

CES U506	Health Promotion and Program Planning	4 SH
CES U508	Echocardiography	4 SH
with CES U509	Lab for CES U508	1 SH
CES U520	Exercise Physiology 2	3 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Respiratory Care

A minimum grade of C is required in all courses taken toward the minor.

REQUIRED COURSES

Complete the following three courses with corresponding lab:

CES U301	Cardiopulmonary Assessment	4 SH
CES U302	Cardiopulmonary Disease	4 SH
CES U600	Fundamentals of Respiratory Therapy	4 SH
with CES U601	Lab for CES U600	1 SH

ELECTIVE COURSE

Complete one course from the following list:

CES U604	Neonatal and Pediatric Respiratory Therapy	3 SH
CES U606	Advanced Cardiovascular Life Support	3 SH

GPA REQUIREMENT

2.000 GPA required in the minor

HEALTH SCIENCE

www.bouve.neu.edu/programs/healthsci/index.php

PATRICK F. PLUNKETT, EdD

Associate Professor and Program Director

VISITING ASSISTANT CLINICAL SPECIALIST

Ellen Glovsky, PhD

The rapidly changing health system is creating a demand for broadly educated graduates possessing a strong understanding of health, health care, and community-service related issues. Individuals with these skills are needed by public and private agencies, public health services, hospitals and other nonprofit and for-profit companies, and health-related organizations. The health science major is designed to prepare graduates to meet this critical need. The major is designed for undergraduate students who are seeking a general preparation for positions in health care, health education, health administration, and community-based public health. It is also aimed at providing students with the appropriate background and preparation for entry into graduate and professional programs including medicine, dentistry, veterinary medicine, psychology, public health, physician assistant, and social work.

The health science curriculum is an integrated model that builds upon a foundation of the social sciences, natural sciences, and the liberal arts. Health science students complete

an array of major courses that introduce them to the health-care system in the United States and provide them with the opportunity to develop a deep understanding of health policy and administration, health research, quality improvement, medical informatics, and evidence-based health care. The health science curriculum also includes a significant number of electives that enable students to enrich their intellectual lives. Students will identify a specific area of interest and use the majority of these electives to explore their declared focus. Students may use the electives to undertake a formal minor in an academic area that is related to and complements their health science studies. The entire academic experience is drawn together through a capstone project during the senior year. The capstone project is intended to provide students with a structured opportunity to broaden, deepen, and integrate the knowledge and skills acquired in prior courses and experiential activities.

BS in Health Science

Note: "TBD" stands for "to be determined."

YEAR 1

American Health Care

Complete the following course:

BHS U260	The American Health-Care System	4 SH
----------	---------------------------------	------

Freshman Seminar

Complete the following course:

BHS U100	College: An Introduction	1 SH
----------	--------------------------	------

General Biology 1 and 2

Complete the following two courses with corresponding labs:

BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH
BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH

Mathematics

Complete the following course:

MTH U121	Precalculus	4 SH
----------	-------------	------

General Chemistry 1

Complete one of the following courses with corresponding lab:

CHM U101	General Chemistry for Health Sciences	4 SH
with CHM U102	Lab for CHM U101	1 SH
CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH

General Chemistry 2

Complete one of the following courses with corresponding lab:

CHM U104	Organic Chemistry for Health Sciences	4 SH
with CHM U105	Lab for CHM U104	1 SH
CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

Foundations of Psychology

Complete the following course:

PSY U101	Foundations of Psychology	4 SH
----------	---------------------------	------

College Writing

Complete the following course with a grade of C or higher:

ENG U111	College Writing	4 SH
----------	-----------------	------

Health Sciences Seminar

Complete the following course:

COP U101 Professional Development for Co-op 1 SH

YEAR 2**Community and Public Health**

Complete the following course:

BHS U350 Community and Public Health 4 SH

Anatomy and Physiology 1 and 2

Complete the following two courses with corresponding labs:

BIO U117 Integrated Anatomy and Physiology 1 4 SH

with BIO U118 Lab for BIO U117 1 SH

BIO U119 Integrated Anatomy and Physiology 2 4 SH

with BIO U120 Lab for BIO U119 1 SH

Statistics and Software

Complete the following course:

MTH U280 Statistics and Software 4 SH

Nutrition

Complete the following course:

BHS U105 Nutrition 4 SH

Influences on Health and Illness

Complete the following course:

NUR U210 Influences on Health and Illness 3 SH

Program Elective 1

Consult with your adviser to declare a track of study and identify appropriate program electives. Complete one course in this track of study.

General Elective

Complete one general elective.

YEAR 3 (4-YEAR OPTION)**YEARS 3 AND 4 (5-YEAR CO-OP OPTION)****Advanced Writing in the Health Professions**

Complete the following course with a grade of C or higher:

ENG U306 Advanced Writing in the Health Professions 4 SH

Communications for Health Professions

Complete the following course:

BHS U300 Communication Skills for the Health Professions 4 SH

Health-Care Research

Complete the following course:

BHS U450 Health-Care Research 4 SH

Race, Ethnicity, and Health (Diversity)

Complete the following course:

BHS U520 Race, Ethnicity, and Health in the United States 4 SH

Program Electives 2–5

Complete four courses selected in consultation with your adviser as part of your declared track of study.

FINAL YEAR**Health-Care Ethics**

Complete the following course:

BHS U510 Health-Care Ethics 4 SH

Health-Care Management

Complete the following course:

BHS U511 Health-Care Management 4 SH

Health Policy

Complete the following course:

BHS U515 Health Policy 4 SH

Program Elective 6

Complete one course selected in consultation with your adviser as part of your declared track of study.

General Electives

Complete two general electives.

Health Sciences Capstone Project

Complete the following two courses:

BHS UTBD Capstone Design 1 4 SH

BHS UTBD Capstone Design 2 4 SH

HEALTH SCIENCE MAJOR GRADE REQUIREMENT

A grade of C or higher is required in all health science courses.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

135 total semester hours required

Minimum 2.000 GPA required

BS in Health Science with Premed Track*Note:* “TBD” stands for “to be determined.”**YEAR 1****American Health Care**

Complete the following course:

BHS U260 The American Health-Care System 4 SH

Freshman Seminar

Complete the following course:

BHS U100 College: An Introduction 1 SH

General Biology 1 and 2

Complete the following two courses with corresponding labs:

BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

Mathematics

Complete the following course:

MTH U141 Calculus 1 4 SH

General Chemistry 1

Complete one of the following courses with corresponding lab:

CHM U101 General Chemistry for Health Sciences 4 SH

with CHM U102 Lab for CHM U101 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

General Chemistry 2

Complete one of the following courses with corresponding lab:

CHM U104	Organic Chemistry for Health Sciences	4 SH
with CHM U105	Lab for CHM U104	1 SH
CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

Foundations of Psychology

Complete the following course:

PSY U101	Foundations of Psychology	4 SH
----------	---------------------------	------

College Writing

Complete the following course with a grade of C or higher:

ENG U111	College Writing	4 SH
----------	-----------------	------

Health Sciences Seminar

Complete the following course:

COP U101	Professional Development for Co-op	1 SH
----------	------------------------------------	------

YEAR 2**Community and Public Health**

Complete the following course:

BHS U350	Community and Public Health	4 SH
----------	-----------------------------	------

Anatomy and Physiology 1 and 2

Complete the following two courses with corresponding labs:

BIO U117	Integrated Anatomy and Physiology 1	4 SH
with BIO U118	Lab for BIO U117	1 SH
BIO U119	Integrated Anatomy and Physiology 2	4 SH
with BIO U120	Lab for BIO U119	1 SH

Statistics and Software

Complete the following course:

MTH U280	Statistics and Software	4 SH
----------	-------------------------	------

Nutrition

Complete the following course:

BHS U105	Nutrition	4 SH
----------	-----------	------

Influences on Health and Illness

Complete the following course:

NUR U210	Influences on Health and Illness	3 SH
----------	----------------------------------	------

Organic Chemistry 1 and 2

Complete the following two courses with corresponding labs:

CHM U311	Organic Chemistry 1	4 SH
with CHM U312	Lab for CHM U311	1 SH
CHM U313	Organic Chemistry 2	4 SH
with CHM U314	Lab for CHM U313	1 SH

YEAR 3 (4-YEAR OPTION)**YEARS 3 AND 4 (5-YEAR CO-OP OPTION)****Advanced Writing in the Health Professions**

Complete the following course with a grade of C or higher:

ENG U306	Advanced Writing in the Health Professions	4 SH
----------	--	------

Communications for Health Professions

Complete the following course:

BHS U300	Communication Skills for the Health Professions	4 SH
----------	---	------

Health-Care Research

Complete the following course:

BHS U450	Health-Care Research	4 SH
----------	----------------------	------

Race, Ethnicity, and Health (Diversity)

Complete the following course:

BHS U520	Race, Ethnicity, and Health in the United States	4 SH
----------	--	------

Physics 1 and 2

Complete the following two courses with corresponding labs:

PHY U145	Physics for Life Sciences 1	4 SH
with PHY U146	Lab for PHY U145	1 SH
PHY U147	Physics for Life Sciences 2	4 SH
with PHY U148	Lab for PHY U147	1 SH

Program Elective—Advanced Science

Complete one intermediate or advanced science course from the following list:

BIO U311 to BIO U699		
CHM U321	Analytical Chemistry	4 SH
with CHM U322	Lab for CHM U321	1 SH
CHM U331 to CHM U699		
GEO U300 to GEO U699		
MTH U280 to MTH U699		
PHY U303 to PHY U699		
PSY U202	Biological Basis of Mental Illness	4 SH
PSY U458	Psychobiology	4 SH
PSY U510	Psychopharmacology	4 SH

General Elective (Optional)

Complete one general elective.

FINAL YEAR**Health-Care Ethics**

Complete the following course:

BHS U510	Health-Care Ethics	4 SH
----------	--------------------	------

Health-Care Management

Complete the following course:

BHS U511	Health-Care Management	4 SH
----------	------------------------	------

Health Policy

Complete the following course:

BHS U515	Health Policy	4 SH
----------	---------------	------

Program Elective

Complete one course selected in consultation with your adviser.

General Electives

Complete two general electives.

Health Sciences Capstone Project

Complete the following two courses:

BHS UTBD	Capstone Design 1	4 SH
BHS UTBD	Capstone Design 2	4 SH

HEALTH SCIENCE WITH PREMED TRACK GRADE REQUIREMENT

A grade of C or higher is required in all health science courses.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION

If elected

UNIVERSITY-WIDE REQUIREMENTS

135 total semester hours required
Minimum 2.000 GPA required

Minor in Health Science**REQUIRED COURSES**

Complete the following six courses:

BHS U260	The American Health-Care System	4 SH
BHS U300	Communication Skills for the Health Professions	4 SH
BHS U350	Community and Public Health	4 SH
BHS U450	Health-Care Research	4 SH
BHS U510	Health-Care Ethics	4 SH
BHS U511	Health-Care Management	4 SH

GPA REQUIREMENT

2.000 GPA required in the minor

MEDICAL LABORATORY SCIENCE

www.bouve.neu.edu/Health/mls.html

MARY LOUISE TURGEON, EDD, MT(ASCP), CLS(NCA)
Acting Chair, Program Director, and Senior Clinical Specialist

ASSOCIATE PROFESSOR EMERITUS

Britta L. Karlsson, MS, MT(ASCP)

VISITING ASSISTANT CLINICAL SPECIALIST

Carol Finn, MS, MT(ASCP)

LABORATORY COORDINATOR

Judith Baronas, BS, MT(ASCP)

The Department of Medical Laboratory Science prepares professionals in the laboratory disciplines of clinical chemistry, hematology, immunohematology, immunology, and microbiology. Medical laboratory scientists (medical technologists) perform diagnostic test procedures using state-of-the-art computerized analyzers. They are responsible for overseeing patient specimen collection, and for test accuracy, cost-effectiveness, and efficiency in reporting results to physicians. Physicians rely on laboratory tests to establish a diagnosis and to determine therapy. Traditionally, the program has prepared students for positions in health-care delivery, but, through cooperative education experiences, it also offers students the opportunity to explore positions in biological, chemical, and medical research, the biotechnology industry, and governmental agencies. Many graduates enter responsible positions in these areas. The curriculum also provides excellent preparation for advanced studies in graduate and professional schools.

The five-year program leads to a Bachelor of Science degree. Students begin the experiential learning phase of the program during their sophomore year, with cooperative education placements in regional institutions. Upperclass students have the

opportunity for international placements. Recently students have had co-ops in Sweden and the United Kingdom. In their senior year, students receive formal clinical training at some of metropolitan Boston's finest health-care facilities. To enter clinical training, students must complete all prerequisite courses and maintain an acceptable grade-point average. Graduates of the Bachelor of Science program are eligible for national certification examinations as medical technologists and clinical laboratory scientists. Some states require additional licensure examinations. See pages 398–400 for course listings.

Minor Curriculum

This minor provides students majoring in other science fields an opportunity to explore the principles of the biological and chemical sciences as applied in the medical laboratory. Students may specialize in one of the five categorical areas of medical laboratory science: clinical chemistry, hematology, immunology, immunohematology, or microbiology.

Postbaccalaureate Certificate Program

The postbaccalaureate certificate program in medical laboratory science enables students with a baccalaureate degree and sufficient background in the biological and chemical sciences to become eligible for certification in clinical microbiology, clinical chemistry, hematology, immunohematology, or immunology. Depending upon the specialty, students must complete 24–26 semester hours of professional course work, which must include applied study at an affiliated clinical site. After completing the program, students may be eligible for the national certification examination in a categorical area. Completion requires twelve to twenty-four months of part-time study depending on prerequisite course work, specialty chosen, and the timing of a student's entry into the program.

BS in Medical Laboratory Science**SEMESTER 1****Biology 1**

Complete the following course with corresponding lab:

BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH

Chemistry 1

Complete the following course with corresponding lab:

CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH

Introductory English

Complete the following course with a grade of C or higher:

ENG U111	College Writing	4 SH
----------	-----------------	------

General Elective

Complete any course outside medical laboratory science.

SEMESTER 2**Biology 2**

Complete the following course with corresponding lab:

BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH

Chemistry 2

Complete the following course with corresponding lab:

CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

MLS Orientation

Complete the following course:

MLS U101	MLS Orientation	1 SH
----------	-----------------	------

Precalculus

Complete the following course:

MTH U121	Precalculus	4 SH
----------	-------------	------

General Elective

Complete any course outside medical laboratory science.

SEMESTER 3**Anatomy and Physiology 1**

Complete the following course with corresponding lab:

BIO U117	Integrated Anatomy and Physiology 1	4 SH
with BIO U118	Lab for BIO U117	1 SH

Organic Chemistry 1

Complete the following course with corresponding lab:

CHM U311	Organic Chemistry 1	4 SH
with CHM U312	Lab for CHM U311	1 SH

Lab Techniques

Complete the following course with corresponding lab:

MLS U201	Laboratory Techniques	2 SH
with MLS U202	Lab for MLS U201	1 SH

Diversity

Complete the following course:

SOA U101	Peoples and Cultures	4 SH
----------	----------------------	------

or complete a course from the list "Approved Courses: Diversity" on page 51.

SEMESTER 4**Anatomy and Physiology 2**

Complete the following course with corresponding lab:

BIO U119	Integrated Anatomy and Physiology 2	4 SH
with BIO U120	Lab for BIO U119	1 SH

Organic Chemistry 2

Complete the following course with corresponding lab:

CHM U313	Organic Chemistry 2	4 SH
with CHM U314	Lab for CHM U313	1 SH

Fundamentals of Core Lab Techniques

Complete the following course with corresponding lab:

MLS U301	Fundamentals of Core Lab Techniques	3 SH
with MLS U302	Lab for MLS U301	2 SH

Medical Immunology

Complete the following course:

MLS U315	Medical Immunology	3 SH
----------	--------------------	------

SEMESTER 5**Biochemistry**

Complete the following course with corresponding lab:

BIO U323	Biochemistry	4 SH
with BIO U324	Lab for BIO U323	1 SH

Advanced Writing in the Disciplines

Complete the following course with a grade of C or higher:

ENG U306	Advanced Writing in the Health Professions	4 SH
----------	--	------

Medical Microbiology 1

Complete the following course with corresponding lab:

MLS U505	Medical Microbiology 1	4 SH
with MLS U506	Lab for MLS U505	1 SH

Free Elective

Complete any course outside medical laboratory science.

SEMESTER 6**Research**

Complete the following course:

BHS U450	Health-Care Research	4 SH
----------	----------------------	------

Genetics

Complete the following course with corresponding lab:

BIO U301	Genetics and Molecular Biology	4 SH
with BIO U302	Lab for BIO U301	1 SH

Hematology

Complete the following course with corresponding lab:

MLS U520	Fundamentals of Hematology	4 SH
with MLS U521	Lab for MLS U520	1 SH

Clinical Chemistry

Complete the following course with corresponding lab:

MLS U530	Clinical Chemistry	4 SH
with MLS U531	Lab for MLS U530	1 SH

SEMESTER 7**Medical Microbiology 2**

Complete the following course with corresponding lab:

MLS U542	Medical Microbiology 2	2 SH
with MLS U543	Lab for MLS U542	2 SH

Immunohematology

Complete the following course with corresponding lab:

MLS U550	Immunohematology	3 SH
with MLS U551	Lab for MLS U550	1 SH

Pathophysiology

Complete the following course:

MLS U601	Pathophysiology and Clinical Correlation	3 SH
----------	--	------

Management and Education

Complete the following course:

MLS U605	Management and Education	3 SH
----------	--------------------------	------

Free Elective

Complete any course outside medical laboratory science.

SEMESTER 8**Lab Management**

Complete the following course:

MLS U606	Lab Management Applications	1 SH
----------	-----------------------------	------

Microbiology Clinical Applied Study

Complete the following course:

MLS U940	Microbiology Clinical Applied Study	4 SH
----------	-------------------------------------	------

Immunology Clinical Applied Study

Complete the following course:

MLS U941 Immunology Clinical Applied Study 2 SH

Hematology Clinical Applied Study

Complete the following course:

MLS U942 Hematology Clinical Applied Study 3 SH

Clinical Chemistry Clinical Applied Study

Complete the following course:

MLS U943 Clinical Chemistry Clinical Applied Study 4 SH

Immunohematology Clinical Applied Study

Complete the following course:

MLS U944 Immunohematology Clinical Applied Study 3 SH

GRADE REQUIREMENT

A grade of C or higher is required in all MLS courses.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION**UNIVERSITY-WIDE REQUIREMENTS**

136 total semester hours required

Minimum 2.000 GPA required

Minor in Hematology**REQUIRED COURSES**

Complete the following four courses with corresponding labs:

BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

CHM U214 General Chemistry 2 4 SH

with CHM U215 Lab for CHM U214 1 SH

MLS COURSES

Complete the following four courses with corresponding labs:

MLS U201 Laboratory Techniques 2 SH

with MLS U202 Lab for MLS U201 1 SH

MLS U301 Fundamentals of Core Lab Techniques 3 SH

with MLS U302 Lab for MLS U301 2 SH

MLS U315 Medical Immunology 3 SH

MLS U520 Fundamentals of Hematology 4 SH

with MLS U521 Lab for MLS U520 1 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Immunohematology**REQUIRED COURSES**

Complete the following four courses with corresponding labs:

BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

CHM U214 General Chemistry 2 4 SH

with CHM U215 Lab for CHM U214 1 SH

MLS COURSES

Complete the following four courses with corresponding labs:

MLS U201 Laboratory Techniques 2 SH

with MLS U202 Lab for MLS U201 1 SH

MLS U301 Fundamentals of Core Lab Techniques 3 SH

with MLS U302 Lab for MLS U301 2 SH

MLS U315 Medical Immunology 3 SH

MLS U550 Immunohematology 3 SH

with MLS U551 Lab for MLS U550 1 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Immunology**REQUIRED COURSES**

Complete the following four courses with corresponding labs:

BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

CHM U214 General Chemistry 2 4 SH

with CHM U215 Lab for CHM U214 1 SH

MLS COURSES

Complete the following six courses with corresponding labs:

MLS U201 Laboratory Techniques 2 SH

with MLS U202 Lab for MLS U201 1 SH

MLS U301 Fundamentals of Core Lab Techniques 3 SH

with MLS U302 Lab for MLS U301 2 SH

MLS U315 Medical Immunology 3 SH

MLS U505 Medical Microbiology 1 4 SH

with MLS U506 Lab for MLS U505 1 SH

MLS U550 Immunohematology 3 SH

with MLS U551 Lab for MLS U550 1 SH

MLS U941 Immunology Clinical Applied Study 2 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Medical Laboratory Chemistry**REQUIRED COURSES**

Complete the following four courses with corresponding labs:

BIO U111 General Biology 1 4 SH

with BIO U112 Lab for BIO U111 1 SH

BIO U113 General Biology 2 4 SH

with BIO U114 Lab for BIO U113 1 SH

CHM U211 General Chemistry 1 4 SH

with CHM U212 Lab for CHM U211 1 SH

CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

MLS COURSES

Complete the following three courses with corresponding labs:

MLS U201	Laboratory Techniques	2 SH
with MLS U202	Lab for MLS U201	1 SH
MLS U301	Fundamentals of Core Lab Techniques	3 SH
with MLS U302	Lab for MLS U301	2 SH
MLS U530	Clinical Chemistry	4 SH

GPA REQUIREMENT

2.000 GPA required in the minor

Minor in Microbiology

REQUIRED COURSES

Complete the following four courses with corresponding labs:

BIO U111	General Biology 1	4 SH
with BIO U112	Lab for BIO U111	1 SH
BIO U113	General Biology 2	4 SH
with BIO U114	Lab for BIO U113	1 SH
CHM U211	General Chemistry 1	4 SH
with CHM U212	Lab for CHM U211	1 SH
CHM U214	General Chemistry 2	4 SH
with CHM U215	Lab for CHM U214	1 SH

MLS COURSES

Complete the following four courses with corresponding labs:

MLS U201	Laboratory Techniques	2 SH
with MLS U202	Lab for MLS U201	1 SH
MLS U315	Medical Immunology	3 SH
MLS U505	Medical Microbiology 1	4 SH
with MLS U506	Lab for MLS U505	1 SH
MLS U542	Medical Microbiology 2	2 SH

GPA REQUIREMENT

2.000 GPA required in the minor

PHYSICAL THERAPY

www.bouve.neu.edu/programs/pt/index.php

MEREDITH H. HARRIS, EDD, PT

Associate Professor and Chair

SUSAN LOWE, MS, PT, GCS

Associate Clinical Specialist and Associate Chair

ASSOCIATE PROFESSORS

Lorna Hayward, EdD, PT

Ann C. Noonan, EdD, PT

Robert Sikes, PhD

ASSISTANT PROFESSORS

Paul Canavan, PhD, PT

Karen J. Hutchinson, PhD, PT

SENIOR CLINICAL SPECIALIST

Lawrence P. Cahalin, PT, MS, CCS

ASSOCIATE CLINICAL SPECIALISTS

Marie B. Corkery, MHS, PT, FAAOMPT

Diane F. Fitzpatrick, MS, PT

Ann C. Golub-Victor, MPH, PT, PCS

Sonya L. Larrieux, MA, PT

Jaime Paz, MS, PT

Nancy H. Sharby, MS, PT

Susan H. Ventura, MEd, PT

ASSISTANT CLINICAL SPECIALISTS

Mary J. Hickey, MHP, PT, OCS

Alycia Markowski, MS, PT, FAAOMPT

Entry-Level DPT Program

The physical therapy program prepares its graduates to provide quality patient care in a time of changing concepts, trends, and challenges. Students learn to help clients gain independence and to recognize and manage the emotional and socioeconomic problems that affect recovery. The program in physical therapy culminates at the end of six years in an entry-level Doctor of Physical Therapy (DPT) degree.

Physical therapists provide services to patients and clients who have impairments, functional limitations, disabilities, or changes in physical function resulting from injury, disease, or other causes. In addition, physical therapists are involved in wellness initiatives, including screenings, health promotions, and educational activities that promote healthy lifestyles. They perform administrative duties and direct and supervise support personnel. Physical therapists interact and practice in collaboration with a variety of health-care professionals, including, but not limited to, physicians, dentists, nurses, educators, social workers, occupational therapists, speech-language pathologists, and audiologists.

Physical therapists function in a variety of settings, including community and university hospitals; rehabilitation centers; private practices; educational settings; extended-care facilities; freestanding outpatient clinics; home health agencies; and community, state, and federal agencies.

The mission of the Department of Physical Therapy is to graduate clinically competent entry-level practitioners who are cognizant of, and sensitive to, individuals of diverse cultural and ethnic backgrounds and who can practice the art and science of the professional discipline autonomously and as part of an interdisciplinary team. An affirmation to the commitment of lifelong learning provides the basis upon which the department contributes to the advancement of physical therapy knowledge through research and scholarship. The fundamental belief of the department's faculty is the acceptance of evidence-based practice as the application of scientific evidence to inform and shape clinical practice. In the classroom, students develop problem-solving skills, manual dexterity, and proficiency with equipment and in sound biomechanical and kinesiological techniques.

At the end of the second year of study, students of physical therapy alternate semesters of academic study with semesters of cooperative education work experience. Students may be employed as physical therapy co-op students with increasing responsibilities commensurate with their academic studies, or they may perform other health-related preprofessional duties. These experiences provide an opportunity for the application and reinforcement of the lessons learned in the classroom and laboratory. Prior to graduation, students have twelve months of work experience incorporated into the academic program.

In addition to cooperative education, the program includes twenty-eight weeks of clinical education. Clinical education allows the student to practice professional skills under the supervision of a licensed physical therapist. Clinical sites across the United States, offering a wide range of specialties, participate in our clinical education program. Every effort is made to accommodate individual circumstances, but students should be prepared to travel out of state for two of the three clinical courses. Availability of a car is also required, as most sites are not accessible by public transportation. All expenses associated with clinical education, including travel and housing, are the responsibility of the student. A very small number of sites offer student incentives including stipends, meals, and housing at low or no cost to the student, but that is becoming increasingly rare.

Students are accepted into the program as freshmen or as transfer students in upper classes depending on prerequisite completion and do not need to reapply to the DPT phase of the program, provided they meet the academic standards. To progress in the program, students must maintain acceptable standards of scholarship and academic performance as stated in the academic requirements section of this catalog. Students must develop appropriate motor skills, professional behavior, and emotional maturity.

The program in physical therapy is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association.

Graduates of the Doctor of Physical Therapy (DPT) program are eligible to sit for the Physical Therapy Licensure Examination. See pages 446–450 for course descriptions.

DPT—Doctor of Physical Therapy

Note: “TBD” stands for “to be determined.”

YEAR 1

Introductory English

Complete the following course with a grade of C or higher:

ENG U111 College Writing 4 SH

Mathematics

Complete one of the following courses:

MTH U121 Precalculus 4 SH

MTH U141 Calculus 1 4 SH

Psychology

Complete the following two courses:

PSY U101 Foundations of Psychology 4 SH

PSY U404 Developmental Psychology 4 SH

Chemistry

Complete the following two courses with corresponding labs:

CHM U101 General Chemistry for Health Sciences 4 SH

with CHM U102 Lab for CHM U101 1 SH

CHM U104 Organic Chemistry for Health Sciences 4 SH

with CHM U105 Lab for CHM U104 1 SH

Free Elective

Complete any two courses outside physical therapy. Only one remedial or education course may be applied to the entire program.

YEAR 2

Professional Development

Complete the following course:

COP U101 Professional Development for Co-op 1 SH

Anatomy and Physiology

Complete the following two courses with corresponding labs:

BIO U117 Integrated Anatomy and Physiology 1 4 SH

with BIO U118 Lab for BIO U117 1 SH

BIO U119 Integrated Anatomy and Physiology 2 4 SH

with BIO U120 Lab for BIO U119 1 SH

Physics

Complete the following two courses with corresponding labs:

PHY U145 Physics for Life Sciences 1 4 SH

with PHY U146 Lab for PHY U145 1 SH

PHY U147 Physics for Life Sciences 2 4 SH

with PHY U148 Lab for PHY U147 1 SH

Statistics

Complete the following course:

MTH U280 Statistics and Software 4 SH

Physical Therapy Foundations

Complete the following three course with corresponding labs:

PTH U201 Foundation of Physical Therapy 3 SH

with PTH U202 Lab for PTH U201 1 SH

PTH U203 Human Skills Development 2 SH

PTH U204 Therapeutic Modalities 1 SH

with PTH U205 Lab for PTH U204 1 SH

Diversity

Complete the following course:

SOA U101 Peoples and Cultures 4 SH

or complete one course from the list “Approved Courses: Diversity” on page 51.

Free Elective

Complete any two courses outside physical therapy. Only one remedial or education course may be applied to the entire program.

YEAR 3

Gross Anatomy

Complete the following course with corresponding lab:

PTH U301 Gross Anatomy 4 SH

with PTH U302 Lab for PTH U301 1 SH

Kinesiology

Complete the following course with corresponding lab:

PTH U303 Kinesiology 3 SH

with PTH U304 Lab for PTH U303 1 SH

Professional Seminar 1

Complete the following course:

PTH U305 Physical Therapy Professional Seminar 1 2 SH

Psychosocial Management

Complete the following course:

PTH U404 Psychosocial Management 2 SH

Advanced Writing in the Disciplines

Complete the following course with a grade of C or higher:

ENG U306 Advanced Writing in the Health Professions 4 SH

Exercise Physiology

Complete the following course with corresponding lab:

CES U500 Exercise Physiology 1 4 SH
with CES U501 Lab for CES U500 1 SH**Pathology**

Complete the following course:

PTH U310 Pathology 4 SH

Motor Control

Complete the following course with corresponding lab:

PTH U400 Motor Control 3 SH
with PTH U402 Lab for PTH U400 1 SH**Neuroscience**

Complete the following course with corresponding lab:

PTH U308 Neuroscience 4 SH
with PTH U309 Lab for PTH U308 1 SH**YEAR 4****Health-Care Research**

Complete the following course:

BHS U450 Health-Care Research 4 SH

Pharmacology

Complete the following course:

PSC U340 Pharmacology for the Health Professions 4 SH

Cardiovascular Pulmonary Management

Complete the following course with corresponding lab:

PTH U503 Cardiovascular and Pulmonary Management 4 SH
with PTH U504 Lab for PTH U503 1 SH**Musculoskeletal Management 1**

Complete the following course with corresponding lab:

PTH U505 Musculoskeletal Management 1 4 SH
with PTH U506 Lab for PTH U505 1 SH**Integumentary System and Advanced Modalities**

Complete the following course with corresponding lab:

PTH U515 Integumentary System and Advanced Modalities 2 SH
with PTH U516 Lab for PTH U515 1 SH**Clinical Integration 1: Evidence and Practice**

Complete the following course with corresponding lab:

PTH U520 Clinical Integration 1: Evidence and Practice 2 SH
with PTH U521 Case Studies for PTH U520 1 SH**Physical Therapy Business Management**

Complete the following course:

PTH U351 Physical Therapy Business Management 2 SH

YEAR 5**Physical Therapy Project 1**

Complete the following course:

PTH U512 Physical Therapy Project 1 3 SH

Assistive Technology

Complete the following course with corresponding lab:

PTH G215 Assistive Technology 3 SH
with PTH G216 Lab for PTH G215 1 SH**Neurological Management**

Complete the following two courses with corresponding labs:

PTH U517 Neurological Management 1 4 SH
with PTH U518 Lab for PTH U517 1 SH
PTH G221 Neurological Management 2 4 SH
with PTH G222 Lab for PTH G221 1 SH**Administration**

Complete the following course:

PTH G219 Physical Therapy Administration 4 SH

Health Assessment

Complete the following course:

PTH G243 Health Assessment and Wellness 3 SH

Clinical Integration 2

Complete the following course:

PTH U527 Clinical Integration 2 3 SH

Musculoskeletal Management 2

Complete the following course with corresponding lab:

PTH G223 Musculoskeletal Management 2 4 SH
with PTH G224 Lab for PTH G223 1 SH**Physical Therapy Project 2**

Complete the following course:

PTH U533 Physical Therapy Project 2 2 SH

Professional Seminar 2

Complete the following course:

PTH U510 Physical Therapy Professional Seminar 2 2 SH

Clinical Education 1

Complete the following course:

PTH G441 Clinical Education 1 6 SH

Differential Diagnoses

Complete the following course:

PTH GTBD Differential Diagnoses 3 SH

Advanced Topics

Complete two courses from the following list:

PTH G231 to PTH G237

Graduate Elective

Complete one graduate elective.

YEAR 6**Clinical Education**

Complete the following three courses:

PTH G442 Clinical Education 2 6 SH
PTH G443 Clinical Education 3 6 SH
PTH G444 Clinical Education Integration Seminar 2 SH**Diagnostic Imaging**

Complete the following course:

PTH G251 Diagnostic Imaging 3 SH

PHYSICAL THERAPY MAJOR GRADE REQUIREMENT

A grade of C or higher is required in all PTH courses.

GENERAL ELECTIVES

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

COOPERATIVE EDUCATION**UNIVERSITY-WIDE REQUIREMENTS**

192 total semester hours required

Minimum 2.000 GPA required

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

www.bouve.neu.edu/Health/sipa.html

LINDA J. FERRIER, PhD

Associate Professor and Chair

MATTHEWS DISTINGUISHED UNIVERSITY PROFESSOR

Mary Florentine, PhD

ASSOCIATE PROFESSORS

Therese M. O'Neil-Pirozzi, ScD

Ralf W. Schlosser, PhD

ASSISTANT PROFESSOR

Rupal Patel, PhD

ASSISTANT CLINICAL SPECIALISTS

Denise J. Frankoff, MA

Marjorie North, MA

ASSOCIATE CLINICAL SPECIALISTS

Helen Anis, MS

Sandra S. Cleveland, AuD

Speech-language pathologists and audiologists are involved with the evaluation and treatment of, and counseling and research in, human communication and its disorders. The Speech-Language Pathology and Audiology program is designed to help students develop entry-level competencies that will enable them to function in a preprofessional capacity in educational settings, medical and rehabilitation centers, and private practice clinics. Students will be exposed to a wide variety of communication disorders through observation and participation in activities at the Northeastern University Speech-Language and Hearing Center. This is a state-of-the-art facility in the new Behrakis building. Alongside their graduate student mentors, students learn the basics of clinical practice and research. Externships in schools, hospitals, or other relevant settings will also broaden students' exposure and prepare them for graduate study or employment. Students may also broaden their knowledge of health-care practice by taking interdisciplinary courses with their colleagues in disciplines such as physical therapy, nursing, and pharmacy.

Speech-language pathologists and audiologists provide clinical services to a full range of communicatively impaired individuals, from infants through geriatrics. Speech-language pathologists treat disorders such as developmental language and articulation disorders, voice and resonance problems, stuttering, and language and cognitive impairments due to stroke, head injury, and progressive neurological diseases. Audiologists specialize in the prevention, identification, assessment, and rehabilitation of hearing disorders. Individuals with congenital and acquired hearing impairments are seen for services by audiologists. They prescribe and dispense hearing aids and instruct individuals in the use of amplification. Undergraduate students take courses in both speech-language pathology and audiology in preparation for advanced training and specialization at the graduate level.

The Bachelor of Science degree program in speech-language pathology and audiology includes an experiential learning component, a broad-based academic core, and the scientific and clinical course work necessary for understanding normal and disordered communication. The degree offers preprofessional training for individuals who want to pursue graduate education in speech-language pathology and audiology. Alternately, graduates may be hired as speech and hearing assistants in a variety of clinical settings, or they may pursue other career paths in health care and education.

The speech-language pathology and audiology curriculum is designed to facilitate critical thinking, information literacy, and oral and written communication skills. In addition to course work in the basic communication sciences, course work is required in education, allied health, computer literacy, ethics, multicultural/diversity issues, and psychology. The curriculum provides a solid foundation in speech-language pathology and audiology and basic sciences, and it is sufficiently flexible to provide students with the opportunity to minor in an area of related interest. By taking five courses in the standard curriculum, students may earn a minor in psychology.

A unique aspect of the speech-language pathology and audiology program is a five-year accelerated program. Students who have maintained a GPA of 3.250 or better, who have a departmental endorsement, and who have satisfied all graduate program admissions requirements may seek admission to this program in their third year. Students will, if successful, earn both a BS in speech-language pathology and audiology and an MS in speech-language pathology at the end of the program and meet national certification requirements. The accelerated program is selective and a restricted number of students are admitted each year. The graduate programs in speech-language pathology and audiology and the University's Speech-Language and Hearing Center are fully accredited by the American Speech-Language-Hearing Association. See pages 451–453 for course descriptions.

Academic Progression Standards

In order to progress from the freshman to sophomore year, the student must have a GPA of at least 1.800 and have completed 27 semester hours. In order to progress into the subsequent