

# Exercise Science (EXSC)

The program in exercise science is designed to prepare candidates for a variety of career options, including teaching physical education, coaching, analyzing and prescribing fitness programs, athletic training, or preparation for professional programs in allied health.

Graduates of this program should be well prepared to enter graduate programs of study in such areas as exercise physiology, biomechanics, athletic training, sport management, medical school, physical therapy school, and other allied health professional schools.

## Requirements for B.S. in Exercise Science

### Requirements for the B.S. in Exercise Science

Students must have 40 hours of 3000/4000-level classes to graduate.

#### State Minimum Core

35

MATH – A prerequisite course, MATH 1203, may be required.

MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)

or MATH 1230 Calculus Mathematics (ACTS Equivalency = MATH 1305)

or MATH 2553 Calculus I (ACTS Equivalency = MATH 2405)

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL & BIOL 1541L 1014 Lecture)  
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)

or BIOL 1588 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)

CHEM 1103 University Chemistry I (ACTS Equivalency = & CHEM 1101L CHEM 1414 Lecture)  
and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

or CHEM 1203 Chemistry for Majors I  
& CHEM 1201L and Chemistry for Majors I Laboratory

PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

#### Additional Required Sciences (20 hours)

BIOL 2443 Human Anatomy (ACTS Equivalency = BIOL 2404 & BIOL 2441L Lecture) 4  
and Human Anatomy Laboratory (ACTS Equivalency = BIOL 2404 Lab)

BIOL 2213 Human Physiology (ACTS Equivalency = BIOL & BIOL 2211L 2414 Lecture) 4  
and Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)

CHEM 1123 University Chemistry II (ACTS Equivalency = & CHEM 1121L CHEM 1424 Lecture) 4  
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

or CHEM 1223 Chemistry for Majors II  
& CHEM 1221L and Chemistry for Majors II Laboratory

CHEM 2613 Organic Physiological Chemistry (ACTS & CHEM 2611L Equivalency = CHEM 1224 Lecture) 4-5  
and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)

or CHEM 3603 Organic Chemistry I  
& CHEM 3601L and Organic Chemistry I Laboratory

or CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors  
& CHEM 3702L and Organic Chemistry I Lab for Chemistry Majors

PHYS 2013 College Physics I (ACTS Equivalency = PHYS & PHYS 2011L 2014 Lecture) 4  
and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)

#### Additional Non-EXSC Requirements (12 hours)

NUTR 1213 Fundamentals of Nutrition 3

COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) 3

STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103) 3

or PSYC 2013 Introduction to Statistics for Psychologists

or SOCI 3303 Social Data and Analysis

or STAT 2823 Biostatistics

PSYC 3023 Abnormal Psychology 3

#### Exercise Science Core Required (30 hours)

EXSC 2663 Terminology for the Health Professions <sup>1</sup> 3

EXSC 2733 Introduction to Exercise Science 3

EXSC 3153 Exercise Physiology 3

EXSC 3353 Mechanics of Human Movement 3

EXSC 3533 Laboratory Techniques 3

EXSC 4323 Exercise Prescription 3

EXSC 4783 Sport and Exercise Psychology 3

EXSC 4833 Exercise Applications for Special Populations 3

or EXSC 4833H Honors Exercise Applications for Special Populations

EXSC 4903 Internship in Exercise Science <sup>2</sup> 3

or EXSC 405V Independent Study

or EXSC 498VH Exercise Science Honors Thesis/Project

EXSC Elective 3

**Related Electives chosen from EXSC, PBHL, CHLP, SOCI, SPED, 15 FDSC, NUTR, CHEM, STAT, CDIS, BIOL, ANTH, HDFS, ANSC, CNED, PHED, PSYC, SCWK, HRWD, HESC, POSC, PHYS, RESM, MATH**

**General Electives 7-8**

**Total Hours 120**

<sup>1</sup> EXSC 2663 is cross-listed with PBHL 2663.

<sup>2</sup> EXSC 498VH option available only if completing Honors Program

## Exercise Science B.S.

### Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan in Kinesiology should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program. Students must have 40 hours of 3000/4000-level classes to graduate. Find out more about the state minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) requirements.

First Year	Units		Second Year	Units	
	Fall	Spring		Fall	Spring
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3		EXSC 2733 Introduction to Exercise Science (Satisfies General Education Outcome 4.1)	3	
Choose from (Satisfies General Education Outcome 3.4): <sup>1</sup>			NUTR 1213 Fundamentals of Nutrition	3	
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) or CHEM 1203 and CHEM 1201L	4		Choose from (Satisfies General Education Outcome 4.2):		
Choose from (Satisfies General Education Outcome 2.1 if MATH is taken): <sup>1</sup>	3		HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) or PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)	3	
General Elective (recommend MATH 1203 if appropriate)			EXSC 2663 Terminology for the Health Professions <sup>2</sup>	3	
MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) or MATH 1284C Precalculus Mathematics (ACTS Equivalency = MATH 1305) or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)			BIOL 2443 Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture) & BIOL 2441L Human Anatomy Laboratory (ACTS Equivalency = BIOL 2404 Lab)	4	
Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>1</sup>	3		PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3)		3
Satisfies General Education Outcome 3.4:			STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103) or PSYC 2013 Introduction to Statistics for Psychologists or SOCI 3303 Social Data and Analysis or STAT 2823 Biostatistics		3
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) or BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)	4		BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) & BIOL 2211L Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)		4
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3	General Elective		2
Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>1</sup>		3	Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) <sup>1</sup>		3
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) or CHEM 1223 and CHEM 1221L		4	Year Total:	16	15
Choose from:			<b>Third Year</b>		
General Elective (if math requirement met excluding STAT 2303)			PHYS 2013 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) & PHYS 2011L College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	4	
MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) or MATH 1284C Precalculus Mathematics (ACTS Equivalency = MATH 1305) or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)		3	EXSC 3153 Exercise Physiology	3	
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)		3	EXSC 3353 Mechanics of Human Movement	3	
Year Total:	17	16	General Elective	3	
			Related Elective	3	
			EXSC 3533 Laboratory Techniques		3
			CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) & CHEM 2611L Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab) or CHEM 3603 and CHEM 3601L		4
			Related Elective		3
			EXSC 4323 Exercise Prescription		3
			EXSC Elective		3
			Year Total:	16	16

Fourth Year	Units	
	Fall	Spring
EXSC 4833 Exercise Applications for Special Populations or EXSC 4833H Honors Exercise Applications for Special Populations	3	
Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) <sup>1</sup>	3	
EXSC 4783 Sport and Exercise Psychology	3	
PSYC 3023 Abnormal Psychology	3	
EXSC 4903 Internship in Exercise Science (Satisfies General Education Outcome 6.1) <sup>1, 3</sup> or EXSC 405V Independent Study or EXSC 498VH Exercise Science Honors Thesis/Project		3
Related Elective		9
Year Total:	12	12
<b>Total Units in Sequence:</b>	<b>120</b>	

<sup>1</sup> Students must complete the State Minimum Core requirements (<https://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fnextcatalog.uark.edu%2Fundergraduatecatalog%2Fgeneral%2Fstateminimum%2F&data=02%7C01%7Cagriffin%40uark.edu%7Ce4e632415f9b49eda9bf08d7f5c20b91%7C79c742c4e61c4fa5be89a3cb566a80d1%7C0%7C0%7C637248086069611524&data=4b120ob83N8KfTKGD%2F1XG8924jwOx8pTlw8IWNAGp0s%3D&reserved=0>) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (<https://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fnextcatalog.uark.edu%2Fundergraduatecatalog%2Fgeneral%2Fgeneral%2F&data=02%7C01%7Cagriffin%40uark.edu%7Ce4e632415f9b49eda9bf08d7f5c20b91%7C79c742c4e61c4fa5be89a3cb566a80d1%7C0%7C0%7C637248086069611524&data=4b120ob83N8KfTKGD%2B2DWRVefAqIMsYNX4KXEgX2JdEJJY7Go%3D&reserved=0>), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic advisor when making course selections.

<sup>2</sup> EXSC 2663 is cross-listed with PBHL 2663.

<sup>3</sup> Use of EXSC 498VH only for students completing the College of Education and Health Professions Honors Program.

## Courses

### EXSC 2663. Terminology for the Health Professions. 3 Hours.

Emphasis is on word roots and combined forms of words describing various facets of health and disease. Descriptive definitions with application of practical significance included for the health professional. (Typically offered: Irregular)  
This course is cross-listed with PBHL 2663.

### EXSC 2733. Introduction to Exercise Science. 3 Hours.

This class will cover introductory topics for the Exercise Science students in preparation for entry into the profession. In addition to specific topics, students will prepare their resumes and make a formal presentation. Prerequisite: EXSC major or instructor consent. (Typically offered: Fall and Spring)

### EXSC 2733H. Honors Introduction to Exercise Science. 3 Hours.

This class will cover introductory topics for the Exercise Science students in preparation for entry into the profession. In addition to specific topics, students will prepare their resumes and make a formal presentation. (Typically offered: Fall and Spring)  
This course is equivalent to EXSC 2733.

### EXSC 3013. Functional Anatomy for Exercise Science. 3 Hours.

This course will include the study of functional human anatomy with emphasis on musculoskeletal and neurological systems. There will be an introduction to the clinical application and location of anatomical structures with some common injuries from a health professions perspective. Prerequisite: BIOL 2443 and BIOL 2441L. (Typically offered: Spring)

### EXSC 3153. Exercise Physiology. 3 Hours.

Examination of effects of exercise on the physiology of the systems of the body. The exploration includes effects during, immediately after, and as long term results of work and exercise. Prerequisite: (BIOL 2213 and BIOL 2211L) and (BIOL 2443 and BIOL 2441L). (Typically offered: Fall and Spring)

### EXSC 3353. Mechanics of Human Movement. 3 Hours.

An introduction to basic analysis of motor skills. No credit given toward major in Zoology. Prerequisite: (BIOL 2213 and BIOL 2211L), (BIOL 2443 and BIOL 2441L), and KINSBS or EXSCBS or PHEDBS majors or by instructor consent. (Typically offered: Fall and Spring)

### EXSC 3393. Prevention and Care of Athletic Injuries. 3 Hours.

Introduction to the prevention and care of athletic related injuries. Includes athletic injury recognition and management. Prerequisite: BIOL 2443 and BIOL 2441L. (Typically offered: Irregular)

### EXSC 3421L. Principles and Theories of Strength and Conditioning Laboratory. 1 Hour.

This course will provide the practical skills necessary to design and implement strength and conditioning programs. Students will put principles of cardiovascular, speed, agility, and strength training into practice as they relate to sport team training. Special emphasis is placed on the ability to evaluate exercise movements, prescribe appropriate exercise programs, administer tests, and support program prescription with a sound knowledge of anatomical and physiological adaptations to exercise. Students will learn various skills such as how to set up and run speed, agility, and quickness drills, how to select and administer the appropriate tests for athletic performance, and how to evaluate Olympic lifting technique. Corequisite: EXSC 3423. (Typically offered: Spring)

### EXSC 3423. Principles and Theories of Strength and Conditioning. 3 Hours.

This course will provide the practical skills necessary to design strength and conditioning programs. Special emphasis is placed on the ability to evaluate exercise movements, prescribe appropriate exercise programs, administer tests, and support program prescription with a sound knowledge of anatomical and physiological adaptation to exercise. The course will include laboratory experiences integrated with didactic learning. The laboratory experiences will in teach students various skills such as how to set up and run speed, agility, and quickness drills, how to select and administer the appropriate tests for athletic performance, and how to evaluate Olympic lifting technique. Everyone must participate in the labs as subjects. Come to lab prepared to exercise. When students are finished with this course, they will be well prepared to take the CSCS exam given by the National Strength and Conditioning Association. Corequisite: EXSC 3421L. Prerequisite: (BIOL 2443 and BIOL 2441L) and (BIOL 2213 and BIOL 2211L). (Typically offered: Spring)

### EXSC 3533. Laboratory Techniques. 3 Hours.

Practical experience in testing physical fitness in both the laboratory and non-laboratory settings. Pre- or Corequisite: EXSC 3153. (Typically offered: Fall, Spring and Summer)

### EXSC 3723H. Honors Research Methods in Exercise Science. 3 Hours.

This course will provide an overview of research methods for experimental research designs in exercise science. The students will learn facets of research including: developing a research idea, getting funding for research, obtaining IRB/IACUC approval, data collection, data input, statistical analyses, and preparing manuscripts for publication. Designed for exercise science honors students in spring of their junior year or the summer prior to their senior year to prepare them for their honor's thesis. Prerequisite: Honors standing. (Typically offered: Spring)  
This course is cross-listed with PBHL 3723H.

**EXSC 3901H. Exercise Science Honors Thesis Tutorial. 1 Hour.**

Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and EXSCBS major. (Typically offered: Fall, Spring and Summer)

**EXSC 391V. Special Topics in EXSC. 1-3 Hour.**

Designed to cover specialized topics not presented in exercise science coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

**EXSC 4013. Clinical Exercise Physiology. 3 Hours.**

The course is designed to build upon prior knowledge of Exercise Physiology and Exercise Testing. We will examine the physiological impacts of exercise and exercise training with specific emphasis on how they relate to clinical outcomes and clinical testing. At the end of the course students should have developed competencies congruent with the objectives of the American College of Sports Medicine's (ACSM) certification for Clinical Exercise Physiologist. Prerequisite: EXSC 3153 and EXSC 3533. (Typically offered: Fall)

**EXSC 405V. Independent Study. 1-3 Hour.**

Provides students an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

**EXSC 405VH. Honors Independent Study. 1-4 Hour.**

Provides students an opportunity to pursue special study of research problems. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit. This course is equivalent to EXSC 405V.

**EXSC 4323. Exercise Prescription. 3 Hours.**

This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespiratory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

**EXSC 4323H. Honors Exercise Prescription. 3 Hours.**

This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespiratory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4323.

**EXSC 4773. Performance and Drugs. 3 Hours.**

The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

**EXSC 4773H. Honors Performance and Drugs. 3 Hours.**

The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153 and honors standing. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4773.

**EXSC 4783. Sport and Exercise Psychology. 3 Hours.**

This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: PSYC 2003. (Typically offered: Fall and Summer)

**EXSC 4783H. Honors Sport and Exercise Psychology. 3 Hours.**

This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: Honors standing and PSYC 2003. (Typically offered: Fall) This course is equivalent to EXSC 4783.

**EXSC 4833. Exercise Applications for Special Populations. 3 Hours.**

The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, and EXSC 4323. (Typically offered: Fall and Spring)

**EXSC 4833H. Honors Exercise Applications for Special Populations. 3 Hours.**

The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, EXSC 4323 and honors standing. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4833.

**EXSC 4903. Internship in Exercise Science. 3 Hours.**

Provides opportunities for students in Exercise Science to gain experience in clinics, hospitals, fitness centers, athletic training facilities or related settings. Pre- or Corequisite: EXSC 3533. Prerequisite: EXSC 3353 and EXSC 3153. (Typically offered: Fall, Spring and Summer)

**EXSC 498VH. Exercise Science Honors Thesis/Project. 1-3 Hour.**

Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, EXSCBS, KINSBS, or PHEDBS major, and KINS 3901H or EXSC 3723H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.