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THE GEORGE WASHINGTON UNIVERSITY

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SCHOOL OF PUBLIC HEALTH  
AND HEALTH SERVICES

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**Bachelor of Science (BS)**

**Exercise Science**

**Pre-Athletic Training/Sports Medicine Concentration (1161)**

**2012-2013**

**Department of Exercise Science**

**School of Public Health and Health Services**  
**Bachelor of Science in Exercise Science**  
**Pre-Athletic Training/Sports Medicine Concentration**  
**2012 - 2013**

**Program Advisor and Director**

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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 with a concentration in Pre-Athletic Training/Sports Medicine prepares students for professional careers in the field and for entrance into professional graduate programs:

- Athletic Training
- Medicine (Physician Assistant, Nursing, Physician)
- Physical Therapy
- 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, concentration requirements, plus electives. General curriculum requirements are taken by all undergraduates in SPHHS and form the liberal arts education component of the BS degree with a major in Exercise Science.

**SCHOOL OF PUBLIC HEALTH AND HEALTH SERVICES**  
**DEPARTMENT OF EXERCISE SCIENCE**  
**BACHELOR OF SCIENCE in EXERCISE SCIENCE**  
**PRE-ATHLETIC TRAINING/SPORTS MEDICINE**  
**2012-2013**

| <b>General Curriculum Requirement (GCR) Courses</b>   |   | <b>Credits</b> |
|---|---|----------------|
| 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<br>BISC 1112 Introduction to Biology: Biology of Organisms   | 8              |
| Chemistry   | CHEM 1111 General Chemistry<br>CHEM 1112 General Chemistry  | 8              |
| Psychology  | PSYC 1001 General Psychology  | 3              |
| Communications  | SPHR 1011 Voice and Diction <b>OR</b><br>COMM 1040 Public Communication <b>OR</b><br>COMM 1041 Interpersonal Communication <b>OR</b><br>COMM 1042 Business/Professional Speaking  | 3              |
| Social and Behavioral Science   | 6 credit hours of approved courses from:<br>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:<br>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 <b>OR</b><br>PUBH 2110 Public Health Biology <b>OR</b><br>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             |
| <b>Exercise Science Core Courses (same for all concentrations)</b>  |   |                |
| EXSC 1103 (3) Professional Foundations in Exercise Science<br>EXSC 1110 (4) Applied Anatomy & Physiology I & Lab<br>EXSC 1111 (4) Applied Anatomy & Physiology II & Lab<br>EXSC 2110 (3) Prevention and Care of Injury<br>EXSC 2111 (4) Exercise Physiology I & Lab<br>EXSC 2112 (4) Exercise Physiology II & Lab | EXSC 2113 (4) Kinesiology & Lab<br>EXSC 2114 (3) Nutrition Sciences I<br>EXSC 2115 (3) Nutrition Sciences II<br>EXSC 2116 (3) Exercise and Health Psychology<br>EXSC 3110 (3) Internship<br>EXSC 4110 (3) Current Issues in EXSC  | 41             |
| <b>Concentration Requirements</b>   |   |                |
| EXSC 2121 (1) Orthopedic Taping and Bracing   |   |                |
| EXSC 3117 (4) Injury Assessment   |   |                |
| EXSC 3118 (4) Therapeutic Modalities in Sports Medicine   |   |                |
| EXSC 3119 (4) Therapeutic Exercise in Sports Medicine   |   |                |
| EXSC 3121 (3) Medical Issues in Sports Medicine   |   |                |
| EXSC 3123W (3) Psychology of Injury and Performance   |   |                |
| EXSC 3125 (3) Athletic Training Practicum II  |   |                |
|   |   | 22             |
| <b>Electives</b>  |   |                |
| Planned with Advisor  |   | 8              |
| <b>Total Credits</b>  |   | <b>124</b>     |

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| <b>BS Exercise Students Must Fulfill the Following Degree Requirements</b> |
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| ◆ All General Curriculum Requirements (53 Credits)                 |
| ◆ All Core Exercise Science Requirements (41 Credits)              |
| ◆ Pre-Athletic Training/Sports Medicine Concentration (22 Credits) |
| ◆ Electives Planned with Advisor (8 Credits)                       |
| ◆ C- or better in core Exercise Science required courses           |

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

| <b>Freshmen Fall</b> |  | <b>CR</b> | <b>Freshmen Spring</b> |                                     | <b>CR</b> |
|----------------------|--|-----------|------------------------|-------------------------------------|-----------|
| UW 1020              | University Writing                           | 4         | <i>Humanities</i>      |                                     | 3         |
| 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         | Math 1220 or above     | Calculus with pre-calculus          | 3         |
|                      |  |           | <i>Elective</i>        |                                     | 3         |
|                      | Total  | 14        |                        | Total                               | 16        |

| <b>Sophomore Fall</b> |                               | <b>CR</b> | <b>Sophomore Spring</b> |                                   | <b>CR</b> |
|-----------------------|-------------------------------|-----------|-------------------------|-----------------------------------|-----------|
| BISC 1111             | Introduction to Biology       | 4         | BISC 1112               | Introduction to Biology           | 4         |
| EXSC 2110             | Prevention and Care of Injury | 3         | <i>WID</i>              |                                   | 3         |
| EXSC 2121             | Orthopedic Taping and Bracing | 1         | EXSC 3117               | Injury Assessment                 | 4         |
| <i>Humanities</i>     |                               | 3         | EXSC 3121               | Medical Issues in Sports Medicine | 3         |
| <i>Elective</i>       |                               | 3         | <i>Elective</i>         |                                   | 2         |
| <i>WID</i>            |                               | 3         |                         |                                   |           |
|                       | Total                         | 17        |                         | Total                             | 16        |

| <b>Junior Fall</b> |   | <b>CR</b> | <b>Junior Spring</b> |   | <b>CR</b> |
|--------------------|---|-----------|----------------------|---|-----------|
| EXSC 2111          | Exercise Physiology I                     | 4         | EXSC 2112            | Exercise Physiology II                  | 4         |
| EXSC 2113          | Kinesiology                               | 4         | EXSC 2116            | Exercise and Health Psychology          | 3         |
| EXSC 3118          | Therapeutic Modalities in Sports Medicine | 4         | EXSC 3119            | Therapeutic Exercise in Sports Medicine | 4         |
| Social Science     |   | 3         | EXSC 3110            | Internship                              | 3         |
|                    |   |           | EXSC 3123W           | Psychology of Injury and Performance    | 3         |
|                    | Total                                     | 15        |                      | Total                                   | 17        |

| <b>Senior Fall</b> |  | <b>CR</b> | <b>Senior Spring</b> |                                    | <b>CR</b> |
|--------------------|--|-----------|----------------------|------------------------------------|-----------|
| CHEM 1111          | General Chemistry                            | 4         | CHEM 1112            | General Chemistry                  | 4         |
| EXSC 2114          | Nutrition Sciences I                         | 3         | EXSC 2115            | Nutrition Sciences II              | 3         |
| STAT 1053          | Introduction to Statistics in Social Science | 3         | EXSC 4110            | Current Issues in Exercise Science | 3         |
| PUBH Requirement   |  | 3         | <i>EXSC 3125</i>     | Athletic Training Practicum II     | 3         |
| Social Science     |  | 3         |                      |                                    |           |
|                    | Total  | 16        |                      | Total                              | 13        |

**Department of 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<br>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. Pre-requisite: HLWL 1116 or EXSC 2119.   |
| ExSc | 1119<br>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.  |
| 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, and BISC 1111, 1112.   |
| 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.   |
| 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)<br>Prerequisite: EXSC 2117 |
| ExSc | 3110                         | Internship                                | 1-9           | For departmental majors. Prerequisite: EXSC 1110-1111 Co-requisite: EXSC 2111 and 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 2110, 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<br>3125<br>4121<br>4122 | Athletic Training Practicum I - IV        | 3, 3,<br>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<br>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.   |