

# BACHELOR OF SCIENCE IN APPLIED SCIENCE EXERCISE SCIENCE - GRADUATE TRACK

**Program Director:** Garrett Kellar (ggkellar@ysu.edu)

Exercise Science is a growing field with job opportunities upon graduation in areas such as cardiac rehabilitation, pulmonary rehabilitation, worksite or corporate wellness, strength and conditioning from youth sports to elite athlete levels, campus and park recreation as well as personal training.

Many students who select Exercise Science as their major do so because they are interested in working in the health care field but do not know specifically what they want to be when they graduate from a 4 year program. Exercise Science is a great major that allows flexibility in a post-graduate career because the undergraduate work focuses so much on the human body. Because of this, many of our students in Exercise Science find themselves able to apply to a wide variety of graduate study programs such as Athletic Training, Physical Therapy, Occupational Therapy, Chiropractic School, Physician Assistant Programs, and Medical School.

These graduate programs typically require advanced sciences as prerequisites. For that reason, we offer a second track for Exercise Science majors who know graduate school is for them. This track heavily emphasizes the sciences, requiring 4 Biology, 2 Chemistry and 2 Physics courses. While science prerequisites will vary from graduate program to graduate program and even from state to state, the courses in this track have successfully prepared many of our previous students for entry to graduate school. We strongly suggest, however, that the student aligns their courses with the prerequisites of graduate program of their choice. Such prerequisites can typically be found on the graduate program website or by calling the graduate program director of the respective program.

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COURSE	TITLE	S.H.
<b>FIRST YEAR REQUIREMENT -STUDENT SUCCESS</b>		
YSU 1500	Success Seminar	1-2
or SS 1500	Strong Start Success Seminar	
or HONR 1500	Intro to Honors	
<b>General Education Requirements</b>		<b>9</b>
ENGL 1550	Writing 1	
ENGL 1551	Writing 2	
CMST 1545	Communication Foundations	
<b>Mathematics Requirement</b>		<b>5-7</b>
MATH 1513	Algebra and Transcendental Function	
or MATH 1511	College Algebra and Trigonometry	
& MATH 1511		
Arts and Humanities (2 courses)		6
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4
PHYS 1501	Fundamentals of Physics 1	4
PHYS 1501L	Fundamentals of Physics Laboratory 1	1
Social Science (1 course)		3
PSYC 1560	General Psychology	3
Social & Personal Awareness (1 course)		3
FNUT 1551	Normal Nutrition	3
<b>Major Required Courses</b>		
KSS 1595	Introduction to Kinesiology and Sport Science (FYE course)	2

KSS 1559	Aerobic Conditioning Activities	1
KSS 1560	Resistance Training	2
HPES 15XX Activity Elective		1
KSS 2605	Sports First Aid and Injury Prevention	3
KSS 2625	Pedagogical Aspects of Exercise Science	3
STAT 2625	Statistical Literacy and Critical Reasoning	4
KSS 3700	Exercise Evaluation and Testing	4
KSS 3710	Physiology of Exercise	4
KSS 3710L	Physiology of Exercise Laboratory	1
KSS 3720	Kinesiology and Applied Anatomy	4
KSS 3730	Exercise Prescription	4
KSS 3760	Strength Training and Conditioning	3
KSS 4805	Administration of Exercise Programs	3
KSS 4810	Clinical Exercise Testing and Prescription	4
KSS 4875	Exercise Counseling and Behavioral Strategies	4
KSS 4880	Internship	8

**Required additional courses (9 s.h.)**

BIOL 3705	Introduction to Human Gross Anatomy	4
BIOL 3705L	Introduction to Human Gross Anatomy Laboratory	0
BIOL 3730	Human Physiology	4
BIOL 3730L	Human Physiology Laboratory	1

**Additional recommended graduate prep courses. Check your specific graduate program requirements.**

BIOL 2601 & 2601L	General Biology 1: Molecules and Cells and General Biology I: Molecules and Cells Laboratory	4
BIOL 2602 & 2602L	General Biology 2: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
CHEM 1516 & 1516L	General Chemistry 2 and General Chemistry 2 Laboratory <sup>1</sup>	4
PHYS 1502	Fundamentals of Physics 2 <sup>1</sup>	3
PHYS 1502L	Fundamentals of Physics Laboratory 2	1

**Total Semester Hours 122-125**

<sup>1</sup> Not required for MAT at YSU.

Course	Title	S.H.
<b>Year 1</b>		
<b>Fall</b>		
YSU 1500	Success Seminar	1
KSS 1559	Aerobic Conditioning Activities	1
MATH 1513	Algebra and Transcendental Function	5
ENGL 1550	Writing 1	3
CMST 1545	Communication Foundations	3
A&H Elective		3
<b>Semester Hours</b>		<b>16</b>
<b>Spring</b>		
KSS 1560	Resistance Training	2
KSS 1595	Introduction to Kinesiology and Sport Science	2
ENGL 1551	Writing 2	3
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4
BIOL 2601 & 2601L	General Biology 1: Molecules and Cells and General Biology I: Molecules and Cells Laboratory	4
<b>Semester Hours</b>		<b>15</b>

**Year 2****Fall**

KSS 15XX Level Activity Elective		1
KSS 2605	Sports First Aid and Injury Prevention	3
KSS 2625	Pedagogical Aspects of Exercise Science	3
BIOL 2602 & 2602L	General Biology 2: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
PSYC 1560	General Psychology	3
FNUT 1551	Normal Nutrition	3
<b>Semester Hours</b>		<b>17</b>

**Spring**

KSS 3700	Exercise Evaluation and Testing	4
STAT 2601 or STAT 2625	Introductory Statistics or Statistical Literacy and Critical Reasoning	3
BIOL 3730	Human Physiology	4
BIOL 3730L	Human Physiology Laboratory	1
PHYS 1501	Fundamentals of Physics 1	4
PHYS 1501L	Fundamentals of Physics Laboratory 1	1
<b>Semester Hours</b>		<b>17</b>

**Year 3****Fall**

KSS 3710	Physiology of Exercise	4
KSS 3710L	Physiology of Exercise Laboratory	1
KSS 3720	Kinesiology and Applied Anatomy	4
KSS 4805	Administration of Exercise Programs	3
BIOL 3705	Introduction to Human Gross Anatomy	4
BIOL 3705L	Introduction to Human Gross Anatomy Laboratory	0
<b>Semester Hours</b>		<b>16</b>

**Spring**

KSS 3730	Exercise Prescription	4
KSS 3760	Strength Training and Conditioning	3
A&H Elective		3
SS Elective		3
SPA Elective		3
<b>Semester Hours</b>		<b>16</b>

**Year 4****Fall**

KSS 4810	Clinical Exercise Testing and Prescription	4
Elective		3
Elective		3
Elective		3
<b>Semester Hours</b>		<b>13</b>

**Spring**

KSS 4880	Internship	8
KSS 4875	Exercise Counseling and Behavioral Strategies	4
<b>Semester Hours</b>		<b>12</b>
<b>Total Semester Hours</b>		<b>122</b>

**Student Learning Outcome #1:**

- Students will demonstrate knowledge and skills in health, fitness, and performance assessment.

## DESIRED LEARNING OUTCOME

- Students will conduct physical fitness assessments for healthy participants and those with controlled disease.
- Students will interpret cardiorespiratory fitness assessments.

**Student Learning Outcome #2**

- Students will demonstrate skills in risk factor and health risk identification and the ability to prescribe and implement exercise safely in healthy individuals, special populations (i.e. older adults, youth, and pregnant women), individuals with controlled cardiovascular, pulmonary, and metabolic diseases, and other clinical populations.

## DESIRED PERFORMANCE OUTCOME

- Students will prescribe and implement Exercise Rx, using FITT-VP principles, for healthy participants, special populations (i.e. older adults, youth, and pregnant women), participants with controlled cardiovascular, pulmonary, and metabolic diseases, and other clinical populations based on health status and goals.
- Students will establish progression guidelines for resistance, aerobic and flexibility exercises to achieve the goals of the participant.
- Students will determine safe and effective exercise programs to achieve desired outcomes and goals.
- Students will demonstrate knowledge regarding the implementation of a weight management program as indicated by personal goals that are supported by pre-participation health screening, health history, and body composition/anthropometric
- The student will demonstrate skill in modifying exercise prescriptions based on environmental conditions.

**Student Learning Outcome #3**

- Students will demonstrate competency in effectively educating, exercise counseling and using behavioral strategies regarding lifestyle modification for individuals.

## DESIRED PERFORMANCE OUTCOME

- Optimize adoption and adherence to exercise programs and other healthy behaviors by applying effective communication techniques, behavioral and motivational strategies.
- Students will demonstrate their knowledge by providing educational resources to support clients in the adoption and maintenance of healthy lifestyle behaviors.
- Students will demonstrate their knowledge by providing support within the scope of practice of an ACSM Certified Exercise Physiologist and refer to other health professionals as indicated.

**Student Learning Outcome #4:**

- Students will demonstrate competency in the legal and professional tasks related to the discipline

## DESIRED PERFORMANCE OUTCOME

- Students will create and disseminate risk management guidelines for a health/fitness facility, department or organization to reduce member, employee and business risk
- Students will create an effective injury prevention program and ensure that emergency policies and procedures are in place.
- Students will demonstrate knowledge in establishing policies and procedures for the management of health fitness facilities based on accepted safety and legal guidelines, standards and regulations

**Student Learning Outcome #5**

- Students will demonstrate knowledge of implementing management policies related to the discipline.

**Student Learning Outcomes**

DESIRED PERFORMANCE OUTCOMES

- Students will demonstrate knowledge in developing and executing a marketing plan to promote programs, services and facilities
- Students will demonstrate knowledge in managing human resources in accordance with leadership, organization, and management techniques.
- Students will demonstrate knowledge in managing fiscal resources in accordance with leadership, organization, and management techniques.