFSC456 | Medical Nutrition Therapy II | 4 |
| NFSC491 | Professional Issues and Opportunities in Dietetics | 3 |
| BCHM461 | Biochemistry I | 3 |
| BCHM462 | Biochemistry II | 3 |
| BMGT364 | Managing People and Organizations | 3 |
| BSCI330 | Cell Biology and Physiology | 4 |
| BSCI450 | Mammalian Systems Physiology | 3 |
| MATH113 | College Algebra and Trigonometry | 3 |
| or MATH115 | Precalculus | |
| PSYC100 | Introduction to Psychology (SB) | 3 |
| EDMS451 | Introduction to Educational Statistics | 3 |
| or BIOM301 | Introduction to Biometrics | |
| SOCY100 | Introduction to Sociology (SB) | 3 |
| Dietetics Restricted Elective (Choose from list below) | | 12 |
| AREC250 | Elements of Agricultural and Resource Economics | |
| BMGT220 | Principles of Accounting I | |
| BMGT360 | Strategic Management of Human Capital | |
| BSCI222 | Principles of Genetics | |
| BSCI422 | Principles of Immunology | |
| EDCP210 | Peer Counseling Skills and Mental Health Advocacy | |
| KNES360 | Physiology of Exercise | |
| NFSC421 | Food Chemistry | |
| NFSC425 | | |
| NFSC430 | Food Microbiology | |

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|---|----------------------------|-----------|
| NFSC498 | Selected Topics | |
| NFSC450 | Food and Nutrient Analysis | |
| Alternate course by approval of advisor | | |
| Total Credits | | 69 |

Food Science

| Course | Title | Credits |
|--|---|-----------|
| NFSC398 | Seminar | 1 |
| NFSC412 | Food Processing Technology | 4 |
| NFSC414 | Mechanics of Food Processing | 4 |
| NFSC421 | Food Chemistry | 3 |
| NFSC422 | Food Product Research and Development | 3 |
| NFSC423 | Food Chemistry Laboratory | 3 |
| NFSC430 | Food Microbiology | 3 |
| NFSC431 | Food Quality Control | 4 |
| NFSC434 | Food Microbiology Laboratory | 3 |
| NFSC450 | Food and Nutrient Analysis | 3 |
| BCHM463 | Biochemistry of Physiology | 3 |
| BIOM301 | Introduction to Biometrics | 3 |
| MATH120 | Elementary Calculus I | 3 |
| or MATH140 | Calculus I | |
| MATH121 | Elementary Calculus II | 3 |
| or MATH141 | Calculus II | |
| PHYS121 | Fundamentals of Physics I | 4 |
| Food Science Restricted Elective (Choose from list below) | | 3 |
| AREC250 | Elements of Agricultural and Resource Economics | |
| BMGT220 | Principles of Accounting I | |
| BMGT360 | Strategic Management of Human Capital | |
| BSCI222 | Principles of Genetics | |
| BMGT364 | Managing People and Organizations | |
| BSCI422 | Principles of Immunology | |
| ENST333 | Ecosystem Health and Protection | |
| KNES360 | Physiology of Exercise | |
| NFSC425 | | |
| Alternate course by approval of advisor | | |
| Total Credits | | 50 |

Nutritional Science

| Course | Title | Credits |
|---------|---------------------------------|---------|
| NFSC315 | Nutrition During the Life Cycle | 3 |
| NFSC421 | Food Chemistry | 3 |
| NFSC440 | Advanced Human Nutrition | 4 |
| NFSC450 | Food and Nutrient Analysis | 3 |
| BCHM461 | Biochemistry I | 3 |
| BCHM462 | Biochemistry II | 3 |
| BCHM464 | Biochemistry Laboratory | 3 |
| BCHM465 | Biochemistry III | 3 |
| BIOM301 | Introduction to Biometrics | 3 |
| BSCI222 | Principles of Genetics | 4 |
| BSCI330 | Cell Biology and Physiology | 4 |
| BSCI450 | Mammalian Systems Physiology | 3 |
| MATH120 | Elementary Calculus I | 3 |

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|---|-----------------------------------|-----------|
| or MATH140 | Calculus I | |
| PHYS121 | Fundamentals of Physics I | 4 |
| Nutritional Science Restricted Elective (Choose from list below) | | 3 |
| BSCI410 | Molecular Genetics | |
| BSCI422 | Principles of Immunology | |
| BSCI430 | Developmental Biology | |
| BSCI447 | General Endocrinology | |
| NFSC380 | Methods of Nutritional Assessment | |
| NFSC455 | Medical Nutrition Therapy I | |
| NFSC470 | Community Nutrition | |
| Alternate course by approval of advisor | | |
| Total Credits | | 49 |

Nutritional Science restricted elective list

| Course | Title | Credits |
|--|-----------------------------------|---------|
| NFSC380 | Methods of Nutritional Assessment | 3 |
| NFSC456 | Medical Nutrition Therapy II | 4 |
| NFSC470 | Community Nutrition | 3 |
| BSCI410 | Molecular Genetics | 3 |
| BSCI422 | Principles of Immunology | 3 |
| BSCI430 | Developmental Biology | 3 |
| BSCI447 | General Endocrinology | 3 |
| Or alternate course by approval of advisor | | |

GRADUATION PLANS

Click here (<https://agnr.umd.edu/academics/advising/four-year-plans/>) for roadmaps for graduation plans in the College of Agricultural and Natural Resources.

Additional information on developing a graduation plan can be found on the following pages:

- <http://4yearplans.umd.edu>
- the Student Academic Success-Degree Completion Policy (<https://academiccatalog.umd.edu/undergraduate/registration-academic-requirements-regulations/academic-advising/#success>) section of this catalog