

# Exercise Science

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The Exercise Science Department is an interdisciplinary program that prepares students for allied health, human movement, and physical education career opportunities. Coursework in the major that contributes to the understanding of human movement includes:

- biomechanics
- exercise physiology
- motor learning and development
- nutrition

The program is augmented by foundational courses in:

- anatomy
- physiology
- psychology
- biology
- chemistry
- physics

Many of the careers associated with a degree in exercise science require additional education, certification, or licensure beyond an undergraduate degree. As such, upon graduation, students are prepared to enter additional educational programs in:

- medicine
- physical therapy
- athletic training/sports medicine
- exercise physiology
- biomechanics
- fitness management
- nutrition
- teaching physical education
- other health and movement related fields

## Bachelor of Science in Exercise Science

The Exercise Science Department offers three emphasis areas for the Bachelor of Science degree:

1. Health Professions
2. Human Performance
3. Pedagogy/Teaching Physical Education

The Exercise Science Department emphasizes a “hands on” approach to learning with laboratory experiences for many of its courses. In addition, the Department is committed to undergraduate research as a key element of the academic experience. Students are exposed to research throughout the program, culminating in an independent research project in their terminal experience. Students are encouraged to participate in internships and volunteer throughout the community in venues relating to their particular emphasis and future professional aspirations.

## Course Requirements by Emphasis Area

### Health Professions

63-66 credits minimum, 23-25 credits upper division.

EXSC 201/201L	Functional Anatomy and Functional Anatomy Lab <sup>1</sup>	4
EXSC 202/202L	Exercise Physiology and Exercise Physiology Lab <sup>1</sup>	4
EXSC 301/301L	Biomechanics and Biomechanics Lab	4
EXSC 302	Motor Development Across a Life Span	3
EXSC 494	Capstone	2
BIOL 120	Introduction to Ecology and Populations	3
BIOL 121	Introduction to Cells and Organisms	3
BIOL 123L	Intro Biol Experimentation I	2

BIOL 124L	Intro Biol Experimentation II	2
CHEM 151	General Chemistry	4
CHEM 151L	General Chemistry Lab	1
CHEM 152	General Chemistry II	4
CHEM 152L	General Chemistry II Lab	1
Select one of the following:		4-5
PHYS 201/201L	Mechanics and Thermodynamics-Algebra and Mechanics and Thermodynamics-Algebra Lab	
PHYS 211/211L	Mechanics and Thermodynamics-Calculus and Mechanics and Thermodynamics-Lab	
Select one of the following:		4-5
PHYS 202/202L	Electricity, Magnetism, Optics -Algebra and Electricity, Magnetism, Optics - Lab	
PHYS 212/212L	Electricity, Magnetism, and Optics -yCalculus and Electricity, Magnetism Optics - Lab (Select one of the following:)	
PSYC 222	Abnormal Psychology	4
EXSC 300	Exercise Prescription	3
EXSC 325	Stats & Research Methods Exsc Science	4
Select two of the following: *		8
BIOL 361/361L	Microbiology and Microbiology Lab	
CHEM 331/341	Organic Chemistry and Organic Chemistry Lab	
CHEM 425/425L	Biochemistry and Biochemistry Lab	
EXSC 340	Motor Learning and Control	
EXSC 401/401L	Advanced Biomechanics and Advanced Biomechanics Lab	
EXSC 470/470L	Advanced Exercise Physiology and Advanced Exercise Physiology Laboratory	
EXSC 487	Clinical Exercise Prescription	
PSYC 304	Child and Adolescent Development	
PSYC 305	Adult Development and Aging	
PSYC 331	Physiological Psychology	
Total Hours		64-66

\* Two additional courses chosen in consultation with an adviser.

### Required Supporting Courses

Support courses are those courses from outside the department that fulfill foundational knowledge requirements (prerequisites) for students in Exercise Science.

BIOL 223/223L	Human Anatomy and Human Anatomy Lab	4
BIOL 224/224L	Human Physiology and Human Physiology Lab	4
PSYC 200	General Psychology	4
Total Hours		12

<sup>1</sup> BIOL 223 and BIOL 224 (Anatomy and Physiology) are prerequisites for EXSC 201 (Functional Anatomy) and EXSC 202 (Exercise Physiology). Students are advised to take Anatomy and Physiology as early as possible in their course sequence.

### Human Performance

60 credits minimum, 38 credits upper division.

EXSC 201/201L	Functional Anatomy and Functional Anatomy Lab <sup>1</sup>	4
EXSC 202/202L	Exercise Physiology and Exercise Physiology Lab <sup>1</sup>	4
EXSC 301/301L	Biomechanics and Biomechanics Lab	4
EXSC 302	Motor Development Across a Life Span	3
EXSC 494	Capstone	2
EXSC 300	Exercise Prescription	3
EXSC 303	Nutrition	3
EXSC 325	Stats & Research Methods Exsc Science	4
EXSC 340	Motor Learning and Control	4
EXSC 401/401L	Advanced Biomechanics and Advanced Biomechanics Lab	4

EXSC 470/470L	Advanced Exercise Physiology and Advanced Exercise Physiology Laboratory	4
EXSC 480	Social Psychology of Sport	4
EXSC 487	Clinical Exercise Prescription	3
CHEM 151	General Chemistry	4
CHEM 151L	General Chemistry Lab	1
CHEM 152	General Chemistry II	4
CHEM 152L	General Chemistry II Lab	1
Select one of the following:		4-5
PHYS 201/201L	Mechanics and Thermodynamics-Algebra and Mechanics and Thermodynamics-Algebra Lab	
PHYS 211/211L	Mechanics and Thermodynamics-Calculus and Mechanics and Thermodynamics-Lab	
Total Hours		60-61

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Support courses are those courses from outside the department that fulfill foundational knowledge requirements (prerequisites) for students in Exercise Science.

BIOL 223/223L	Human Anatomy and Human Anatomy Lab	4
BIOL 224/224L	Human Physiology and Human Physiology Lab	4
MATH 151	Precalculus	4
PSYC 200	General Psychology	4
Total Hours		16

<sup>1</sup> BIOL 223 and BIOL 224 (Anatomy and Physiology) are prerequisites for EXSC 201 (Functional Anatomy) and EXSC 202 (Exercise Physiology). Students are advised to take Anatomy and Physiology as early as possible in their course sequence.

### Pedagogy/Teaching

59 credits minimum, 38 credits upper division.

EXSC 201/201L	Functional Anatomy and Functional Anatomy Lab <sup>1</sup>	4
EXSC 202/202L	Exercise Physiology and Exercise Physiology Lab <sup>1</sup>	4
EXSC 301/301L	Biomechanics and Biomechanics Lab	4
EXSC 302	Motor Development Across a Life Span	3
EXSC 494	Capstone	2
EXSC 203	Prevention and Care of Athletic Injuries	3
EXSC 251	Individual & Dual Sports & Activities	2
EXSC 252	Team Sports	2
EXSC 253	Aquatic and Rhythmic Activities	2
EXSC 254	Combative and Outdoor Activities	2
EXSC 300	Exercise Prescription	3
EXSC 352	Adaptive Physical Education	3
EXSC 353	Field Observations	2
EXSC 354	Elementary School Physical Education	4
EXSC 355	Secondary School Physical Education	4
EXSC 450	History & Principles Physical Education	3
EXSC 451	Organization and Administration	3
EXSC 452	Measurement & Eval in Physical Educ	3
EXSC 480	Social Psychology of Sport	4
Activity Courses *		2
Total Hours		59

\* A minimum of two activity courses for this emphasis must be taken.

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BIOL 223/223L	Human Anatomy and Human Anatomy Lab	4
BIOL 224/224L	Human Physiology and Human Physiology Lab	4
PSYC 200	General Psychology	4
Total Hours		12

<sup>1</sup> BIOL 223 and BIOL 224 (Anatomy and Physiology) are prerequisites for EXSC 201 (Functional Anatomy) and EXSC 202 (Exercise Physiology). Students are advised to take Anatomy and Physiology as early as possible in their course sequence.