

# MS IN EXERCISE SCIENCE

The department of exercise and rehabilitation sciences offers programming at the graduate level leading to the master of science in exercise science (MSES) degree. Students may choose to specialize in athletic training, exercise physiology or exercise biology. These specializations involve a combination of courses, seminars, clinical experiences, and research that is intended to prepare individuals for a wide range of careers and advanced study in exercise science and related fields.

Students applying for the MS in Exercise Science (see below for Athletic Training Concentration) need to provide:

- previous academic training: admitted students will typically have an undergraduate degree in exercise science or a closely related area with recommended coursework in human anatomy, physiology, exercise physiology and biomechanics
- academic record: applicants with an undergraduate GPA above 2.75 will be considered for admission; 3.0 in the last 60 hours of the undergraduate program is recommended
- scores on the Graduate Record Exam (GRE)
- letters of recommendation: three letters are required from individuals qualified to assess the individual's potential for success in graduate education, faculty members with specific expertise in exercise science or a closely related area are recommended
- area of study: all applicants must identify their intended area of study within the MSES program.

Admission is competitive. A selected number of students are admitted to each specialization program area depending on space.

Goals and mission statements for the students can be found at: <http://www.utoledo.edu/hhs/exercise-science/>.

## Requirements for Post-professional Athletic Training Program

Program information for the Post Professional Athletic Training Education Program can be found on our website: <http://www.utoledo.edu/hhs/athletictraining/graduate/>. Admission requirements for the academic program are as follows:

1. Graduation from a CAATE accredited professional Athletic Training Program;
2. Certification or eligibility for certification by the Board of Certification for Athletic Trainers (BOC);
3. Licensure or eligibility for Ohio Occupational Therapy, Physical Therapy and Athletic Training Board
4. Attainment of a 3.0 cumulative GPA, and a GRE score of 303 (153 verbal and 150) are preferred

Students must have verification of Hepatitis B (3 dose series), MMR, TDap/DTap, Varicella, 2 step PPD. In addition, students will need to receive a yearly influenza vaccine as well as an annual intradermal TB test. Students are required to submit to a background check on an annual

basis as required by their clinical assistantship. Students are responsible for their own transportation to their clinical sites.

Admission to the Post Professional Program is secondary to admission to the College of Graduate Studies. A clinical assistantship is provided to those students who are admitted to the program.

## Program of Study for the Master of Science in Exercise Science

The mission of the Post-Professional Athletic Training Program is to expand the depth and breadth of athletic training knowledge and skills beyond that of entry-level. The program seeks to develop clinicians that practice with a patient-centered approach in an effort to optimize the health and well-being of their patients. In addition, the program seeks to develop scholarly clinicians that are capable of providing the high-quality care necessary to contribute to the advancement of the athletic training field. In this cohort program, students are provided the opportunity to foster these skills in the classroom (36 credits) and research laboratories (thesis required), as well as during autonomous clinical education assignments. Full-time students will complete the program in two years.

Cohort program course of study required for all students (36 credit minimum)

### Program of Study for the Master of Science in Exercise Science: Concentration in athletic training

Code	Title	Hours
<b>Term 1</b>		
ATTR 6010	Clinical Applications I	1
EXSC 6720	Advanced Clinical Anatomy	2
ATTR 6910	Introduction to Sports Medicine Research I	1
ATTR 6660	Evidence-Based Practice in Sports Medicine	2
ATTR 6670	Pathology of Orthopedic Injury	3
<b>Term 2</b>		
EXSC 5110	Measurement And Statistical Inference In Human Performance	3
ATTR 6680	Advanced Interventions I	2
ATTR 6410	Clinical Biomechanics	2
ATTR 6020	Clinical Applications II	1
ATTR 6920	Introduction to Sports Medicine Research II	1
<b>Term 3</b>		
ATTR 6600	Issues And Management In Athletic Training	3
ATTR 6030	Clinical Applications III	2
EXSC 6960	Masters Thesis In Exercises Science	1-4
<b>Term 4</b>		
ATTR 6690	Advanced Interventions II	3
ATTR 6040	Clinical Applications IV	2
EXSC 6960	Masters Thesis In Exercises Science	1-4
<b>Total Hours</b>		<b>30-36</b>

### Program of Study for the Master of Science in Exercise Science: Biomechanics Specialization

*(Biomechanics Specialization is NOT currently accepting students)*

Code	Title	Hours
<b>Required Core Courses</b>		
EXSC 6100	Physiology of Exercise	3
EXSC 6130	Biomechanics Of Human Motion	3
<b>Specialization</b>		
EXSC 6200	Biomechanical Instrumentation	3
EXSC 6230	Scientific Writing And Research Methods	3
EXSC 6720	Advanced Clinical Anatomy	2
MIME 5230	Dynamics Of Human Movement	3
EXSC 6990	Independent Study in Exercise Science	1-4
<b>Required Research/Capstone Experiences</b>		
EXSC 5110	Measurement And Statistical Inference In Human Performance	3
EXSC 6960	Masters Thesis In Exercises Science	1-4
EXSC 6990	Independent Study in Exercise Science	1-4

### Program of Study for the Master of Science in Exercise Science: Exercise Physiology Specialization

(36 cr minimum)

Code	Title	Hours
<b>Required Core Courses</b>		
EXSC 6100	Physiology of Exercise	3
EXSC 6130	Biomechanics Of Human Motion	3
<b>Specialization</b>		
Select 18 credits of the following:		18
EXSC 5250	Readings In Exercise Biology	3
EXSC 6230	Scientific Writing And Research Methods	3
EXSC 6420	Cardiopulmonary Exercise Physiology	3
EXSC 6430	Environmental Physiology	3
EXSC 6460	Readings in Cardiovascular Physiology	3
EXSC 6540	Laboratory Techniques In Exercise Physiology	3
EXSC 6550	Lab Techniques In Exercise Biology	3
EXSC 6720	Advanced Clinical Anatomy	2
EXSC 6990	Independent Study in Exercise Science	1-4
<b>Required Research/Capstone Experiences</b>		
EXSC 5110	Measurement And Statistical Inference In Human Performance	3
EXSC 6960	Masters Thesis In Exercises Science	1-4

### Program of Study for the Master of Science in Exercise Science: Non-Thesis Option

(36 cr minimum)

Code	Title	Hours
<b>Required Core Courses</b>		
EXSC 6100	Physiology of Exercise	3
EXSC 6130	Biomechanics Of Human Motion	3
<b>Specialization</b>		
Select 18 credits of the following:		18
EXSC 5250	Readings In Exercise Biology	3

EXSC 6420	Cardiopulmonary Exercise Physiology	3
EXSC 6430	Environmental Physiology	3
EXSC 6460	Readings in Cardiovascular Physiology	3
EXSC 6540	Laboratory Techniques In Exercise Physiology	3
EXSC 6550	Lab Techniques In Exercise Biology	3
EXSC 6720	Advanced Clinical Anatomy	2
EXSC 6990	Independent Study in Exercise Science	1-4
<b>Required Research/Capstone Experiences</b>		
EXSC 5110	Measurement And Statistical Inference In Human Performance	3
EXSC 6990	Independent Study in Exercise Science	1-4

Conduct clinical testing related to the physical capabilities of the body and prescribe activities to improve those parameters

Demonstrate skills and abilities for laboratory and field testing in specialty area

Review literature for conducting research to include the research process including design of a research study as well as analysis and interpretation of collected data

Possess and demonstrate advanced knowledge of the psychology of human performance

Objective 1: Students will possess advanced understanding of musculoskeletal injury biomechanics

Objective 2: Students will possess advanced clinical diagnostic skills

Objective 3: Student will possess the ability to design and implement evidence-based therapeutic intervention programs

Objective 4: Student will possess the ability to effectively participate in a healthcare team

Objective 5: Student will possess the skills and abilities to critically appraise, conduct, and disseminate contemporary sports medicine research