

Exercise Science Major in The Kinesiology Department

2020 - 2021

The Kinesiology Department

The Kinesiology Department includes five majors: athletic training, exercise science, coaching, sport studies, and fitness development. All five majors lead to a Bachelor of Science (B.S.) degree. **This flyer describes the B.S. degree in Exercise Science.**

Exercise Science

What is exercise science? Simply stated, exercise science is concerned with how and why the human body responds to movement and physical activity. From this generic description, it is clear that exercise science is a very diverse field of study that encompasses many areas of inquiry. For example, the act of running can be viewed from many different perspectives by exercise scientists. Exercise physiologists might investigate how athletes use oxygen while running and how it impacts on their performance. Biomechanists might analyze the efficiency of an athlete's running stride by applying the laws of physics. Motor behaviorists might examine the processes that affect how we control movement, and how we learn motor skills. Other exercise scientists might look at what athletes eat and how it impacts on their running program. There are two primary areas of inquiry that exercise scientists focus their attention: health-related aspects of physical activity and sports performance. In regards to health-related aspects of physical activity, exercise scientists have studied how exercise benefits health. Exercise scientists have found many interesting relationships between exercise and reducing the risk of disease, or how exercise can improve health and well-being throughout the life span. The study of sports performance by exercise scientists involves a wide range of diverse areas, which can include the growth and development of athletes, nutritional needs of athletes, and movement analysis. While these are just a few of the ways exercise scientists study human movement, there are many more opportunities.

Career Opportunities

Many students are initially interested in an undergraduate program in exercise science because they enjoy sport and participating in physical activities. The opportunity to study the scientific bases of athletics is often appealing. In fact, some students may even apply the knowledge they gain in this type of program to their own athletic performance or work with other athletes in various settings. Other students who major in exercise science use their undergraduate program as a stepping stone to professional and graduate schools in medicine, physical therapy, occupational therapy, chiropractics, nursing, orthopedics, physicians assistant and other allied health fields, as well as the sub discipline areas of exercise physiology, biomechanics, and motor behavior. There are numerous other possibilities in the corporate world (i.e. sports equipment), medical sales, nutrition, ergonomics, and personal training.

Kinesiology Faculty

Augustine, Jacqueline A., Ph.D. (Exercise Science) Syracuse University
Bauer, Jeffrey A. Ph.D. (Biomechanics) Pennsylvania State University
Bellovary, Bryanne, Ph.D. (Exercise Physiology) U of New Mexico
Bryant, Tim M.S. (Exercise Science) Western Illinois University
Buckenmeyer, Phil Ph.D. (Exercise Physiology) University of Maryland
Comins, Sonya M.S.Ed. (Health Education) SUNY Cortland
Crossway, Ashley, DAT (Athletic Training) Indiana University
Dames, Kevin, Ph.D. (Biomechanics) University of Northern Colorado
Davis, Ryan, DSc, ATC (Health Science) Rocky Mountain University
Dearie, Alyson M.S. (Health Sciences) James Madison University
Donnelly, Patrick M.S. (Exercise Science) Syracuse University
Donnelly, Trisha M.S. (Physical Education) Western Michigan University
Fiddler, Ryan Ph.D. (Health & Human Performance) Oklahoma State Univ
Gunn, Lacy M.S. (Kinesiology) University of Massachusetts
Lind, Erik PhD (Kinesiology) Iowa State University
Hokanson, James F. Ph.D. (Exercise Physiology) U. of Cal – Berkeley
Hurley, Wendy Ph.D. (Motor Behavior) Pennsylvania State University
Jackson, Alexander MS Library Science, University of Buffalo
Lee, Yomee Ph.D. (Cultural Studies) Ohio State University
Levasseur, Eric M.S. Athletic Training, SUNY Cortland
Liang, Kyle M.S. Athletic Training, SUNY Cortland
McGinnis, Peter Ph.D. (Biomechanics) University of Illinois
Newhall, Kristine, PhD. (Women's Studies) University of Iowa
Parks, Jason, PhD. (Exercise Physiology) Kent State
Polasek, Katherine Ph.D. (Kinesiology) Temple University
Rayl, Susan Ph.D. (Sport History) Pennsylvania State University
Richardson, Brian Ph.D. (Kinesiology) Penn State University

Area: Exercise Science
Area: Biomechanics
Area: Exercise Physiology
Area: Behavioral and Social Science
Area: Exercise Physiology, Athletic Training
Area: Athletic Training and Health Education
Area: Athletic Training
Area: Biomechanics
Area: Athletic Training and Health Education
Area: Athletic Training
Area: Athletic Training
Area: Athletic Training
Area: Health & Nutrition
Area: Athletic Training
Area: Sports Studies
Area: Exercise Physiology
Area: Motor Behavior and Athletic Training
Area: Computer Applications and Technology
Area: Cultural Studies, Sport Sociology
Area: Athletic Training
Area: Athletic Training
Area: Biomechanics
Area: Sports Studies
Area: Exercise Physiology
Area: Sport and Exercise Psychology (Department Chair)
Area: Sport History
Area: History and Philosophy

Kinesiology Department, Professional Studies Building, Rm. 1164

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Web address: www.cortland.edu/kinesiology (8/20)

Exercise Science Major (EXSC)

Distribution of Courses*	Hours
General Education and Liberal Arts	36
CPN 100: Academic Writing I or CPN 102	3
CPN 101: Academic Writing II (GE 10)	3
PSY 101: General Psychology (GE 3)	3
COM 210: (GE PRES)	3
Other General Education	<u>24</u>
Math and Science Requirements	28-29
MAT 121 or 135 (GE 1)	3-4
Statistics (EXS 201, PSY 201, MAT 201, COM 230, ECO 221)	3
BIO 301: Anatomy and Physiology I	3
BIO 302: Anatomy and Physiology II	3
CHE 227/277Lab: (GE 2)	4
CHE 222: Gen Chem II	4
PHY 105 and 106 or PHY 201 and 202	8
Exercise Science Theory Requirements	27
EXS 100: Intro to Kinesiology	3
EXS 111: Comp. App. In EXS	3
EXS 250: Research Skills in Kin.	3
EXS 287: Soc-Psych Aspects of Activity	3
EXS 380: Motor Behavior	3
EXS 310: (WI) Ethical Issues in Kin.	3
EXS 387: Biomechanics	3
EXS 397: Exercise Physiology	3
EXS 367 or 346: Ex. Or Sport Psych	<u>3</u>
Exercise Science Electives (must choose 4)	12
EXS 225: Digital Video in Kinesiology	3
EXS 315: Anatomical Kinesiology	3
EXS 325: Princ. of Strength & Conditioning	3
EXS 356: Perf. Enhancing Drugs in Sport	3
EXS 357: Nutrition and Sport Performance	3
EXS 435: Neuromuscular Fitness Assessment	3
EXS 438: Cardio respiratory Fitness Assessment	3
EXS 444: Laboratory Assistant	1-3
EXS 449: Advanced Motor Behavior	3
EXS 465: Advanced Exercise Physiology	3
EXS 477: Practicum in Kinesiology	3-6
EXS 487: Advanced Biomechanics	3
EXS 489: Exercise Science Research Methods (WI)	3
EXS 490: Independent Research in Ex. Science	3
EXS 525: Seminar in Exercise Science	1
Activity Courses	3
Choice of Activity Electives in EXS, PED or some REC	
Free Electives	17-18
(3 credits must be WI)	
Total Hours Required for Graduation	124

* Check Prerequisites (especially EXS 489 & EXS 490)

Exercise Science Major Suggested Course Sequence

Fall – 1		Spring – 2	
EXS 100	3	CPN 101/103	3
CHE 227/277L	4	CHE 222	4
COR 101	1	PSY 101	3
CPN 100/102	3	COM 210	3
MAT 121 or MAT 135	3-4	GE Elective	3
EXS 111	3		
	17-18 cr		16cr/31cr
Fall – 2		Spring – 2	
BIO 301 or 324	3	BIO 302 or BIO 514	3
EXS 380	3	PHY 106 or PHY 202	4
GE	3	EXS 387	3
EXS 250	3	EXS 287	3
PHY 105 or 201	4	Statistics	3
	16 cr/47cr		16 cr/60cr
Fall – 3		Spring – 3	
EXS 310 (WI)	3	PED Act Elective	1
EXS 397	3	EXS 346 or EXS 367	3
GE electives	6	GE Electives (two)	6
EXS elective	3	EXS Elective	3
	15 cr /76cr	Free Elective	3
			16 cr/92cr
Fall – 4		Spring – 4	
Free Electives	6	EXS Elective	3
EXS Elective	3	GE Elective	3
GE Elective	3	Free electives (2-3)	8-9
PED Activity Elec	2		
	14 cr/124cr		16 cr /108 cr

Recommended Electives

CAP 230*	Introduction to SPSS
EXS 180	Water Fitness
EXS 346	Sport Psychology
EXS 367	Exercise Psychology
EXS 499	Special Study in Exercise Science
MAT 122*	Calculus B
PSY 232	Adolescent Psychology
PSY 333*	Developmental Psychology
PSY 334*	Psychology of Adulthood and Aging
CHE 301*	Organic Chemistry I
CHE 302*	Organic Chemistry II
BIO 306*	Human Genetics
HLH 323	Foods and Nutrition
SOC 220*	Introduction to Social Gerontology
EXS 432/433	Exercise Prescription
EXS 344	Medical Terminology
EXS 320	Patient Assessment

Pursue a minor in Biology, Chemistry, Social Gerontology, Psychology, Management, Economics or Computer Applications (try a *What If* scenario on myRedDragon to see courses needed).