EXERCISE SCIENCE

Department Website (http://www.sph.sc.edu/exsc/)

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The mission of the Department of Exercise Science is to expand and disseminate the body of knowledge concerning the relationship between exercise participation and human health.

Programs of Study

The undergraduate program leading to a Bachelor of Science degree with a major in exercise science is a science-based program designed primarily to prepare students for entry into post-baccalaureate/graduate programs in health-related fields. A departmental core curriculum provides comprehensive mastery of exercise science.

Entrance Requirements

New freshmen who meet University admissions standards are eligible for admission to the degree program offered by the Department of Exercise Science. Transfer admission requires department approval as well as prerequisites.

Transfer Admission

1. Students enrolled in other colleges on the Columbia campus must have a minimum cumulative GPA of 2.75 and must have at least 12 USC credit hours.
2. Students from other USC campuses must have a cumulative GPA of 2.75 and must have taken at least 12 USC credit hours. Additionally, students from other USC campuses who have fewer than 30 semester hours must also meet Columbia campus freshman admission requirements.
3. Transfer students from regionally accredited institutions must present a minimum cumulative GPA of 2.75 on all college work taken. Students who have fewer than 30 semester hours of college work must also meet Columbia campus freshman admission requirements.

Retention and Progression Standards

1. If the semester, yearly, or cumulative grade point average of a student is below 2.00, the student will be notified in writing.
2. An exercise science major must receive a grade of C or higher in any course in order for it to serve as a prerequisite.
3. A student in exercise science must earn a grade of C or higher in all EXSC departmental course work (EXSC) and in required cognates.
4. An exercise science major may attempt an EXSC course and any prerequisites a maximum of two times to fulfill the requirement. A grade of W will be included as an attempt.
5. An exercise science major may repeat a maximum of three EXSC courses.

Attendance Requirements

Students enrolled in the Department of Exercise Science are subject to attendance regulations of the University described elsewhere in the bulletin. When a student enrolls in a particular course, the student is obligated for all the work which may be assigned. Punctual and regular attendance is vital to the discharge of this obligation. The student is responsible for all assigned work in a course, and absences, excused or not, do not absolve the student of this responsibility.

Minors

Students majoring in Exercise Science may pursue minors offered by other units. In completing a minor, students may apply advisor-approved courses to both the minor and cognate, or elective requirements.

Programs

- Exercise Science, B.S. (https://academicbulletins.sc.edu/undergraduate/public-health/exercise-science/exercise-science-bs/)

Courses

ATEP 263 - Introduction to Athletic Training (3 Credits)
Introduction to the historical evolution of athletic training with an emphasis on program development including basic athletic training principles/skills associated with common sports injuries/illnesses.

ATEP 266 - Care and Prevention of Injuries (3 Credits)
Knowledge, skills, and values associated with prevention, care, treatment, and rehabilitation of common injuries/illnesses.

ATEP 267 - Clinical Foundations in Athletic Training (3 Credits)
Basic knowledge and skill in athletic injury prevention, care, and recognition; medical terminology; fulfillment of athletic training clinical proficiencies.

ATEP 292 - Athletic Training Clinical Experience I (2 Credits)
Supervised clinical experience in an athletic training setting. Integrates cognitive learning in conjunction with psychomotor skill development and assessment. Restricted to athletic training majors. Special permission required by department. Accepted into ATEP.
Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

ATEP 293 - Athletic Training Clinical Experience II (2 Credits)
Supervised clinical experience in an athletic training setting. Integrates cognitive learning in conjunction with psychomotor skill development and assessment Restricted to athletic training majors. Special permission required by department.
Prerequisites: ATEP 348, ATEP 348L, ATEP 292.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

ATEP 300 - First Aid and CPR (2 Credits)
Knowledge and skills necessary to meet the needs of situations when emergency care is critical. Includes American Red Cross CPR/AED and First Aid certification. Encompasses skills for adult, child, and infant CPR/AED, breathing emergencies, and first aid procedures for emergency situations.
Corequisite: ATEP 300L.

ATEP 300L - First Aid and CPR Lab (1 Credit)
Skill development to meet guidelines for certification. Skills include AED, adult, child, and infant CPR, breathing emergencies, and first aid.
Corequisite: ATEP 300.

ATEP 310 - Emergency Medical Response (2 Credits)
Knowledge acquisition necessary to work as an emergency medical responder (EMR) to help sustain life, reduce pain and minimize the consequences of injury or sudden illness until more advanced medical help takes over. Appropriate decisions about the care to provide in a medical emergency. Understanding the role of an EMR as a crucial link in the emergency medical services (EMS) system.
Corequisite: ATEP 310L.

ATEP 310L - Emergency Medical Responder Lab (1 Credit)
Clinical applications necessary to work as an emergency medical responder (EMR) to help sustain life, reduce pain and minimize the consequences of injury or sudden illness until more advanced medical help takes over. Appropriate decisions about the care to provide in a medical emergency. Skills an EMR needs to act as a crucial link in the emergency medical services (EMS) system.
Corequisite: ATEP 310.

ATEP 348 - Evaluation and Assessment of Lower Extremity Injuries (3 Credits)
Knowledge and skills for orthopedic/physical assessment of common injuries to the lower body; study of the lower extremities as they relate to the prevention, recognition, evaluation and assessment, immediate care, and treatment; rehabilitation and reconditioning of injuring and illnesses to athletes and others engaged in physical activity.
Prerequisites: ATEP 266, EXSC 275.

Corequisite: ATEP 348L.

ATEP 348L - Evaluation and Assessment of Lower Extremity Injuries Lab (1 Credit)
Laboratory setting to enhance knowledge and skills for orthopedic/physical assessment of common injuries to the lower extremities.
Prerequisites: ATEP 266.

Corequisite: ATEP 348.

ATEP 349 - Evaluation and Assessment of Head, Neck, Spine & Abdomen Injuries (3 Credits)
Knowledge and skills for orthopedic/physical assessment of common injuries to the cervical spine, head, face, abdomen, and thorax. Study of the cervical spine, head, face, abdomen and thorax as they related to the prevention, recognition, evaluation and assessment; immediate care, treatment, rehabilitation, and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.
Prerequisites: ATEP 292, ATEP 348, ATEP 348L.

Corequisite: ATEP 349L.

ATEP 349L - Evaluation and Assessment of Head, Neck, Spine & Abdomen Injuries Lab (1 Credit)
Skill development for orthopedic/physical assessment of common injuries to the cervical spine, head, face, abdomen, and thorax.
Prerequisites: ATEP 348, ATEP 348L.

Corequisite: ATEP 349.

ATEP 350 - Evaluation and Assessment of Upper Extremity Injuries (3 Credits)
Prevention, recognition, orthopedic assessment of common injuries to the upper body; immediate care, treatment, and rehabilitation of injuries and illnesses to athletes.
Prerequisites: ATEP 349, ATEP 349L.

Corequisite: ATEP 350L.

ATEP 350L - Evaluation and Assessment of Upper Extremity Injuries (1 Credit)
Prevention, recognition, orthopedic assessment of common injuries to the upper body; immediate care, treatment, and rehabilitation of injuries and illnesses to athletes.
Prerequisites: ATEP 349, ATEP 349L.

Corequisite: ATEP 350L.

ATEP 365 - Pharmacology and Drug Education in Athletic Trainers (2 Credits)
Knowledge, skills, and values associated with athletic trainer's pharmacological applications in the treatment of injuries/illnesses, including use of alcohol and illicit drugs.
Prerequisites: ATEP 293, ATEP 348, ATEP 348L.

ATEP 366 - Therapeutic Modalities (3 Credits)
Knowledge and techniques needed to plan, operate, document, and evaluate therapeutic modalities used in treatment of injuries/illnesses.
Prerequisites: ATEP 293, ATEP 349, ATEP 349L.

Corequisite: ATEP 366L.

ATEP 366L - Therapeutic Modalities Lab (1 Credit)
Integrates cognitive learning in conjunction with psychomotor skill development and assessment on the application of modalities in laboratory situations.
Corequisite: ATEP 366.

ATEP 392 - Athletic Training Clinical Experience III (2 Credits)
Supervised clinical experience for athletic training students. Integrates cognitive learning in conjunction with psychomotor skill development and assessment.
Prerequisites: ATEP 293, ATEP 349, ATEP 349L.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

ATEP 393 - Athletic Training Clinical Experience IV (2 Credits)
Supervised clinical experience for athletic training students. Integrates cognitive learning in conjunction with psychomotor skill development and assessment.
Prerequisites: ATEP 365, ATEP 366, ATEP 366L, ATEP 392.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

ATEP 466 - Therapeutic Exercise (3 Credits)
Knowledge and techniques needed to plan, operate, document, and evaluate therapeutic exercise programs for the rehabilitation and reconditioning of injured patients.
Prerequisites: EXSC 223, EXSC 224, ATEP 365, ATEP 366, ATEP 366L, ATEP 392.

Corequisite: ATEP 466L.

ATEP 466L - Therapeutic Exercise Lab (1 Credit)
Techniques and skills of therapeutic exercise used in the development of rehabilitation programs for various injuries.
Corequisite: ATEP 466.

ATEP 492 - Athletic Training Clinical Experience V (2 Credits)
Supervised clinical experience for athletic training students. Integrates cognitive learning in conjunction with psychomotor skill development and assessment.
Prerequisites: ATEP 393, ATEP 466, ATEP 466L, ATEP 497.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

ATEP 493 - Athletic Training Clinical Experience VI (2 Credits)
Supervised clinical experience for athletic training students. Integrates cognitive learning in conjunction with psychomotor skill development and assessment.
Prerequisites: ATEP 492, ATEP 496.

ATEP 494 - Athletic Training Senior Seminar (3 Credits)
Preparation for the BOC examination for athletic trainers; advanced skills and integration of athletic training principles and development of athletic training research; professional research and current literature pertaining to relevant topics in athletic training.
Prerequisites: ATEP 492.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships, GLD: Research

ATEP 496 - Organization and Administration of Athletic Training (3 Credits)
Management and operation of athletic training programs.
Prerequisites: ATEP 393, ATEP 466, ATEP 466L, ATEP 497.

ATEP 497 - General Medical Concerns for Athletic Trainers (3 Credits)
Knowledge and skills to recognize, treat, and refer general medical conditions and disabilities.
Prerequisites: ATEP 365, ATEP 366, ATEP 366L, ATEP 392.

EXSC 191 - Physical Activity and Health (3 Credits)
Concepts of exercise, nutrition, behavior changes, and skills to promote lifelong physical activity and health.

EXSC 200 - Introduction to Sports Medicine and Athletic Training (3 Credits)
Examination of careers and specific practices within sports medicine, specifically athletic training.
Prerequisites: C or better in EXSC 223 and EXSC 223L.

EXSC 201 - Foundations of Physical Therapy (3 Credits)
Introduction to the profession and practice of physical therapy detailing the functions, disorders, and therapies of the major organ systems in applied context.

EXSC 223 - Anatomy and Physiology I (3 Credits)
The structure and functions of the human body: tissues, integument, skeletal, muscular, respiratory, and reproductive systems, and regulation of eating and metabolism.
Prerequisites: ENGL 102; BIOL 102; CHEM 111; MATH 122 or MATH 141.

EXSC 223L - Anatomy and Physiology I Laboratory (1 Credit)
Hands-on activities covering micro- and macroscopic anatomical topics including identification of tissues, bones and markings of the skeletal system, the joints, and the skeletal muscles of the body.
Prerequisites: ENGL 102; BIOL 102, CHEM 111; MATH 122 or MATH 141.

Prerequisite or Corequisite: EXSC 223.

EXSC 224 - Anatomy and Physiology II (3 Credits)
The structure and functions of the human body: nervous, cardiovascular, digestive, immune, urinary, and endocrine systems.
Prerequisites: C or better in EXSC 223 and EXSC 223L.

EXSC 224L - Anatomy and Physiology II Lab (1 Credit)
Hands-on activities covering the gross anatomy nervous, cardiovascular, digestive, and muscular systems.
Prerequisites: C or better in both EXSC 223 and EXSC 223L.

EXSC 275 - Functional Musculoskeletal Anatomy (2 Credits)
Human anatomy for allied health professions. Focus on anatomy relevant to providing health services; knowledge and skills of orthopedic anatomy relative to muscle, ligament, and tendon; muscle origins, insertions, innervations, and actions pertaining to joint motion.
Prerequisites: EXSC 223 and EXSC 223L.

Corequisite: EXSC 275L.

EXSC 275L - Functional Musculoskeletal Anatomy Lab (1 Credit)
Clinical application of human anatomy for allied health care professions using discussion, models, and charts. Anatomy relevant to providing health care to individuals.
Prerequisites: EXSC 223 and EXSC 223L.

Corequisite: EXSC 275.

EXSC 303 - Perceptual-Motor Development (3 Credits)
Theoretical foundations and observation of growth and motor development of children, age birth to 10 years. Observation will be provided via video and live subjects provided by the instructor.
Prerequisites: C or higher in both EXSC 224 and EXSC 224L.

EXSC 330 - Exercise Physiology (3 Credits)
The individual and combined roles of the major organ systems of the body in maintaining homeostasis during muscular exercise.
Prerequisites: C or better in EXSC 224 and EXSC 224L.

Corequisite: EXSC 330L.

EXSC 330L - Exercise Physiology Lab (1 Credit)
Laboratory procedures in exercise physiology; measurement of physical fitness components.
Prerequisites: EXSC 224 and EXSC 224L.

Corequisite: EXSC 330.

EXSC 335 - Biomechanics of Human Movement (3 Credits)
Kinetic and kinematic principles governing efficient human movement. Selected methods of analyzing human movement will be reviewed.
Prerequisites: C or better in EXSC 224, EXSC 224L, PHYS 201 and PHYS 201L.

EXSC 341A - Health Fitness Practicum (1 Credit)
First hour of a supervised practicum in a clinical setting for the Health Fitness Track.
Prerequisites: EXSC 223, EXSC 224.

Cross-listed course: EXSC 341B, EXSC 341C

EXSC 341B - Health Fitness Practicum (1 Credit)
Second hour of a supervised practicum in a clinical setting for the Health Fitness Track.
Prerequisites: EXSC 223, EXSC 224, EXSC 341A.

Cross-listed course: EXSC 341A, EXSC 341C

EXSC 341C - Health Fitness Practicum (1 Credit)
Third hour of a supervised practicum in a clinical setting for the Health Fitness Track.
Prerequisites: EXSC 223, EXSC 224, EXSC 341A, EXSC 341B.

EXSC 342A - Practicum in Life-Span Motor Development (2 Credits)
Part I of a supervised practicum in a clinical setting in life-span motor development.
Prerequisites: EXSC 223, EXSC 224, EXSC 303.

Cross-listed course: EXSC 342B

EXSC 342B - Practicum in Life-Span Motor Development (2 Credits)
Part II of a supervised practicum in a clinical setting in a life-span motor development.
Prerequisites: EXSC 223, EXSC 224, EXSC 303, EXSC 342A.

Cross-listed course: EXSC 342A
Graduation with Leadership Distinction: GLD: Research

EXSC 343 - Practicum in Exercise Science (1-3 Credits)
Supervised practicum in a research or clinical setting for scientific-foundations track. Departmental special permission required.
Prerequisites: EXSC 223, EXSC 224.

EXSC 351 - Acquisition of Motor Skills (3 Credits)
Scientific and behavioral foundation of the learning and performance of motor skills.
Prerequisites: EXSC 223, EXSC 224.

Graduation with Leadership Distinction: GLD: Research

EXSC 355 - Special Topics in Exercise Science (1-3 Credits)
Novel and emerging themes in exercise science. Content varies by instructor and title. May be repeated for a total of 6 credit hours as content varies by title.

EXSC 395 - Research Seminar in Exercise Science (3 Credits)
The research process in exercise science; participation in, presentation and discussion of current research.
Prerequisites: EXSC 223, EXSC 224.

Graduation with Leadership Distinction: GLD: Research

EXSC 401 - Practicum Preparation (1 Credit)
Integration of major program of study and general education; issues of transition into senior practicum - EXSC 444.
Prerequisites: EXSC 330.

EXSC 410 - Psychology of Physical Activity (3 Credits)
Introduction to psychosocial factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.
Prerequisites: PSYC 101.

Cross-listed course: PSYC 401

EXSC 444 - Exercise Science Practicum (6 Credits)
Supervised experience in a field, clinical, or research setting. EXSC majors only.
Prerequisites: EXSC 401.

EXSC 454 - Health/Fitness Programs (3 Credits)
Design and implementation of health/fitness programs.
Prerequisites: EXSC 223, EXSC 224.

EXSC 464 - Conditioning Methods in Athletic Performance (3 Credits)
Students will learn how to perform pre-exercise assessments, develop appropriate exercise training programs based on these assessments, as well as lead and demonstrate safe and effective methods of exercise by the application of the primary theories and principles of exercise science.
Prerequisites: C or better in both EXSC 224 and EXSC 224L

EXSC 481 - Practicum in Community Fitness Programs (9 Credits)
Supervised experience in the administration of community-based fitness programs. Concurrent seminar with the supervising instructor.
Prerequisites: EXSC 223, EXSC 224, EXSC 341A, EXSC 330, EXSC 330L, EXSC 531.

Graduation with Leadership Distinction: GLD: Professional and Civic Engagement Internships

EXSC 482 - Internship in Life-Span Motor Development (9 Credits)
Supervised practical experience in clinical and/or field setting; individualized program and activity planning, and evaluation of neuromuscular abilities.
Prerequisites: EXSC 223, EXSC 224, EXSC 303, EXSC 342A, EXSC 342B.

EXSC 483 - Internship in Scientific Foundations (3 Credits)
Supervised experience in a clinical, field, or research setting. Restricted to Exercise Science Majors; Junior and Senior Level Standing.
Prerequisites: EXSC 223, EXSC 224.

EXSC 499 - Independent Study (1-3 Credits)
Enrollment and topic to be approved in advance by advisor and instructor.
Prerequisites: EXSC 223, EXSC 224.

Graduation with Leadership Distinction: GLD: Research

EXSC 507 - Exercise, Sport, and Nutrition (3 Credits)
The relationship between exercise, sport performance, and nutrient metabolism.
Prerequisites: EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

EXSC 531 - Clinical Exercise Physiology (3 Credits)
Scientific bases of clinical exercise programming. The fitness instructor's role in encouraging changes in exercise behavior.
Prerequisites: EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

Corequisite: EXSC 531L.

EXSC 531L - Clinical Exercise Physiology Lab (0 Credits)
Prerequisite: EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

EXSC 541 - Physiological Basis for Strength and Conditioning (3 Credits)
Investigation on the physiological basis for strength and conditioning. Principles of strength and conditioning through lecture based learning, demonstrations, and through laboratory activities.
Prerequisites: C or better in EXSC 330.

EXSC 555 - Current Topics in Exercise Science (1-3 Credits)
Content varies by title. Course may be repeated for a total of 6 credit hours.

EXSC 562 - Impairments of the Human Motor System (3 Credits)
Role of motor development in the growth and development of individuals exhibiting impaired motor control.
Prerequisites: biology, anatomy, physiology, or the equivalent.

EXSC 563 - Physical Activity and the Physical Dimensions of Aging (3 Credits)
The effects of age and physical activity on physical and motor functions of elderly individuals.
Prerequisites: EXSC 223, EXSC 224, EXSC 351, EXSC 330, EXSC 330L.

EXSC 585 - Women's Health and Physical Activity (3 Credits)
Sex differences in diseases, physiological function of sex hormones, hormonal changes in a woman's life, specific women's health issues, and role of physical activity and exercise in prevention and treatment of conditions and diseases specific to women or related to sex hormones. Restricted to 30 students, Special Permission by Instructor.

EXSC 608 - Apps, Wearables and Technology for Lifestyle Behavior Change and Weight Loss (3 Credits)
The course will increase students' understanding of the theoretical foundations, scientific evidence and practical application of technology-assisted lifestyle interventions, with an emphasis on behavioral weight control for adults.
Prerequisites: C or better in EXSC 410.

EXSC 620 - Nutrition and Immunology (3 Credits)
Examination of the interrelationships that link human nutrition to the immune system in health and disease. Topics will include basic immunology, overview of nutritional sources, deficiencies and excesses, and the impact on public health issues such as exercise, disease and aging.
Prerequisites: EXSC 330.

EXSC 626 - Cardiorespiratory Exercise Physiology (3 Credits)
Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.
Prerequisites: EXSC 330.

EXSC 666 - Cardiorespiratory Exercise Physiology (3 Credits)
Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.
Prerequisites: EXSC 330.

EXSC 669 - Skeletal Muscle Physiology: Form and Function (3 Credits)
Skeletal muscle physiology and exercise through select laboratory experiences and discussion of related research literature.
Prerequisites: C or better in both EXSC 330 and EXSC 330L.

EXSC 695 - Writing and Presenting in Research (3 Credits)
The research process in Exercise Science through participation, presentation, and discussion of current research.
Prerequisites: EXSC 224.