
THE GEORGE WASHINGTON UNIVERSITY

SCHOOL OF PUBLIC HEALTH
AND HEALTH SERVICES

Bachelor of Science (BS)

Exercise Science

Pre-Medical Professional Concentration

2012-2013

Department of Exercise Science

School of Public Health and Health Services
Bachelor of Science in Exercise Science
Pre-Medical Professional Concentration
2012 - 2013

Program Advisor

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Note: All curriculum revisions will be updated immediately on the website <http://sphhs.gwumc.edu>

Background

The George Washington University School of Public Health and Health Services (SPHHS) first offered the BS Exercise Science fall semester 1997. SPHHS was established in July 1997, bringing together three long-standing University programs, and is fully accredited by the Council on Education for Public Health (CEPH). The school educates over 800 students at the undergraduate, graduate, and doctoral levels, and with seven academic departments and four research centers. Since its inception, SPHHS has offered several undergraduate degrees and programs, including the Bachelor of Science in Exercise Science, the Bachelor of Science in Athletic Training, the Bachelor of Science in Public Health, the Secondary Field of Study/Minor in Exercise Science, the Secondary Field of Study/Minor in Public Health, and the Concentration in Global Public Health in conjunction with the Elliott School of International Affairs. To learn more about SPHHS, visit <http://sphhs.gwumc.edu>.

Careers

The BS in Exercise Science prepares students for professional careers in the field and for entrance into professional graduate programs:

- Health Promotion
- Medicine (Physician Assistant, Nursing, Physician)
- Physical Therapy
- Dietetics
- Corporate Fitness and Wellness Programs
- Personal Training
- Exercise Rehabilitation
- Coaching
- Sport Psychology
- Other health professions

Degree Requirements

All students accepted to the BS with a major in Exercise Science complete 124 credit hours with a minimum 2.5 grade point average (GPA). There are two levels of requirements for the BS with a major in Exercise Science for students to complete: General curriculum requirements and Exercise Science core requirements, plus electives. General curriculum requirements are taken by all undergraduates in SPHHS and form the liberal education component of the BS degree with a major in Exercise Science.

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General Curriculum Requirement (GCR) Courses		Credits
University Writing	UW 1020 University Writing	4
Statistics	STAT 1053 Introduction to Statistics in Social Science	3
Math	MATH (\geq 1220) Calculus with Pre-Calculus or above	3
Biological Science	BISC 1111 Introduction to Biology: Cells & Molecules BISC 1112 Introduction to Biology: Biology of Organisms	8
Chemistry	CHEM 1111 General Chemistry CHEM 1112 General Chemistry	8
Psychology	PSYC 1001 General Psychology	3
Communications	SPHR 1011 Voice and Diction OR COMM 1040 Public Communication OR COMM 1041 Interpersonal Communication OR COMM 1042 Business/Professional Speaking	3
Social and Behavioral Science	6 credit hours of approved courses from: Anthropology (except biological anthropology), communication, economics, geography, linguistics, media and public affairs, political science, psychology, speech and hearing, sociology (including human services)	6
Humanities	6 credit hours of approved courses from: American studies, classical studies, literatures in English, foreign literatures in their original language and in translation, history (including history and appreciation of art, dance, music, film and theatre), humanities, philosophy (except logic), religion, peace studies, and women's studies.	6
Public Health	PUBH 1101 Introduction to Public Health and Health Services OR PUBH 2110 Public Health Biology OR PUBH 2111 Introduction to Preventive Medicine	3
Writing in Discipline	Two WID courses; these may also be counted in another category	6
Total GCR		53
Exercise Science Core Courses (same for all concentrations)		
EXSC 1103 (3) Professional Foundations in Exercise Science EXSC 1110 (4) Applied Anatomy & Physiology I & Lab EXSC 1111 (4) Applied Anatomy & Physiology II & Lab EXSC 2110 (4) Prevention and Care of Injury & Lab EXSC 2111 (4) Exercise Physiology I & Lab EXSC 2112 (4) Exercise Physiology II & Lab	EXSC 2113 (4) Kinesiology & Lab EXSC 2114 (3) Nutrition Sciences I EXSC 2115 (3) Nutrition Sciences II EXSC 2116 (3) Exercise and Health Psychology EXSC 4110 (3) Current Issues in EXSC EXSC 3110 (3) Internship	42
Pre-Medical Professional Concentration		
CHEM 2151 (3) Organic Chemistry and CHEM 2153 (1) Organic Chemistry Lab		4
CHEM 2152 (3) Organic Chemistry and CHEM 2154 (1) Organic Chemistry Lab		4
PHYS 1011 (4) General Physics I		4
PHYS 1012 (4) General Physics II		4
EXSC 3117 (4) Injury Assessment		4
Total Concentration Credits		20
Electives		

Planned with Advisor	9
Total Credits	124

BS Exercise Students Must Fulfill the Following Degree Requirements

◆ All General Curriculum Requirements (53 Credits)
◆ All Core Exercise Science Requirements (42 Credits)
◆ Pre-Medical Professional Concentration Requirements (20 Credits)
◆ Electives Planned with Advisor (9 Credits)
◆ C- or better in core Exercise Science required courses

The following is only one **example** of the Bachelor of Science in Exercise Science Pre-Medical Concentration Course Sequence. Not every student will take every course in the same order.

Freshmen Fall		CR	Freshmen Spring		CR
EXSC 1110	Anatomy/Physiology I	4	EXSC 1111	Anatomy/Physiology II	4
PSYC 1001	General Psychology	3	SPHR or COMM	Voice and Diction or Communications	3
EXSC 1103	Professional Foundations in Exercise Science	3	UW 1020	University Writing	4
BISC 1111	Introduction to Biology	4	BISC 1112	Introduction to Biology	4
	Total	14		Total	15

Sophomore Fall		CR	Sophomore Spring		CR
CHEM 1111	General Chemistry	4	CHEM 1112	General Chemistry	4
EXSC 2110	Prevention and Care of Injury	4	<i>WID</i>		3
Social Science		3	EXSC 2116	Exercise and Health Psychology	3
<i>WID</i>		3	MATH 1220 or above	Calculus with Pre-Calculus	3
<i>Elective</i>		3	<i>Elective</i>		3
	Total	17		Total	16

Junior Fall		CR	Junior Spring		CR
EXSC 2111	Exercise Physiology I	4	EXSC 2112	Exercise Physiology II	4
<i>Social Science</i>		3	STAT 1053	Introduction to Statistics in Social Science	3
CHEM 2151	Organic Chemistry	3	CHEM 2152	Organic Chemistry	3
CHEM 2153	Organic Chemistry Lab	1	CHEM 2154	Organic Chemistry Lab	1
<i>Humanities</i>		3			
<i>Elective</i>		3	<i>Humanities</i>		3
	Total	17		Total	14

Senior Fall		CR	Senior Spring		CR
PHYS 1011	General Physics I	4	PHYS 1012	General Physics II	4
EXSC 2114	Nutrition Sciences I	3	EXSC 2115	Nutrition Sciences II	3
EXSC 3110	Internship	3	EXSC 4110	Current Issues in Exercise Science	3
PUBH requirement		3	EXSC 3117	Injury Assessment	4
EXSC 2113	Kinesiology	4			
	Total	17		Total	14

**Exercise Science
Undergraduate Course Offerings
2012-2013**

ExSc	1050	Emergency Procedures and Safety Skills	2	Introduction to common safety principles, predisposing factors and common causes of accidents, injuries, and illnesses. This course includes American Red Cross Professional Rescuer and Automated External Defibrillator certification. Laboratory fee, \$25.
ExSc	1101	Experimental Course	1-3	Topic announced in the Schedule of Classes. May be repeated for credit provided the topic differs.
ExSc	1103	Professional Foundations in Exercise Science	3	Nature, scope, and scientific basis of exercise science: orientation to professional competencies and opportunities.
ExSc	1110-1111	Applied Anatomy Physiology I-II	4 4	Fundamentals of human anatomy and physiology for students preparing for health sciences professions. Emphasis on bones, joints, muscles, innervation, and blood supply. Laboratory fee: \$40 per semester. EXSC 1110 the prerequisite for EXSC 1111.
ExSc	1112	Current Issues in Coaching	3	This course will examine current trends and issues in athletics, sport and coaching. The concepts will be explored from both theoretical and applied perspectives. Through a series of presentations, readings, videos, internet activities and discussions, students will gain insight into a variety of timely topics.
ExSc	1114	Community Nutrition	3	This course will introduce students to community nutrition and public health programs offered on the local, state, national, and international levels targeting both individuals and groups. Specific topics include methods of nutrition assessment, health policies, nutrition programs, and principles of nutrition education.
ExSc	1117	Principles of Coaching	3	Study of coach/athlete behavioral patterns and interactions, coaching methods, and interdisciplinary principles applicable to sport coaching.
ExSc	1118	Sport and Nutrition	3	The nutrition needs for recreational exercise and sports; skills in assessing nutritional needs; development of individual nutrition programs that are sport/activity-specific; and identification and correction of nutrition problems affecting sports performance. Prerequisite: HLWL 1116 or EXSC 2119
ExSc	1119 W	Children and Sport	3	Learn to understand the psychological, psychomotor, and physiological factors of children's participation in sports. Examine the importance of sport to children, maturation, readiness to compete, adaptations to training, participation motives, social factors, role of parents, role of coaches, fundamentals of training, overtraining, nutrition, gender, stress, competition, current issues and child protection. Theoretical aspects of these developmental issues will be examined and applied in a variety of sport settings. (Writing in the Discipline – WID Course)
ExSc	1121	Introduction to Athletic Training	3	Introduction to the profession of athletic training. Exploration of topics related to athletic training and sports medicine.
ExSc	1180	Topics in Exercise Science	1-3	Topic to be announced in <i>Schedule of Classes</i> . May be repeated for credit with advisor's permission.
ExSc	2110	Prevention and Care of Injury	4	Information and practical experience in preventing, recognizing,

				and treating injuries that occur in physically active individuals. Prerequisite: EXSC 1110 and EXSC 1111 or equivalent.
ExSc	2111	Exercise Physiology I	4	The physiological functions of the body and the effect of exercise on these functions. Prerequisite: EXSC 1110 and EXSC 1111. Laboratory fee: \$40.
ExSc	2112	Exercise Physiology II	4	Understand how the physiological systems of the body respond to acute and chronic exercise with attention to neuromuscular adaptations to exercise. Exercise training program design, training in extreme environmental conditions, and training consideration for special populations. Prerequisite: EXSC 2111. Laboratory fee: \$40.
ExSc	2113	Kinesiology	4	Analysis of human movement with emphasis on the biomechanics of exercise and sport movement patterns. Prerequisite: EXSC 1110 and EXSC 1111 or equivalent, an approved course in anatomy.
ExSc	2114	Nutrition Sciences I	3	Understand how the macronutrients (fat, carbohydrate and protein) are digested, absorbed, and metabolized by the human body. Other topics include alcohol metabolism, weight management, body composition, and macronutrient metabolism in exercise. Prerequisite: EXSC 1110, 1111; BISC 1111, 1112. Laboratory fee: \$40.
ExSc	2115	Nutrition Sciences II	3	Understand how the micronutrients (vitamins and minerals) are digested, absorbed, and metabolized by the human body. Other topics include hydration, the roles of phytochemicals in the diet, and the affect of exercise on micronutrients. Prerequisite: EXSC 2114. Laboratory fee: \$40.
ExSc	2116	Exercise and Health Psychology	3	The relation of behavioral factors to health and disease. The role of physical activity in the prevention of chronic disease and disability. Health behavior theories and cognitive behavioral approaches to health behavior change.
ExSc	2117 W	Sport Psychology	3	Study of the psychological aspects of sport participants, athletes, teams, and competition in sport situations, including personality, motivation, performance level, achievement, and behavioral change strategies, social factors, training events, and measurement techniques. Prerequisite: PSYC 1001 (Writing in the Discipline – WID Course)
ExSc	2119	Basic Nutrition	3	The six classes of nutrients, their chemical basis, physiological functions and conversion into useable energy. Nutrient needs across the lifespan. Prerequisite: BISC 1111 or 1112 or BISC 1005 or CHEM 1111 or CHEM 1112 or CHEM 1003
ExSc	2121	Orthopedic Taping and Bracing	1	Laboratory complement to EXSC 2110 required for Athletic Training majors only. Laboratory fee: \$40.
ExSc	3101	Independent Study	3	For departmental majors only. Provides the student with an opportunity to gain or enhance public health knowledge and to explore an area of interest related to public health research or the delivery and/or administration of health services. Prerequisite: outline of project must be approved prior to registration by project supervisor, program director, and dean's office prior to registration.

ExSc	3102 W	Applied Sport Psychology	3	Introduces students to current research, theoretical perspectives and practical aspects of applied sport psychology. Examine nature of peak mental performance and a range of psychological skills. Develop practical skills in applying mental skills training and use a variety of methods for assessing psychological skills in sports settings. Different approaches to applying and developing mental skills programs for athletes and profession and ethical issues will be examined. (Writing in the Discipline – WID Course) Prerequisite: EXSC 2117
ExSc	3110	Internship	3-9	For departmental majors. Prerequisite: EXSC 1110-1111 and Co-requisite: EXSC 2111, 2112 or permission of instructor.
ExSc	3117	Injury Assessment	4	Information and practical experience in the evaluation and assessment of orthopedic and other injuries. Prerequisite: EXSC 2110. Laboratory fee: \$40.
ExSc	3118	Therapeutic Modalities in Sports Medicine	4	Explanation and demonstration of the use of therapeutic modalities on the healing process including discussion of the use of therapeutic modalities to enhance the rehabilitation process after athletic injury. Prerequisite: EXSC 3117 or permission of instructor. Laboratory fee: \$40.
ExSc	3119	Therapeutic Exercise in Sports Medicine	4	Discussion and application of general rehabilitation techniques to specific athletic injuries, including evaluation, implementation, and follow-up after specific joint injuries. Prerequisite: EXSC 3117 or permission of instructor.
ExSc	3121	Medical Issues in Sports Medicine	3	For Athletic Training majors only. General medical issues and pharmacology as they relate to the profession of athletic training. Laboratory fee, \$40.
ExSc	3122	Athletic Training Administration	3	Standards, policies, and practices of organization, supervision, and administration of athletic training programs.
ExSc	3123 W	Psychology of Injury and Performance	3	For Athletic Training Majors only. A study of various areas within the behavioral sciences related to the rehabilitation and prevention of injuries and the injured physically active individual. (Writing in the Discipline – WID Course)
ExSc	3124 3125 4121 4122	Athletic Training Practicum I - IV	3, 3, 3, 3	For Athletic Training majors only. Practical clinical experience and application of athletic training skills. Laboratory fee: for EXSC 3124, \$25; for EXSC 3125, \$10; for EXSC 4122, \$35.
ExSc	4110	Current Issues in Exercise Science	3	Study of current literature with implications for exercise and sport science specializations; use of library resources and retrieval systems; evaluation of professional competencies. Senior Exercise Science majors only.
Health and Wellness (HLWL) Course Offerings 2012-2013				
HLWL	1101	Topics	1-3	Topic announced in the Schedule of Classes. May be repeated for credit provided the topic differs.
HLWL	1102	Stress Management	3	This course addresses stress management from a holistic point of view, which includes mind body, spirit and emotions. Through self assessment and other consciousness raising activities students

				will become aware of their dominant stressors and how these stressors affect health and wellness.
HLWL	1103	Issues in Men's Health	3	This course will address relevant topics as they pertain to issues in men's health. The course will examine issues in men's health throughout the lifespan (i.e., from birth until death) and will incorporate various aspects of health ranging from physical and emotional to spiritual and occupational.
HLWL	1104	Outdoor and Environmental Education	3	A conceptual and experiential introduction to outdoor education, environmental education, wilderness travel and outdoor leadership with particular emphasis on the Virginian context.
HLWL	1105	Yoga and the Meaning of Life	3	This course provides students with an understanding of the historical teachings that have contributed to the physical, psychological and spiritual practices of yoga. The class is designed to help students adopt these teachings to benefit their own lives.
HLWL	1106	Drug Awareness	3	Analysis of the complex role drugs play in contemporary society and the ethical, legal, socioeconomic and health issues that surround their therapeutic and recreational use.
HLWL	1108	Weight and Society	3	Background and concepts of body dissatisfaction, disordered eating, food preoccupation, and exercise obsession.
HLWL	1109	Human Sexuality	3	Biological and developmental aspects of human sexuality; psychological and emotional aspects of sexual behavior; sexual identity; social forces affecting sexual issues; and research trends in the area of human sexuality.
HLWL	1110	Issues in Alternative Medicine	3	Various Modalities of alternative/complementary/ integrative therapy. Critical analysis and evaluation of the many dimensions of these approaches.
HLWL	1111	Sport and the Law	3	Basic principles of the law as they apply to amateur and professional sports. Legal issues and their ramifications.
HLWL	1112	Issues in Women's Health	3	An introduction to health promotion and disease prevention pertaining especially to diseases, disorders, and conditions that are more prevalent among or unique to women or for which risk factors or interventions may differ for women and men. Topics are covered from epidemiological, socio-cultural, historical, and behavioral perspectives.
HLWL	1114	Personal Health and Wellness	3	A survey of the various components involved in personal health and wellness, such as personal fitness, sexuality, mental health, and environmental health. Emphasis is on application of knowledge through the use of decision-making and behavior modification skills.
HLWL	1116	Lifestyle Nutrition	3	This introductory nutrition course will enable students to make healthful food choices to enhance quality of life and prevent chronic diseases. Auxiliary topics may include food choices, label reading, vegetarian diets, eating for exercise, and interpreting nutrient recommendations.
HLWL	1117	Functional Fitness	3	This course will examine core elements of personal fitness as applied to daily life. It emphasizes the development of functional fitness skills that can be practiced both in and out of the classroom.