The Master of Science program in Nutrition at Brooklyn College provides advanced-level study of nutritional science and clinical nutrition. This advanced degree equips you with more sophisticated understanding of nutrient metabolism and its application to both normal physiological and pathophysiological states. The M.S. degree can help you assume positions of greater responsibility in the field of nutrition. Careers in nutrition include positions as clinical nutritionists, nutrition educators, administrators of programs that provide nutrition services in commercial or institutional settings, nutritionists in community-based or private practice settings, and researchers or interpreters of research in academia, medical institutions, industry, the government or mass media.

The M.S. degree does not directly lead to the credential of Registered Dietician Nutritionist (RDN); the program provides some courses that meet D.P.D. (Didactic Program in Dietetics) requirements, and some courses in the Brooklyn College Dietetic Internship can be used as electives toward the M.S. degree. Students who wish to become Registered Dietician Nutritionists may apply to our Academy of Nutrition and Dietetics- accredited Dietetic Internship (see below), which requires acceptance into our M.S. program and prior completion of 12 graduate credits (see below). Application to the Dietetic Internship can be made after students have completed a set of courses (D.P.D) prescribed by the AND and have received a Verification Statement. Although these courses are mainly taken at the undergraduate level before beginning the M.S. program, a number of the graduate levels courses can be used to fulfill DPD requirements. Note also that all of the prerequisites for the M.S. program are also part of the DPD.

The program is housed in the Department of Health and Nutrition Sciences, which also offers an M.A. in Thanatology and an M.A. in Community Health Education. Students in the M.S. in Nutrition may take some courses that are common to these programs.

Admission Requirements

Applicants are expected to have an overall GPA of at least 3.0; grades in the prerequisite areas listed below are of particular importance. The Graduate Record Examination is not required. International students may require TOEFL (114) or IELTS (8); information may be obtained from the Office of Graduate Admissions. Please go to http://www.brooklyn.cuny.edu/programs/index.jsp?div=G for additional information on graduate admissions.

Most students who apply to the M.S. program have undergraduate degrees in Nutrition. However, students with baccalaureate degrees in other fields may be accepted to the program after they complete the following undergraduate courses (at Brooklyn College or any accredited college) with satisfactory grades. Students who have prerequisites to fulfill would first apply for undergraduate non-degree or second baccalaureate (taking at least 30 undergraduate credits in a particular field) status in order to take these courses. An application to the M.S. program should be submitted after all but 1-2 courses have been completed with grades of at least B- and the remaining prerequisite courses are in progress. (BC courses are listed in parentheses):

- General Biology sequence (Bio 1001 and 1002) or courses in cell and molecular biology
- General Chemistry (single semester course with lab) (Chem 1040) or General Chemistry sequence
- Organic Chemistry (single semester course with lab) (Chem 2500) or Organic Chemistry sequence
- Human Physiology (HNSC or PED 2300; no lab required) *; or both parts of a two-semester Anatomy and Physiology sequence
- Human Nutrition (HNSC 2210) or a Nutrition majors’ level course in Nutrition
- Biochemistry or Nutritional Chemistry (HNSC 3210)
- Biostatistics (HNSC 3300)
- Clinical Nutrition I and II (HNSC 4240 and HNSC 4241)
Degree Requirements

- 30 total credits, plus additional credits for the thesis (HNSC 7999) or Dietetic Internship, if so desired
- 6 required courses (18 credits):
  - Nutritional Biochemistry HNSC 7210
  - Micronutrients HNSC 7211
  - Pathophysiology HNSC 7213
  - Community Nutrition HNSC 7230
  - Nutrition and Disease HNSC 7241 (prerequisite 7213)
  - Principles of Nutrition Research 7931

- 4 elective courses (12 credits) chosen from: HNSC 7212, 7221, 7231, 7232, 7233, 7234, 7240, 7200 (DI), 7201 (DI), 7120, 7183, 7935.

- During their first year in the program, students should take HNSC 7213 (Fall).

Students must maintain a GPA of at least 3.0; failure to do so will place the student on academic probation. Failure to achieve a GPA of 3.0 within 9 credits after placement on probation can lead to dismissal from the program. A GPA of at least 3.0 is also required for eligibility to take the comprehensive examination and for graduation. A student may retake courses (up to 6 credits total) for which a grade of F has been received; the new grade will replace the F in calculation of the GPA; the student must submit a form to use of this F Replacement Policy. A grade of INC must be resolved in the following semester or it will become FIN (equivalent to F).

Exit Requirement: choice between a comprehensive examination or Master's thesis.
In addition to completion of course work with a GPA of at least 3.0, student must either pass a comprehensive examination or submit an acceptable M.S. thesis. The comprehensive examination is given in the late Fall and late Spring semesters. The exam consists of questions pertaining to the required courses HNSC 7210, 7211, 7230, 7241 and 7931. Students must complete all five courses with a grade of at least B in order to qualify to take the examination. It is recommended that students complete the required courses early in their programs and take the comprehensive examination soon after. You do not have to complete all 30 credits in order to apply for the examination. Students apply for the exam online:

1. Sign in to the WebCentral Portal at https://portal.brooklyn.edu
2. Select the "eServices" tab
3. Look for the "Student Transactions" channel
4. Select the "Apply for a comprehensive exam" item in the Graduate Studies section

Students will receive access to study material posted on Blackboard. Students taking the exam for the first time will pass if the total grade is at least 70%. Students who fail the exam may apply to take the exam once again, retaking only the course areas in which the previous score was less than 70%; passing the second time requires a score of at least 70% in EACH of the repeated areas.

Students choosing the thesis must take HNSC 7931, work with a faculty advisor, submit a thesis proposal and title with the advisor’s approval, and register for HNSC 7999 by the time they expect to submit the completed thesis. It is recommended that students take HNSC 7935 (an elective) after they complete 7931 in order to develop the thesis proposal. Once students select the examination (by taking it) or thesis (by registering for HNSC 7999) they may not change to the other option.

Note that students must maintain matriculation (be registered for a course or pay "Maintenance of Matriculation") until completion of the program. That includes the semester(s) in which the student submits the thesis or takes the comprehensive examination. Students ith a GPA or at least 3.0 may file for a Leave of Absence if they must miss 1-2 semesters; they can be readmitted when returning; without the Leave or Maintenance of Matriculation, missing a Fall or Spring semester requires Readmission.

All requirements for the degree must be completed within seven years of the time the student begins to take graduate courses. Students must file for graduation with the Registrar before their last semester.
STUDENTS ARE STRONGLY ADVISED to read both the general information in the Brooklyn College Graduate Bulletin and the information for students in the M.S. in Nutrition in the Department of Health and Nutrition Sciences. Students are required to follow the requirements listed in Bulletin that is effect when they begin the program, unless they officially switch to a later version of the Bulletin. You may contact the Graduate Deputy Chairperson for Nutrition, Prof. Kathleen Axen: kaxen@brooklyn.cuny.edu for information and counselling.

**Dietetic Internship:**

In addition to the courses required for admission to the M.S., applicants must complete all didactic program in dietetic (DPD) requirements (see below) and obtain a signed Verification Statement from their DPD director. Applicants must be accepted into the MS program in Nutrition and complete four graduate courses, including HNSC 7213, 7240 and 7241, before beginning the Dietetic Internship. Applications to the DI are through the Academy of Nutrition and Dietetics (www.eatright.org) matching process.

Students who intend to apply to the Dietetic Internship (DI) must complete the following additional undergraduate courses to meet Didactic Program in Dietetic (DPD) requirements. Note that for courses marked (*), graduate courses may be used to fulfill the content area:

*HNSC 1100  (3 cr) Personal and Community Health. The KRD 5.3 elements of this course can also be met in HNSC 7221 (Cultural Aspects of Foods)
HNSC 2220  (3 cr) Food Science (HNSC 2210 prereq, Chem 1040 pre-or coreq, HNSC 2221 coreq)
HNSC 2221  (1 cr) Food Science laboratory (HNSC 2220 coreq)
*HNTR 2222 and 2223  (2 cr) Foods of Diverse Populations and Lab (HNSC 2210 prereq, HNSC 2223 co-req)

**OR HNSC 7221**

HNSC 2301  (2) Human Physiology Laboratory (2300 co-req)
*HNSC 3230  (3) Life Cycle Nutrition (HNSC 1100 and 2210 prereqs); **OR HNSC 7231** (Developmental Nutrition), **PLUS HNSC 7232**
HNSC 3250  (4) Institutional Food Service Management (HNSC 2220 and 2221 prereqs)
*HNSC 4230  (4) Community Nutrition Education (HNSC 3230 prereq); **OR** the graduate course **HNSC 7230** (Community Nutrition).
*HNSC 4211  (3) Advanced Nutrition 1 (HNSC2210, 3210, 330  prereq)
*HNSC 4212  (3) Advanced Nutrition 2 (HNSC2210, 3210, 330  prereq); the graduate courses **HNSC 7210 + 7211** can replace 4211 + 4212
HNSC 4300  (3) Organization, Administration, and Supervision of Health Services (HNSC 4230 pre- or coreq)
*HNSC 5290  (3) Seminar in Recent Trends in Nutrition (HNSC 2300, 3300, ENG 1012, HNSC 4240 pre- or coreq);

**OR HNSC 7212** (Recent Developments in Nutrition)

BIO 3003  (3) Microbiology (BIO 1002 prereq)

Once all DPD courses are completed with adequate grades students can be issued a “Verification Statement” to document completion of DPD requirements.

Prof. Roseanne Schnoll is the Director of the Dietetic Internship. For information on the DPD or DI programs please contact Susan Jakuboski, the Director of the Didactic Program in Dietetics: sjakuboski@brooklyn.cuny.edu
COURSES

HNSC 7120X Epidemiology
45 hours; 3 credits
Principles and application of epidemiological analysis, illustrations of incidence, distribution, multiple determinants, and control of disease. Methods of investigation. Sources, presentation, and interpretation of data.
Prerequisite: an introductory course in epidemiology or an equivalent course.

HNSC 7183X Health Counseling
45 hours; 3 credits
Application of principles and methods of counseling to health problems. Case studies, identification of problems, techniques of interviewing.
Prerequisite: A course in personal and community health.

HNSC 7210X Nutritional Biochemistry
45 hours; 3 credits
Emphasis on homeostatic mechanisms and hormonal controls of intermediary metabolism on a cellular level. Select topics related to the metabolic diseases and inborn errors of metabolism.
Prerequisite: a course in advanced nutrition and a course in nutritional chemistry or biochemistry or permission of the chairperson

HNSC 7211X Micronutrients
45 hours; 3 credits
Physiological regulation of metabolism of vitamins and minerals; effects of deficiencies and excesses.
Prerequisite: a course in nutrition and a course in biochemistry; or permission of the chairperson.

HNSC 7212X Evaluating Nutrition Research
45 hours; 3 credits
Critical examination of current literature and scientific research in nutrition. Impact of current nutritional developments relating to individual, family, and community well-being.
Prerequisite: Courses in biochemistry, medical nutrition therapy and statistics, or permission of the chairperson.

HNSC 7213X Human Pathophysiology
45 hours; 3 credits
Etiology, pathogenesis, and clinical manifestations of human diseases that are treated by nutritional therapies.
Prerequisite: a course in human physiology.
HNSC 7221X Cultural Aspects of Foods
45 hours; 3 credits
Foodways, the study of relationships of food and culture. Ethnic, geographic, economic, social, religious influences on food habits and practices of individuals and families.
Prerequisite: a course in food science or nutrition or permission of the chairperson.

HNSC 7230X Community Nutrition
45 hours; 3 credits
Community and public health nutrition with focus on factors affecting food consumption of a community and nutritional problems of select groups. Consumption patterns, assessment techniques, intervention programs, and evaluation of programs (federal, state, and local).
Prerequisite: a course in human nutrition and a course in life cycle, developmental or geriatric nutrition, or permission of the chairperson.

HNSC 7231X Pediatric Nutrition
45 hours; 3 credits
Effects of nutritional factors on development from prenatal growth to adolescence. Topics include: placental transport of nutrients, causes of congenital defects, breast feeding vs. bottle feeding, factors affecting rate of growth and age at puberty, effects of nutritional deficiencies and excesses, and the relationship of nutrients to morphogenetic or biochemical processes.
Prerequisite: a course in advanced nutrition and a course in physiology.

HNSC 7232X Geriatric Nutrition
45 hours; 3 credits
Recent knowledge of nutrition and human aging. Special emphasis on interactions of physiological stages, age, lifestyle, health, disease, and nutrition. Examination of research findings focusing on the relationship of nutrition to the structural and functional changes associated with the aging process.
Prerequisite: a course in nutrition or permission of the chairperson.

HNSC 7233X Nutrition and Behavior
45 hours; 3 credits
Prerequisite: one course in psychology and a course in human nutrition and a course in physiology.
HNSC 7234X Nutrition and Exercise
30 hours plus conference; 3 credits
Exploration of human nutritional requirements of exercise; the
significance of intermediary metabolic pathways and the effect of
dietary manipulation on exercise performance. (This course is the same
as PEES 7279X [779X].)
Prerequisite: a course in human or animal physiology and a course in
exercise physiology or biochemistry.

HNSC 7240X Assessment Techniques and Nutritional Care
45 hours; 3 credits
Study of the components of nutritional assessment as the initial step in
nutrition care process. Emphasis on comparative analysis of dietary
intake methods, interpretation of clinical laboratory values, evaluation of
anthropometric and body composition methods, retrieval of medical
history/physical examination data.
Prerequisite: a course in medical nutrition therapy and Health and
Nutrition Sciences 7213X.

HNSC 7241X Nutritional Aspects of Disease
45 hours; 3 credits
Changes in requirements and utilization of nutrients; nutritional status
of the individual during pathological states. Disease, malnutrition, and
environmental pollution assaults on nutrient metabolism. Methodology
and interpretation of recent clinical nutrition research.
Prerequisite: a course in medical nutrition therapy and Health and
Nutrition Sciences 7213X or permission of the chairperson.

HNSC 7931 Principles of Nutrition Research
45 hours; 3 credits
Examination of experimental design as applied to nutrition research, including
intervention, observational, survey, and animal models. Development of
research topics; methods of data collection; interpretation and presentation
of results; ethical considerations; application of principles for development of
research proposals and evaluation of the nutrition literature.
Prerequisites: advanced coursework in Nutrition and a course in Biostatistics

HNSC 7935X Research Seminar II
45 hours; 3 credits
Examination of quantitative and qualitative techniques appropriate for
research in the health sciences. Class discussions of each student’s
efforts in developing a master's thesis. (Not open to students who are
enrolled in or have completed Health and Nutrition Sciences 7940X
[791.3X] or 7950X [797.1X].)
Prerequisite: Health and Nutrition Sciences [791X] or 7930X [791.1X],
and a GPA of 3.00 (B) or better in graduate courses completed to
date.

HNSC 7999X Thesis Research
3 credits
Graduate Nutrition Courses—proposed rotation

Fall Semesters (MS)
HNSC 7120  Epidemiology
HNSC 7183  Health Counseling (odd numbered years)
HNSC 7200  Seminar in Nutrition Practice
HNSC 7202  Internship in Nutrition
**HNSC 7210  Nutritional Biochemistry**
HNSC 7212 Evaluating Nutrition Research
**HNSC 7213 Human Pathophysiology**
**HNSC 7230  Community Nutrition**
HNSC 7231 Developmental Nutrition
HNSC 7935 Research Seminar II (First part of Master's thesis sequence)
HNSC 7999 Thesis Research (Second part of Master's thesis sequence)

Spring Semesters (MS)
HNSC 7201  Seminar in Clinical Applications of Nutrition Research
HNSC 7203  Internship in Nutrition
**HNSC 7211  Micronutrients**
HNSC 7221 Cultural Aspects of Food
HNSC 7234  Nutrition and Exercise
HNSC 7240 Assessment Techniques and Nutritional Care
**HNSC 7241  Nutritional Aspects of Disease**
**HNSC 7931 Principles of Nutrition Research**
HNSC 7935  Research Seminar II (First part of Master's thesis sequence)
HNSC 7999 Thesis Research (Second part of Master's thesis sequence)

Summer Semesters (MS)
HNSC 7120  Epidemiology
HNSC 7232  Geriatric Nutrition
HNSC 7233  Nutrition and Behavior (even numbered years)

**NOTE:**

The course rotation can be changed without warning and course offerings depend on enrollment, budget, and faculty availability.