

# DEPARTMENT OF EXERCISE AND SPORT SCIENCE (GRAD)

The mission of the Department of Exercise and Sport Science (EXSS) is to discover and promote knowledge of human movement to improve quality of life. Its vision is to transform society by developing leaders and translating scientific knowledge into practical applications. The department prepares individuals to function as scientists, educators, and practitioners. The program offers a master of arts degree in exercise and sport science with specialization in one of three areas: athletic training, exercise physiology, and sport administration. EXSS seeks to provide all students with focused, in-depth knowledge and skills, and an understanding of the challenges facing the areas of athletic training, exercise physiology, and sport administration as well as a global understanding of exercise and sport.

In pursuit of maximum fulfillment of its mission, the department also offers quality practical experiences to students. EXSS has an association with numerous other campus and local area units such as Athletics, Emergency Medicine, Orthopedics, the Duke Center for Living, the Lineberger Comprehensive Cancer Center, Get Real and Heel, the Meadowmont Wellness Center, Campus Health Services, Carolina Adventures, Campus Recreation, the North Carolina High School Athletic Association, and local public parks and recreation departments. Supervised assistantships and internships outside the department help students develop practical skills in the specific fields of study. Furthermore, the requirement of a structured research experience for all master's degree students is an integral part of every student's program of study. Additional research experience opportunities are numerous, and it is an expectation of the department that graduate students will become actively involved in conducting research while studying at UNC-Chapel Hill.

Additional information regarding the Department of Exercise and Sport Science can be found at the department's website (<http://www.unc.edu/depts/exercise/>).

## Admission

The master's degree program in exercise and sport science is open to individuals from diverse backgrounds. However, the majority of past entrants into the program have earned undergraduate degrees in exercise science, kinesiology, physical education, or sport administration/management. The department offers admission to the fall semester only. Potential applicants seeking admission information pertaining to their specific area of specialization should visit the EXSS Graduate Program Admissions page (<http://exss.unc.edu/graduate-programs/admissions/>).

## Application Prerequisites and Requirements

All areas of specialization within the Exercise and Sport Science Master of Arts program have specialization-specific prerequisite coursework and/or experiences for all applicants. Successful completion of an undergraduate statistics class is a prerequisite for all areas of specialization. All applicants must have had a statistics class, or other coursework that includes appropriate content and topics in statistical analysis. Applicants are strongly encouraged to satisfy the statistics prerequisite by having completed an undergraduate statistics class at the time of the application. Advanced Placement credit in statistics will not satisfy this prerequisite, only classes actually taken at the college level. For additional application and admissions information, see the

department's website (<http://www.unc.edu/depts/exercise/>) or The Graduate School's website (<http://gradschool.unc.edu/admissions/>).

## Assistantships

The Department of Exercise and Sport Science awards incoming students teaching and research assistantships to help fund the students' education and to provide practical experiences related to their area of study. Assistantships involve one or more of the following activities: research assistant, teaching assistant for lifetime fitness and physical activity courses, teaching assistant for the exercise and sport science laboratories, certified athletic trainer, or athletic department assistant.

The Department of Exercise and Sport Science's graduate program offers a master of arts degree in exercise and sport science. Applicants to the program must choose between three areas of specialization: athletic training, exercise physiology, and sport administration. The minimum number of semester credit hours required by The Graduate School for the master of arts degree is 30. However, the minimum required by each area of specialization in exercise and sport science varies and typically exceeds 30 hours. Required courses are determined by the faculty in each area of specialization. In addition to course requirements and other required curricular experiences, all students in both the athletic training and exercise physiology areas of specialization must pass a written comprehensive examination on all coursework. Sport administration students must complete an approved substitute for the comprehensive exam in the form of two capstone courses. Students in all three areas of specialization must complete a research thesis, and successfully defend the thesis in a final oral examination on the thesis.

## Specialization Descriptions

### Athletic Training

The Department of Exercise and Sport Science offers a specialization in athletic training at the graduate level which has existed as a post-professional athletic training education program since 1975. The primary mission of the post-professional athletic training education program is to provide a science/practice model designed to educate and develop clinical scholars to be leaders in the field of athletic training. The major objectives for students in the program are

1. to provide advanced experiences that improve clinical skills related to evidence-based clinical practice, and
2. to help students develop the academic skills needed to evolve clinical practice and advance the profession of athletic training.

We recruit graduate students who are Board of Certification certified athletic trainers who have distinguished themselves both academically and as highly competent clinicians. We provide the means for each graduate student to gain advanced knowledge and experience in prevention, evaluation, management, and rehabilitation of sport-related injuries through a combination of didactic lecture in the classroom, supervised practical application of this knowledge in a clinical setting, and a strong science-research experience oriented toward clinical practice. All students admitted to this program serve as teaching assistants in the lifetime fitness program and as athletic trainers in the Department of Athletics. A comprehensive examination on all coursework and a research thesis are required of all students. The athletic training program's website (<http://exss.unc.edu/graduate-programs/specializations/athletic-training/>) contains additional detailed information.

## Exercise Physiology

The mission of the exercise physiology specialization is to prepare students to pursue research careers in exercise physiology related fields, biomedical industries, or careers in the fitness/wellness industry. Biomedical and wellness careers include sport settings, hospital fitness centers or clinics, academic or industry research assistants/coordinators, or biotechnology industry.

Students preparing for research careers or Ph.D. programs are provided an advanced understanding of how the physiological constructs are applied to exercise and the environment, as well as knowledge of the research process. Additionally, those students are provided the opportunity to develop laboratory techniques and acquire laboratory skills. Students preparing for a career in the fitness/wellness field are provided background, testing skills, and practical experience to succeed in a variety of settings. Many exercise physiology graduate students, no matter the area of focus, have presented research at national and regional science conferences, as well as other professional meetings.

## Sport Administration

The mission of the sport administration specialization is to integrate theory and practice to prepare graduate students for leadership positions in intercollegiate athletics. Within a two-year learning experience, the sport administration graduate student cohort, consisting of a highly select and diverse group of students from across the United States, engages in both formal coursework and intense practical experiences designed to prepare for a college sport administration career. During their first year, students are provided challenging coursework in administration, economics/finance, legal issues, sport marketing, governance and compliance, research methods/statistical analyses, and sport facility and event management. In addition, students engage in extensive hands-on event-operations experiences with the UNC Athletic Department. During the second year, students complete a full-time, one-year internship in an administrative area within the UNC Department of Athletics, a capstone two course sequence, and a research thesis. Thirty-two hours of graduate coursework are required. The program's website (<http://exss.unc.edu/graduate-programs/specializations/sport-administration/>) contains additional information.

## Law and Sport Administration Dual-Degree Program (J.D.–M.A.)

The dual-degree program provides an opportunity for students who are interested in both law and sport administration to earn both degrees over four years of study. Students benefit from a respected law curriculum, combined with a sport administration curriculum with a unique focus on intercollegiate athletics. There is a growing market in college athletics for professionals with both degrees. Graduates of the dual-degree program may work in athletic compliance and enforcement at a university, conference office, or national governing body such as the National Collegiate Athletic Association (NCAA). Legal positions in athletic departments, fundraising and development, and law firms that represent colleges and conferences are also likely. To be eligible to apply for the J.D.–M.A. dual-degree program students must be currently enrolled in their second year in the UNC–Chapel Hill School of Law. Students will be responsible for paying tuition and fees separately to both the Law School and The Graduate School. The M.A. in exercise and sport science must be completed prior to or simultaneously with completion of the J.D. degree. Completion of the M.A. requires successful completion of all required

exercise and sport science courses, a capstone two-course sequence, and a research thesis.

## Business and Sport Administration Dual-Degree Program (M.B.A.–M.A.)

The dual-degree program provides an opportunity for students who are interested in both business administration and sport administration to earn both degrees over four years of study. The UNC–Chapel Hill Kenan–Flagler Business School (M.B.A. program) and the UNC–Chapel Hill Department of Exercise and Sport Science program offer a graduate dual-degree option. The M.B.A./M.A. (EXSS) dual program consists of a minimum of three (3) academic years of full-time study. Students must complete a minimum of 62.0 credit hours through the Kenan–Flagler Business School for the degree of master of business administration (M.B.A.) and a minimum of 32.0 credit hours through the Department of Exercise and Sport Science for the degree of master of arts (M.A. EXSS) in sport administration. M.B.A. dual-degree students are eligible to receive a maximum of 12.0 credit hours (just under 20 percent) of elective credits towards their M.B.A. degree requirements from courses completed within the EXSS program.

## Ph.D. Study

The interdisciplinary program of study in human movement science is designed to provide students from various fields an opportunity to pursue doctoral studies in human movement science. The Department of Health Sciences grants the degree. Unique foci of the program are on maintaining health, preventing disability, and improving movement ability in persons with movement problems. The program provides training through a rigorous research curriculum of didactic and research experiences, and an interdisciplinary emphasis provided by faculty, coursework, and students. The curriculum combines core requirements for all students in the program while allowing for considerable flexibility in designing programs of study to meet the needs of a specific student's interests. A key feature of this program is the interdisciplinary orientation of faculty and the combined efforts of several successful programs that span across campus and beyond. The program reflects the ongoing interest, planning, and cooperation of the following departments and schools at UNC–Chapel Hill: the Department of Health Science's Division of Physical Therapy, the Department of Exercise and Sport Science, the joint UNC–NCSU Biomedical Engineering Program, the Gillings School of Global Public Health and its Department of Epidemiology, and the UNC School of Medicine's Department of Orthopedics and Department of Physical Medicine and Rehabilitation.

The mission of the program is to prepare scholars to be exceptional interdisciplinary researchers, educators, and leaders in the field of human movement. Program graduates will excel as independent researchers and future leaders in addressing scientific problems related to human movement in a global, integrated manner for the benefit of society. HMSC faculty members conduct applied and translational research using interdisciplinary approaches focused on healthy and impaired human movement. Research conducted through the program reflects the complexity and interdependence of the multiple systems underlying movement and ultimately will promote health and physical well-being. Students of varied academic disciplines are accepted into the program and study across the spectrum of sport injury epidemiology, biomechanics, exercise physiology, and neuromuscular control/motor learning. The curriculum's website (<http://hmsc.unc.edu>) contains additional information.

Following the faculty member's name is a section number that students should use when registering for independent studies, reading, research, and thesis and dissertation courses with that particular professor.

## Distinguished Professors

**Kevin M. Guskiewicz (24)**, Sports Medicine, Anatomy  
**Darin A. Padua (22)**, Anatomy, Biomechanics, Sports Medicine

## Professors

**Claudio L. Battaglini (32)**, Clinical Exercise Physiology, Exercise Assessment and Prescription  
**J. Troy Blackburn (33)**, Biomechanics, Neuromuscular Control, Sports Medicine  
**Anthony C. Hackney (21)**, Exercise Physiology, Metabolism and Endocrinology  
**Jason P. Mihalik (40)**, Traumatic Brain Injury, Sports-Related Traumatic Brain Injury  
**Barbara Osborne (29)**, Legal Issues, Sport Administration  
**Brian G. Pietrosimone (45)**, Sports Medicine, Joint Injury, Neuromuscular Control  
**William E. Prentice (15)**, Athletic Training, Sports Medicine  
**Eric D. Ryan (41)**, Exercise Physiology, Muscle Function  
**Abbie E. Smith-Ryan (43)**, Exercise Physiology, Metabolism and Body Composition  
**Erienne A. Weight (42)**, College Sport Business (Entrepreneurship, Management, Finance)

## Associate Professors

**Erik D. Hanson (48)**, Clinical Exercise Physiology, Muscle Physiology, Immunology  
**Jonathan Jensen (52)**, Sport Marketing, Sport Analytics, Consumer Behavior  
**Zachary Kerr (50)**, Epidemiology, Traumatic Brain Injury, Injury Prevention Evaluation  
**Kristen L. Kucera (46)**, Sports/Occupational Injury Epidemiology, Musculoskeletal Disorders, Surveillance Exposure Assessment  
**Michael D. Lewek (51)**, Biomechanics  
**Nels K. Popp (47)**, Revenue Generation within College Athletics, Sport Sales, International Sport  
**Johna Register-Mihalik (44)**, Athletic Training, Sports Medicine  
**Lee Stoner (53)**, Cardiometabolic, Lifestyle Pediatric, Measurement  
**Erik A. Wikstrom (49)**, Athletic Training, Neuromuscular Control, Sports Medicine

## Assistant Professors

**Shelby E. Baez (64)**, Psychology of Sport Injury  
**Malia Blue (60)**, Cardiometabolic Health, Body Composition, Performance and Injury Risk  
**Jimikaye B. Courtney (63)**, Advanced Data Analytics  
**Adam W. Kiefer (55)**, Neuromuscular Control, Sports Medicine, Sports-Related Traumatic Brain Injury

## Teaching Professor

**Meredith A. Petschauer (34)**

## Teaching Associate Professors

**Alain J. Aguilar (58)**  
**Jonathan D. Defreese (54)**

## Teaching/Clinical Assistant Professors

**Rebecca L. Battaglini**  
**Benjamin M. Goerger**  
**Wayne McDonnell Jr.**  
**Aliza K. Nedimyer (62)**  
**Kristin S. Ondrak (57)**  
**Anthony F. Petterson**  
**Leon R. Schimmelfing**  
**Danielle M. Smith (56)**

## Research Associate Professor

**Wesley R. Cole**

## Research Assistant Professor

**Gena R. Gerstner**

## Lecturers

**James Ayscue**  
**John F. Brunner**  
**Richard T. Kagan**  
**Greg Moore**  
**James Strong**  
**Nina Walker**  
**Sunny Yu**

## Post-Doctoral Research Associates

**Thomas Birchmeier**  
**Madison Chandler**  
**Simon Higgins**  
**Cortney Lago**  
**Caroline Lisee**  
**Craig Paterson**  
**Aaron Sinnott**

## Adjunct Professors

**David J. Berkoff**, Orthopaedics  
**Deborah L. Givens**, Allied Health Sciences  
**Michael T. Gross**, Allied Health Sciences  
**Stephen W. Marshall**, Injury Prevention  
**Karen L. McCulloch**, Allied Health Sciences  
**Todd Schwartz**, Biostatistics

## Adjunct Associate Professors

**Kevin A. Carneiro**, Physical Medicine Rehabilitation  
**Vicki S. Mercer**, Allied Health Sciences

## Adjunct Assistant Professors

**Avinash Chandran**  
**Shawn Kane**  
**James Lynch**  
**Michael Mazzoleni**

## Professor of the Practice

**Richard A. Baddour**

## Professors Emeriti

**M. Deborah Bialeschki**

John E. Billing  
 Bonita L. Marks  
 Robert G. McMurray  
 Frederick O. Mueller  
 John M. Silva

## Teaching Professor Emerita

Sherry Salyer

### Advanced Undergraduate and Graduate-level Courses

#### EXSS 408. Theory and Application of Strength Training and Conditioning for Fitness Professionals. 3 Credits.

Instructor may approve equivalents for prerequisites. This is an intermediate- to upper-level course designed to provide students with theoretical and practical knowledge of the physiological, biomechanical, functional, and administrative aspects of designing and supervising conditioning programs for various populations.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175 and 276.

**Grading Status:** Letter grade.

#### EXSS 409. Exercise Prescription for Special Populations. 3 Credits.

Exercise benefits everybody. This course will teach evidence-based information for developing, modifying and implementing fitness programs for individuals with chronic disease, metabolic, cardiac, pulmonary, and other issues deemed as special populations. The knowledge and skills attained in this course will enhance any basic personal training certification and give a better understanding of working with what could be considered the general public.

##### Rules & Requirements

**Requisites:** Prerequisite, EXSS 175, 276, and 376.

**Grading Status:** Letter grade.

#### EXSS 410. Exercise Testing and Prescription. 4 Credits.

Students must take laboratory section along with class. This is an upper division undergraduate course designed to provide the theoretical and practical knowledge in basic exercise testing and prescription for both healthy and select special populations.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175, 276 and 376.

**Grading Status:** Letter grade.

#### EXSS 420. Program Planning in Recreation Services. 3 Credits.

This experiential course covers the concepts and skills used in program planning. Students apply their program planning skills to real-life situations and implement a recreation program for a community agency. Previously offered as RECR 420.

##### Rules & Requirements

 **IDEAs in Action Gen Ed:** HI-SERVICE.

**Making Connections Gen Ed:** EE- Service Learning.

**Grading Status:** Letter grade.

#### EXSS 424. Sport Sales and Revenue Production Seminar. 3 Credits.

This course will analyze and produce skills essential to the revenue production and sales process commonly found in the sport business. In this class students will develop an understanding and appreciation for the sales and revenue-production process related to a sport franchise and/or organization.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 221 and EXSS 322.

**Grading Status:** Letter grade.

#### EXSS 430. Introduction to Leadership and Group Dynamics. 3 Credits.

An analysis of the techniques, methods, and motives of group and community leaders. Special attention is focused upon the roles of organizational structure, personnel policies, and in-service training programs. Previously offered as RECR 430.

##### Rules & Requirements

**Making Connections Gen Ed:** CI.

**Requisites:** Prerequisite, EXSS 221.

**Grading Status:** Letter grade.

#### EXSS 433L. Exercise Technique. 1 Credits.

This course is designed to teach students how to lead and coach a group of individuals toward movement proficiency in common athletic-based exercises.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175 and EXSS 276.

**Grading Status:** Letter grade.

#### EXSS 450. Essentials of Corrective Exercise Training. 3 Credits.

This course provides students with knowledge and experience in designing corrective exercise programs. Students will learn to assess posture, movement quality, range of motion, and strength. Students will also learn to correct abnormalities exercises for various body parts. Knowledge will be gained via lecture and laboratory activities. Previously offered as EXSS 350.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175 and 276.

**Grading Status:** Letter grade.

#### EXSS 475. Functional Anatomy. 3 Credits.

This course provides an in-depth exploration of joint mechanics. It exposes students to motions of the cervical, thoracic, and lumbar spine as well as the extremities, and relates these concepts to movement of the body during specific activities.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175, 276, and 385.

**Grading Status:** Letter grade.

#### EXSS 478. Sports Performance Training. 3 Credits.

An upper-level course designed to provide students who have a fitness background with the theoretical and practical knowledge related to the Performance Enhancement Specialization for athletes of all ages.

##### Rules & Requirements

**Requisites:** Prerequisites, EXSS 175 and 276.

**Grading Status:** Letter grade.



**EXSS 479. Performance Enhancement Specialization for Health Professionals. 1 Credits.**

An upper-level course designed to provide students who have a health profession background with the theoretical and practical knowledge related to the Performance Enhancement Specialization for athletes.

**Rules & Requirements**

**Requisites:** Prerequisites, EXSS 175, 276, 366, and 368.

**Grading Status:** Letter grade.

**EXSS 493. Field Experience in Sport Administration. 3 Credits.**

This field experience offers implementation of theory and the practical application of sport administration in a sport organization worksite, under the direct supervision of a business professional.

**Rules & Requirements**

**IDEAs in Action Gen Ed:** HI-INTERN.

**Making Connections Gen Ed:** EE- Academic Internship.

**Requisites:** Prerequisites, EXSS 221 and at least two of the following: EXSS 322, 323, 324, 326; permission of the instructor required for students lacking the prerequisites.

**Repeat Rules:** May be repeated for credit. 6 total credits. 2 total completions.

**Grading Status:** Letter grade.

**EXSS 576. Exercise Endocrinology. 3 Credits.**

Advanced course examining the responses of the endocrine system to exercise and the adaptations that occur with exercise training. Provides the fundamentals necessary for exercise science and allied health science students to understand the integral role that the endocrine system plays in exercise.

**Rules & Requirements**

**Requisites:** Prerequisites, EXSS 175, 276, and 376.

**Grading Status:** Letter grade.

**EXSS 580. Neuromechanics of Human Movement. 3 Credits.**

This course explores interactions between the nervous and musculoskeletal systems via integration of concepts from neuroanatomy, neurophysiology, anatomy, neuromuscular control, and biomechanics. Topics include muscle mechanics, sensorimotor function, joint stability, movement disorders, neurocognition, and neuroplasticity following injury and disease. Course meetings involve both lecture and laboratory content.

**Rules & Requirements**

**Requisites:** Prerequisites, EXSS 175, 380, and 385.

**Grading Status:** Letter grade.

**EXSS 593. Practicum in Physical Fitness and Wellness. 1-9 Credits.**

Recommended preparation, EXSS 360 - site dependent. Current CPR certification and student liability insurance is required. Introductory practical experience to enable student to apply knowledge and skills in a worksite under direct supervision of certified professionals.

**Rules & Requirements**

**IDEAs in Action Gen Ed:** HI-INTERN.

**Making Connections Gen Ed:** EE- Academic Internship.

**Requisites:** Prerequisites, EXSS 220, 408, and 410; and one of EXSS 380 or 385.

**Repeat Rules:** May be repeated for credit. 9 total credits. 9 total completions.

**Grading Status:** Letter grade.

**EXSS 693H. Senior Honors Thesis. 3 Credits.**

Required preparation, a cumulative grade point average meeting the University standard and permission of the department. Directed independent research under the supervision of a faculty advisor who teaches in the exercise and sport science curriculum.

**Rules & Requirements**

**IDEAs in Action Gen Ed:** RESEARCH.

**Making Connections Gen Ed:** EE- Mentored Research.

**Requisites:** Prerequisite, EXSS 273.

**Grading Status:** Letter grade.

**EXSS 694H. Senior Honors Thesis. 3 Credits.**

Required preparation, a cumulative grade point average meeting the University standard and permission of the department. Preparation of an honors thesis and an oral examination on the thesis.

**Rules & Requirements**

**IDEAs in Action Gen Ed:** RESEARCH.

**Making Connections Gen Ed:** EE- Mentored Research.

**Requisites:** Prerequisite, EXSS 273.

**Grading Status:** Letter grade.

**Graduate-level Courses****EXSS 700. Applied Statistics and Research Methods in Exercise and Sport Science. 3 Credits.**

Required preparation, undergraduate statistics course. Applied statistical analysis - interpretation of data from exercise and sport science. Emphasis: choosing method of analysis, using statistics software to run analyses. Major topics: experimental and nonexperimental research design, sampling, hypothesis testing, power calculation, t-tests, ANOVA, correlation, simple and multiple regression, and chi square.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 705. Research Design and Methods. 1-3 Credits.**

Required preparation, any undergraduate statistics course. Builds heavily upon material presented in EXSS 700. Planning, conducting, and reporting of research. Thesis writing and writing for publication. Problem-solving and practical experience in applied statistical analysis, interpretation, and presentation of data from the field of exercise and sport science.

**Rules & Requirements**

**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.

**Grading Status:** Letter grade.

**EXSS 730. Management of Athletic Injuries. 3 Credits.**

Permission of the instructor for nonmajors. Designed to provide basic knowledge and skills that aid in the prevention and treatment of injuries common to athletics.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 732. Human Anatomy for Athletic Trainers. 4 Credits.**

Graduate standing in exercise and sport science or permission of the instructor. The study of gross human anatomy, with emphasis on the functional and clinical aspects of the neck, back, and extremities as related to athletic injuries.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 733. Psychological Considerations for Injury and Rehabilitation. 3 Credits.**

Athletic training graduate students only. Psychological impact of injury and rehabilitation on the injured athlete. Stress from injury, coping skills for the rigors of rehabilitation, and the improvement of communication skills in order to better the relationship between the athletic trainer, the injured athlete, and the injured athlete's coach.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 735. Sports Medicine Analysis: Special Problems Related to Sports Medicine. 3 Credits.**

Permission of the instructor for nonmajors. Problem and research oriented.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 736. Clinical Methods in Athletic Training. 3 Credits.**

Analysis of theories and techniques used in clinical sports medicine settings.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 730.

**Grading Status:** Letter grade.

**EXSS 737. Advanced Muscular Assessment and Treatment. 3 Credits.**

Discussion of mechanical properties and healing of musculoskeletal tissues throughout the life cycle, and laboratory/seminar units concerned with assessment and treatment of musculoskeletal pathology.

**Rules & Requirements**

**Requisites:** Prerequisites, EXSS 730, 732, and 736; Permission of the instructor for students lacking the prerequisite.

**Grading Status:** Letter grade.

**EXSS 738. Laboratory Techniques in Sports Medicine. 3 Credits.**

This course provides an introduction to measurement techniques used in sports medicine/athletic training research. Course meetings involve lecture and laboratory sessions which encompass data collection, analysis, and interpretation techniques.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 739. Practicum in Athletic Training. 3 Credits.**

Graduate standing in exercise and sport science or permission of the instructor. The implementation of theories and practices in a professional setting under the direction of a competent practitioner.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 740. Administration of Sport. 3 Credits.**

Permission of the instructor for nonmajors. Policies and problems of organization and administration of athletic programs in colleges.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 742. Social Issues in Exercise and Sport. 3 Credits.**

A comprehensive study of race and gender discrimination, adherence, value development, violence, and other socialization factors in youth, collegiate, and Olympic sport.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 744. Collegiate Sport Marketing. 3 Credits.**

Graduate standing required. This course is designed to develop a thorough understanding of sport marketing principles and their application to collegiate athletics.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 746. Organizational and Financial Management of Sport. 3 Credits.**

Graduate standing in exercise and sport science or permission of the instructor. The study of administrative structures and financial concerns of collegiate athletic programs. An intensive study of NCAA regulations is included.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 747. College Sport Facility and Event Management. 3 Credits.**

This course provides students with necessary knowledge and skills to manage college-sport facilities and plan a complete sport event. Students also evaluate facility functions related to risk and event management.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 748. Legal Issues in Collegiate Sport. 3 Credits.**

Provides an introduction to the United States legal system, legal principles, and legal issues related to intercollegiate athletics.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 749. NCAA Governance and Compliance. 3 Credits.**

The implementation of theories and practices in a professional setting under the direction of a competent practitioner.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 740.

**Grading Status:** Letter grade.

**EXSS 750. Sport Administration Leadership Seminar I. 1 Credits.**

Successful completion of first year in sport administration graduate program. An introduction of organizational leadership concepts in a practical applied context. Students will lead class discussion tying relevant current events with leadership theory.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 751. Sport Administration Leadership Seminar II. 1 Credits.**

Successful completion of first year in sport administration graduate program. An introduction of organizational leadership concepts in a practical applied context. Students will lead class discussion tying relevant current events with leadership theory.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 770. Motor Learning. 3 Credits.**

A study of the physical and psychological factors that influence skill acquisition and performance in sport and exercise, including applications to teaching and coaching.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 380; Permission of the instructor for students lacking the prerequisite.

**Grading Status:** Letter grade.

**EXSS 780. Physiology of Exercise. 3 Credits.**

The study of the physical, biochemical, and environmental factors that influence human performance. Emphasis is placed on metabolic, cardiovascular, respiratory, muscular, and endocrine systems. Three hours of lecture and two hours of laboratory per week.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 276 or 376.

**Grading Status:** Letter grade.

**Same as:** HMSC 702.

**EXSS 781. Clinical Exercise Prescription and Testing. 2-3 Credits.**

This course concentrates on the knowledge and skills necessary for providing exercise testing and prescription in the clinical setting, emphasizing cardiac rehabilitation.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 376; permission of the instructor for students lacking the prerequisite.

**Grading Status:** Letter grade.

**EXSS 782. Nutritional Aspects of Exercise. 2-3 Credits.**

Graduate standing in physical education or permission of the instructor. Exploration of the role of macronutrients and micronutrients as they apply to exercise, physical conditioning, and competition. Students obtain experience in dietary analysis as it applies to athletic populations.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 783. Assessment of Physiological Functions in Exercise. 3 Credits.**

Designed to develop laboratory techniques and experimental design skills as applied to the physiology of human performance.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 780; Permission of the instructor for students lacking the prerequisite.

**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.

**Grading Status:** Letter grade.

**EXSS 784. Advanced Topics in Exercise Physiology. 3 Credits.**

Required preparation, completion of a graduate level exercise physiology course. Graduate standing required. This course deals with current and rapidly developing aspects of the exercise physiology field. Specifically enhancing and adding to the content area of basic physiology acquired in EXSS 780.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 785. Seminar in Exercise Physiology. 3 Credits.**

Graduate standing in exercise and sport science or permission of the instructor. In-depth study of selected advanced topics in exercise physiology. Emphasis on metabolism, biochemical, and cardiorespiratory physiology, with student presentations on selected topics.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 789. Practicum in Exercise Physiology. 3-4 Credits.**

The implementation of theories and practices of fitness or cardiac rehabilitation in a professional setting under the direction of an experienced practitioner.

**Rules & Requirements**

**Requisites:** Prerequisite, EXSS 410L, 780, or 781; permission of the instructor for students lacking the prerequisite.

**Grading Status:** Letter grade.

**EXSS 890. Special Topics in Exercise and Sport Science. 1-3 Credits.**

Graduate standing or permission of the instructor. The study of special topics directed by an authority in the field.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 990. Research in Exercise and Sport Science. 1-3 Credits.**

Graduate standing in exercise and sport science or permission of the instructor. Individually designed research projects conducted by students under the direction of a graduate faculty member.

**Rules & Requirements**

**Grading Status:** Letter grade.

**EXSS 993. Master's Research and Thesis. 3 Credits.****Rules & Requirements**

**Repeat Rules:** May be repeated for credit.

## Contact Information

**Department of Exercise and Sport Science**

Visit Program Website (<https://exss.unc.edu/>)

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