



**Manchester**  
University

**Exercise Science Department  
Student Handbook**

**2022-2023**

## MISSION STATEMENT

The Department of Exercise Science (EXSC) is an active participant in the educational mission of Manchester University. Through undergraduate and graduate teaching, research, service, and clinical activities, the department emphasizes practical application of discipline-specific content knowledge, technological expertise, and scholarly advancement to develop young professionals in multiple health, sport, and physical activity fields.

## EXSC MAJORS AND MINORS

The Exercise Science department offers four majors and four minors.

### Majors

**Clinical and Rehabilitation Sciences:** prepares students for graduate programs in one of the exercise sciences (e.g., physical therapy, occupational therapy, athletic training, biomechanics, exercise physiology, nutrition, and fitness). It is expected that students completing this concentration will seek advanced degrees. This is also an appropriate major for those students desiring to pursue graduate study in physical or occupational therapy.

**Human Performance:** prepares students for careers in strength and conditioning and fitness (e.g. CSCS strength and conditioning coach, fitness instructor, etc). It is expected that this degree would be the terminal degree. While being educational partners with the National Strength and Conditioning Association students are prepared to take the certification examination to become a Certified Strength and Conditioning Specialist (CSCS) through the NSCA.

**Human Performance Education:** prepares students for physical education teaching and potential licensure in the state of Indiana as a physical education teacher. This major is a combination of Human Performance and Education courses. Meets all standards to sit for licensure exam for the state of Indiana.

**Nutrition Sciences:** Prepares students for a profession in nutrition sciences and/or for a master's degree in dietetics. Students have two tracks to choose from depending on the future of their profession. The RDN track will satisfy all prerequisites for a graduate degree in a dietetics program.

### Minors

**Coaching:** Chosen by students wishing to prepare for coaching at various levels within a community. Scientific, psychological and administrative principles are presented that focus on appropriate coaching behaviors with young people.

**Medical Health Education and Sales:** Chosen by students preparing for a profession in orthopedic or health sales. Examples: Zimmer Biomet, Depuy, Medtronic, etc. These students are interested in the background of orthopedics with an emphasis in sales and marketing orthopedic products.

**Orthopedic Studies:** Prepares and supports students with a profession in clinical orthopedic setting. This position is focused on medical assisting in an environment with orthopedic specialists such as PA's, NP's, MD's and DO's.

**Nutrition Sciences:** Prepares and supports students with a profession in the health field. This minor will support students that want a background in nutrition without pursuing the major in nutrition sciences.

## **SPECIFIC MAJOR INFORMATION**

### **Clinical and Rehabilitation Objectives**

#### **Learning Objectives**

Upon completing the requirements for this major, students should be able to:

Demonstrate knowledge of:

- Normal structure and function of the human body
- Typical acute and chronic adaptations of the body to exercise
- Nutritional concepts as they effect the exercising human
- Administrative principles associated with health and fitness organizations, including facility design, human resources, budgeting, and risk management
- Fundamental concepts of inorganic chemistry
- Accepted research procedures in human performance
- Statistical concepts as applied to human performance

Demonstrate skill in:

- Accurate measurement of various physiological parameters (e.g. oxygen consumption, body composition, blood pressure)
- Accurately and critically interpreting relevant research in human performance

### **Academic Advising**

During a student's first year they will be assigned to a success advisor as well as an academic advisor in their department or specialty. The department chair of the EXSC department will place each student with a department advisor initially. Any student can change advisors through the registrar office if the student has the permission of the new advisor the student is choosing.

Academic advising is a very important process. Good advising helps ensure that you're meeting your major and CORE or LARC requirements, and thereby assists you in graduating on time. Meet with your advisor frequently, make appointments well in advance of deadlines, keep those appointments, and most importantly, **DO NOT BE AFRAID TO APPROACH YOUR ACADEMIC ADVISOR WITH QUESTIONS!** If you are struggling academically, your academic advisor is one person you can talk with.

**DEPARTMENT OF EXERCISE SCIENCE AND ATHLETIC TRAINING  
CLINICAL AND REHABILITATION SCIENCES**

**Clinical and Rehabilitation Sciences (55 Semester Hours)**

BIOL 202	Fundamentals of Human Anatomy	(3)	_____
BIOL 202L	Fundamentals of Human Anatomy Lab	(1)	_____
BIOL 204	Fundamentals of Human Physiology	(3)	_____
BIOL 204L	Fundamentals of Human Physiology	(1)	_____
DATA 210	Statistical Analysis with Lab	(4)	_____
EXSC 106	Medical Terminology	(1)	_____
EXSC 101	Introduction to Rehabilitation Sciences	(3)	_____
EXSC 255	Orthopedic Evaluation	(3)	_____
EXSC 355	Orthopedic Intervention	(3)	_____
EXSC 325	Exercise Physiology	(3)	_____
EXSC 325L	Exercise Physiology Lab	(1)	_____
EXSC 410	Administration of Health and Physical Activity Programs	(3)	_____
EXSC 476	Internship in Health/Fitness/Wellness	(3)	_____
NUTR 210	Introduction to Human Nutrition	(3)	_____

**Two semesters of Chemistry w/Lab**

CHEM 105	Introduction to Inorganic Chemistry	(3)	_____
CHEM 105L	Introduction to Inorganic Chemistry Lab	(1)	_____
CHEM 106	Introduction to Organic Chemistry	(3)	_____
CHEM 106L	Introduction to Organic Chemistry Lab	(1)	_____

**OR**

CHEM 111	General Chemistry I	(3)	_____
CHEM 111L	General Chemistry I Lab	(1)	_____
CHEM 113	General Chemistry II	(3)	_____
CHEM 113L	General Chemistry II Lab	(1)	_____

**Directed Electives (Advisor Approval)** (12) \_\_\_\_\_

_____	_____	( )	_____
_____	_____	( )	_____
_____	_____	( )	_____

**Total Hours: 55 Semester Hours**

# Clinical and Rehabilitation Sciences Major

## Concentration: Pre-Physical Therapy

### Year 1

EXSC 101 Introduction to Rehabilitation Sciences	3
EXSC 106 Medical Terminology	1
BIO 202/L Fundamentals of Human Anatomy w/Lab	4
NUTR 210 Introduction to Human Nutrition	3
<b>Total Credit Hours</b>	<b>11</b>

### Year 2

BIOL 204/L Fundamentals of Human Physiology w/Lab	4
CHEM 111/L General Chemistry I w/Lab	4
CHEM 113/L General Chemistry II w/Lab	4
EXSC 255 Orthopedic Evaluation	3
PSYCH 224/L Developmental Psychology w/Lab ( <b>Direct Elective</b> )	4
<b>Total Credit Hours</b>	<b>19</b>

### Year 3

EXSC 325/L Exercise Physiology w/Lab	4
EXSC 355 Orthopedic Intervention	3
PHYS 111/L College Physics I w/Lab ( <b>Direct Elective</b> )	4
PHYS 112/L College Physics II w/Lab ( <b>Direct Elective</b> )	4
DATA 210 Statistical Analysis w/Lab	4
<b>Total Credit Hours</b>	<b>19</b>

### Year 4

EXSC 410 Administration in Health Care	3
EXSC 476 Internship	3

<b>Total Credit Hours</b>	<b>6</b>
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<b>Total Credit Hours for Pre-PT</b>	<b>55</b>
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\*Additional Courses May be needed

- General Biology: BIO 104 or 106
- Abnormal Psychology: PSYCH 225 w/Lab

# Clinical and Rehabilitation Sciences Major

## Concentration: Pre-Athletic Training

### Year 1

ESAT 103 Foundations of Physical Education and Sport Sciences	2
BIO 104 Human Health OR BIO 106 Principles of Biology <b>(Direct Elective)/Prerequisite)</b>	3
BIO 202/L Fundamentals of Human Anatomy w/Lab	4
<b>Total Credit Hours</b>	<b>9</b>

### Year 2

NUTR 210 Introduction to Human Nutrition	3
ESAT 243 Principles of Fitness <b>(Direct Elective)/Prerequisite)</b>	3
BIOL 204/L Fundamentals of Human Physiology w/Lab	4
<b>Total Credit Hours</b>	<b>10</b>

### Year 3

ESAT 325/L Exercise Physiology w/Lab	4
ESAT 345 Functional Kinesiology <b>(Direct Elective)/Prerequisite)</b>	3
CHEM 105/L Introduction to Inorganic Chemistry w/Lab	4
CHEM 106/L Introduction to Organic Chemistry w/Lab	4
DATA 210 Statistical Analysis w/Lab	4
<b>Total Credit Hours</b>	<b>19</b>

### Year 4

ESAT 410 Administration in Health Care	3
ESAT 476 Internship	3
BIOL 422/L Advanced Physiology w/Lab	4
PHYS 111 College Physics w/Lab <b>(Direct Elective/Prerequisite)</b>	4
<b>Total Credit Hours</b>	<b>14</b>

**\*Additional +1 Credit due to Prerequisites Needed for Pre-AT Enrollment**

# Clinical and Rehabilitation Sciences Major Concentration: Pre-Occupational Therapy

## Year 1

EXSC 101 Introduction to Rehabilitation Sciences	3
EXSC 106 Medical Terminology	1
BIO 104 Human Health OR BIO 106 Principles of Biology (Direct Elective)/Prerequisite)	3
BIO 202/L Fundamentals of Human Anatomy w/Lab	4
NUTR 210 Introduction to Human Nutrition	3
<b>Total Credit Hours</b>	<b>14</b>

## Year 2

BIOL 204/L Fundamentals of Human Physiology w/Lab	4
EXSC 255 Orthopedic Evaluation	3
CHEM 105/L Introduction to Inorganic Chemistry w/Lab	4
CHEM 106/L Introduction to Organic Chemistry w/Lab	4
PSYCH 224/L Developmental Psychology w/Lab (Direct Elective/Prerequisite)	4
<b>Total Credit Hours</b>	<b>19</b>

## Year 3

EXSC 355 Orthopedic Intervention	3
EXSC 325/L Exercise Physiology w/Lab	4
DATA 210 Statistical Analysis w/Lab	4
PSYCH 225/L Abnormal Psychology w/Lab (Direct Elective/Prerequisite)	4
<b>Total Credit Hours</b>	<b>15</b>

## Year 4

EXSC 410 Administration in Health Care	3
EXSC 476 Internship	3
<b>Total Credit Hours</b>	<b>6</b>

<b>Total Credit Hours for Pre-OT</b>	<b>54</b>
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\*Additional courses may be needed to meet prerequisites

- College Physics: PHYS 111/L (4cr)
- Biomechanics or Kinesiology: EXSC 345 (3cr)

\*One additional credit must be identified to complete the directed elective and major requirements.

## **Exercise Science Club**

The Exercise Science Club is a student organization designed to promote a departmental identification for students and to provide a forum for exchange of information related to the exercise science disciplines. Evening meetings are held monthly, last about an hour, and usually feature an outside guest speaker from an exercise science-related field. Attendance is strongly encouraged, but not required. Club activities include several social events throughout the year. The club affords leadership opportunities for students. You will receive e-mails announcing the meetings and posters are placed around campus.

## **Internships**

A 3-credit internship is required in the major and is typically completed in the summer between the junior and senior years or in January Session of the senior year. Although faculty members can assist you in securing an internship, the ultimate responsibility is yours. There are forms to fill out and sign, objectives to be designed, and deadlines to meet BEFORE you can even enroll in an internship, so you are advised to work well in advance of the proposed internship semester and to work closely with your academic advisor on the process.

## **Midpoint Academic Review**

In December or January of your sophomore year, you will be asked to make an appointment to meet with your academic advisor and one other EXSC faculty member to assess your academic progress to that point. Your educational goals and career objectives will be discussed, as well as your academic performance. You will have an opportunity to ask any questions about your program and your discipline. Each student must complete this process before the Election of Major form is signed by the Department Chair. An electronic "EOM" is required before registering for your junior year classes.

# **SPECIFIC MAJOR INFORMATION**

## **Human Performance**

### **LEARNING OBJECTIVES**

Upon completing the requirements for this major, students should be able to:

Demonstrate knowledge of:

- Normal structure and function of the human body
- Typical acute and chronic adaptations of the body to exercise
- Nutritional concepts as they effect the exercising human
- Administrative principles associated with health and fitness organizations, including facility design, human resources, budgeting, and risk management
- Principles of biomechanics as applied to the human body
- Appropriate exercise prescription based on client objectives, physical condition, and available resources
- Appropriate techniques for teaching of exercises designed to enhance fitness

Demonstrate skill in:

- Accurate measurement of various physiological parameters (e.g. flexibility, heart rate, body composition, blood pressure)
- Performing accurate biomechanical analysis of human movement
- Prescribing appropriate exercise based on client objectives, physical condition, and available resources, including progression or regression of intensity, frequency, duration, and mode of exercise
- Teaching appropriate exercise techniques to clients

### **Academic Advising**

During a student's first year they will be assigned to a success advisor as well as an academic advisor in their department or specialty. The department chair of the EXSC department will place each student with a department advisor initially. Any student can change advisors through the registrar office if the student has the permission of the new advisor the student is choosing.

Academic advising is a very important process. Good advising helps ensure that you're meeting your major and CORE requirements, and thereby assists you in graduating on time. Meet with your advisor frequently, make appointments well in advance of deadlines, keep those appointments, and most importantly, **DO NOT BE AFRAID TO APPROACH YOUR ACADEMIC ADVISOR WITH QUESTIONS!** If you are struggling academically, your academic advisor is one person you can talk with.

**DEPARTMENT OF EXERCISE SCIENCE AND ATHLETIC TRAINING  
HUMAN PERFORMAMNCE**

**Human Performance Major (51 Semester Hours)**

BIOL 202	Fundamentals of Human Anatomy	(3)	_____
BIOL 202L	Fundamentals of Human Anatomy Lab	(1)	_____
BIOL 204	Fundamentals of Human Physiology	(3)	_____
BIOL 204L	Fundamentals of Human Physiology	(1)	_____
EXSC 101	Introduction to Rehabilitation Sciences	(3)	_____
EXSC 205	Team Performance Training	(3)	_____
EXSC 206	Individual and Dual Performance Training	(3)	_____
EXSC 209	Principles of Coaching	(3)	_____
EXSC 243	Principle of Fitness	(3)	_____
EXSC 250	Performance Training Lab I	(1)	_____
EXSC 260	Performance Training Lab II	(1)	_____
EXSC 276	Practicum in Health/Fitness/Wellness	(2)	_____
EXSC 325	Exercise Physiology	(3)	_____
EXSC 325L	Exercise Physiology Lab	(1)	_____
EXSC 339	Fundamental Technique of Exercise & Fitness	(3)	_____
EXSC 345	Functional Kinesiology	(3)	_____
EXSC 410	Administration of Health and Physical Activity Programs	(3)	_____
EXSC 476	Internship in Health/Fitness/Wellness	(4)	_____
NUTR 210	Introduction to Human Nutrition	(3)	_____

**Directed Electives (Consult with advisor & Dept Chair Approval)** (4) \_\_\_\_\_

\_\_\_\_\_ ( ) \_\_\_\_\_  
 \_\_\_\_\_ ( ) \_\_\_\_\_  
 \_\_\_\_\_ ( ) \_\_\_\_\_

**Total Hours: 51 Semester Hours**

# Human Performance Major

## Human Performance Major Curriculum Map (Major Courses Only)

### Year 1

EXSC 101 Introduction to Rehabilitation Sciences	3
BIO 202/L Fundamentals of Human Anatomy w/Lab	4
<b>Total Credit Hours</b>	<b>7</b>

### Year 2

EXSC 205 Team Performance Training	3
EXSC 250 Performance Lab I	1
EXSC 206 Individual and Dual Performance Training	3
EXSC 260 Performance Training Lab II	1
EXSC 243 Principles of Fitness	3
BIOL 204/L Fundamentals of Human Physiology w/Lab	4
<b>Total Credit Hours</b>	<b>15</b>

### Year 3

NUTR 210 Introduction to Human Nutrition	3
EXSC 209 Principles of Coaching	3
EXSC 325/L Exercise Physiology w/Lab	4
EXSC 339 Fundamental Technique of Exercise & Fitness	3
EXSC 345 Functional Kinesiology	3
<b>Total Credit Hours</b>	<b>16</b>

### Year 4

EXSC 410 Administration in Health Care	3
EXSC 276 Practicum	2
EXSC 476 Internship	4
HP Elective	4
<b>Total Credit Hours</b>	<b>13</b>

## **Exercise Science Club**

The Exercise Science Club is a student organization designed to promote a departmental identification for students and to provide a forum for exchange of information related to the exercise science disciplines. Evening meetings are held monthly, last about an hour, and usually feature an outside guest speaker from an exercise science-related field. Attendance is strongly encouraged, but not required. Club activities include several social events throughout the year. The club affords leadership opportunities for students. You will receive e-mails announcing the meetings and posters are placed around campus.

## **Practicum & Internship**

A 2-credit practicum and 4-credit internship are required in the major and is a crucial component to one's professional development. It is during this internship that the skills learned in the classroom are applied to actual clients. The internship is typically completed in the Spring Semester of the senior year. Although faculty members can assist you in securing an internship, the ultimate responsibility is yours. There are forms to fill out and sign, objectives to be designed, and deadlines to meet BEFORE you can even enroll in an internship, so you are advised to work well in advance of the proposed internship semester and to work closely with your academic advisor on the process.

## **Midpoint Academic Review**

In December or January of your sophomore year, you will be asked to make an appointment to meet with your academic advisor and one other EXSC faculty member to assess your academic progress to that point. Your educational goals and career objectives will be discussed, as well as your academic performance. You will have an opportunity to ask any questions about your program and your discipline. Each student must complete this process before the Election of Major form is signed by the Department Chair. An electronic "EOM" is required before registering for your junior year classes.

**DEPARTMENT OF EXERCISE SCIENCE AND ATHLETIC TRAINING  
HUMAN PERFORMAMNCE EDUCATION**

**Human Performance Education (83 Semester Hours)**

BIOL 202	Fundamentals of Human Anatomy	(3)	_____
BIOL 202L	Fundamentals of Human Anatomy Lab	(1)	_____
BIOL 204	Fundamentals of Human Physiology	(3)	_____
BIOL 204L	Fundamentals of Human Physiology Lab	(1)	_____
EXSC 101	Introduction to Rehabilitation Sciences	(3)	_____
EXSC 205	Team Performance Training	(3)	_____
EXSC 206	Individual and Dual Performance Training	(3)	_____
EXSC 209	Principles of Coaching	(3)	_____
EXSC 243	Principles of Fitness	(3)	_____
EXSC 250	Performance Lab I	(1)	_____
EXSC 260	Performance Lab II	(1)	_____
EXSC 325	Exercise Physiology	(3)	_____
EXSC 325L	Exercise Physiology Lab	(1)	_____
EXSC 339	Fundamental Technique of Exercise and Fitness	(3)	_____
EXSC 345	Functional Kinesiology	(3)	_____
EXSC 410	Administration of Health and Physical Activity Programs	(3)	_____
NUTR 210	Introduction to Human Nutrition	(3)	_____

**Directed Electives (Advisor & Chair Approval)** (4) \_\_\_\_\_

\_\_\_\_\_ ( ) \_\_\_\_\_  
 \_\_\_\_\_ ( ) \_\_\_\_\_

EDUC 111	Exploring Teaching and Learning	(3)	_____
EDUC 212	The Exceptional Learner	(3)	_____
EDUC 230	Educational Psychology	(3)	_____
EDUC 240	Educational Assessment	(3)	_____
EDUC 343	Literacy in the Content Areas	(3)	_____
EDUC 353	Class Management/Conflict Resolution	(3)	_____
EDUC 362	Literacy and English Language Learner	(2)	_____
EDUC 410	The Teacher in Today's School	(2)	_____
EDUC 440	General Methods for Adolescent Learners	(3)	_____
EDUC 475	High School Student Teaching	(7)	_____
EDUC 479	Junior High/Middle School Student Teaching	(6)	_____

(Note: Student Teaching substitutes for EXSC 276 Practicum/476 Internship)

**Total Degree Hours: 83 Semester Hours**

# Human Performance Education Major

## 81 Credit Hours

### Human Performance Education Major Curriculum Map (Major Courses Only)

#### Year 1

EXSC 101 Introduction to Rehabilitation Sciences	3
BIO 202/L Fundamentals of Human Anatomy w/Lab	4
EDUC 111 Explore Teaching/Learning	3
EDUC 212 Exceptional Learner	3
<b>Total Credit Hours</b>	<b>13</b>

#### Year 2

EDUC 230 Educational Psychology	3
EDUC 240 Educational Assessment	3
EXSC 205 Team Performance Training	3
EXSC 250 Performance Lab I	1
EXSC 206 Individual and Dual Performance Training	3
EXSC 260 Performance Training Lab II	1
EXSC 243 Principles of Fitness	3
BIOL 204/L Fundamentals of Human Physiology w/Lab	4
<b>Total Credit Hours</b>	<b>21</b>

#### Year 3

EDUC 362 Literacy/English Language Learners	2
EDUC 343 Literacy/Content Area	3
EXSC 209 Principles of Coaching	3
EXSC 325/L Exercise Physiology w/Lab	4
EXSC 339 Fundamental Technique of Exercise & Fitness	3
EXSC 345 Functional Kinesiology	3
NUTR 210 Introduction to Human Nutrition	3
<b>Total Credit Hours</b>	<b>21</b>

#### Year 4

EDUC 353 Classroom Management/Conflict Resolution	3
EDUC 440 General Methods for Adolescent Learners	3
EDUC 410 Teacher in Today's School	2
EDUC 475 High School Student Teaching	7
EDUC 479 Junior High/Middle School Student Teaching	6
EXSC 410 Administration of Health Care	3
HP Elective	4
<b>Total Credit Hours</b>	<b>28</b>

## **Exercise Science Club**

The Exercise Science Club is a student organization designed to promote a departmental identification for students and to provide a forum for exchange of information related to the exercise science disciplines. Evening meetings are held monthly, last about an hour, and usually feature an outside guest speaker from an exercise science-related field. Attendance is strongly encouraged, but not required. Club activities include several social events throughout the year. The club affords leadership opportunities for students. You will receive e-mails announcing the meetings and posters are placed around campus.

## **Practicum & Internship**

A 2-credit practicum and 4-credit internship are required in the major and is a crucial component to one's professional development. It is during this internship that the skills learned in the classroom are applied to actual clients. The internship is typically completed in the Spring Semester of the senior year. Although faculty members can assist you in securing an internship, the ultimate responsibility is yours. There are forms to fill out and sign, objectives to be designed, and deadlines to meet BEFORE you can even enroll in an internship, so you are advised to work well in advance of the proposed internship semester and to work closely with your academic advisor on the process. As noted in the curriculum the Human Performance practicum and internship are substituted when a student is in student teaching. If a student is unable to do student teaching the practicum and internship for human performance will be required.

## **Midpoint Academic Review**

In December or January of your sophomore year, you will be asked to make an appointment to meet with your academic advisor and one other EXSC faculty member to assess your academic progress to that point. Your educational goals and career objectives will be discussed, as well as your academic performance. You will have an opportunity to ask any questions about your program and your discipline. Each student must complete this process before the Election of Major form is signed by the Department Chair. A signed "EOM" is required before registering for your junior year classes.