

Exercise Science, MS—Online

The Department of Health Sciences offers a Master of Science in Exercise Science with two concentrations: clinical exercise physiology and physical activity and public health.

The curriculum is offered in a low-residency format with fully online courses and a four-day on-campus component for hands-on learning and training to prepare students for experiential education in the field through internship or practicum. An alternative option can be offered to students who are unable to attend the on-campus component in exceptional situations.

The exercise science core curriculum integrates key competencies for a degree in exercise science recommended by the American College of Sports Medicine, including a knowledge of exercise physiology and the assessment and development of physical activity and exercise programs for the general and clinical populations. Physical inactivity is a major public health problem and a significant risk factor for many chronic diseases, including heart disease, stroke, hypertension, metabolic syndrome, obesity, type 2 diabetes, and some types of cancer.

The clinical exercise physiology concentration provides students with the foundation and hands-on skills for patient assessment and exercise testing. It covers the principles for exercise training and patient education for behavior change. Students choosing this concentration will be given the opportunity to evaluate and develop exercise prescription for individuals and groups. The competencies offered through the clinical exercise physiology concentration are covered under the domains of clinical exercise physiologist requirements provided by ACSM.

The physical activity and public health concentration provides students with the foundation to plan, develop, implement, and evaluate primary prevention programs using exercise and physical activity in diverse populations and community settings. It also provides the foundation to understand how these programs are administered and the approaches to translate evidence-based programs in primary prevention to practice and policy.

Graduate students seeking this degree are members of the Bouvé College of Health Sciences—a leading national model for education and research in the health, psychosocial, and biomedical sciences, which supports the university's mission of educating students for a life of fulfillment and accomplishment and creating and translating knowledge to meet global and societal needs through interdisciplinary research, urban engagement, experiential learning, and the integration of classroom learning with real-world experience. Faculty in the department are exploring a range of research topics, including acute/chronic effects of exercise, community-based exercise and nutrition interventions, nutrition epidemiology, health disparities, urban public health, and the application of technology for measuring and motivating behavior change.

Two unique features of the program are:

- The program offers two concentrations of study based on student interest: clinical exercise physiology and physical activity and public health. Students take three courses in their selected concentration to enhance their specific domain knowledge. The concentrations are designed to offer students the skills and knowledge to pursue career opportunities in a variety of settings including federal/private/nonprofit institutions and clinical settings.
- The curriculum provides students the option of pursuing experiential learning opportunities through internship or practicum in the field. Experiential education is a key component of the program because application of classroom knowledge provides valuable preparation for a career in exercise science.

Please visit Bouvé College Learning Outcomes (<https://bouve.northeastern.edu/learning-outcomes/>) for the specific student learning outcomes for this program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all coursework.

Code	Title	Hours
Exercise Science		
EXSC 5200	Cardiopulmonary Physiology	3
EXSC 5210	Physical Activity and Exercise: Prescription, Measurement, and Testing ¹	3
EXSC 5220	Advanced Exercise Physiology	3
EXSC 6202	Electrocardiography, Clinical Assessment, and Prescription	3
Research		
EXSC 6400	Applied Research Methods	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210 or HLTH 5410	Biostatistics in Public Health Introduction to Statistics in Health and Behavioral Science	3

Concentrations

Choose one concentration and complete all courses and requirements unless otherwise indicated.

- Clinical Exercise Physiology (p. 2)
- Physical Activity and Public Health (p. 2)

Program Credit/GPA Requirement

30 total semester hours required

Minimum 3.000 GPA required

CONCENTRATION IN CLINICAL EXERCISE PHYSIOLOGY

Code	Title	Hours
EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease	3
EXSC 6300 or HINF 6240	Internship in Exercise Science ² Improving the Patient Experience through Informatics	3
HSCI 5230	Clinical Nutrition Applications in Health and Disease	3-4

CONCENTRATION IN PHYSICAL ACTIVITY AND PUBLIC HEALTH

Code	Title	Hours
PHTH 5540	Health Education and Program Planning	3
PHTH 6208	Urban Community Health Assessment	3
Complete 3 semester hours from the following:		3
EXSC 6966 PHTH 5000 or higher	Practicum ²	

1

Includes a required four-day on-campus experience.

2

with advisor approval an alternate 3 semester hours of graduate coursework may be substituted