

# EXERCISE SCIENCE (EXSC)

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## **EXSC 100. Intro to Wellness & Fitness. (4 Credits)**

This course presents a basic understanding of physical fitness as it relates to health and disease. Emphasis is placed on safe, effective, techniques for developing all components of physical fitness. Course assists students in critically evaluating exercise information promoted by the media. Includes discussion of the many and varied career opportunities in exercise science. 4 credits (3 lecture hours and 2 lab hours per week), fall and spring semester

## **EXSC 101. Fieldwork in EXSC. (1 Credit)**

This course is designed to provide the student with his/her first practical experience in the corporate, clinic and/or community setting. The primary objective of this practicum is to give the student an opportunity to closely observe the daily operations of a facility in which exercise is used. This experience is intended to assist the student in determining potential areas of interest for the senior internship. Prerequisite: EXSC 100 1 credit (45 fieldwork hours), spring semester

## **EXSC 200. Exercise Physiology I. (4 Credits)**

EXSC 200 examines sport and exercise (primarily cardiovascular exercise) are assessed from a strong scientific and physiologic perspective. Topics covered include the body's acquisition and use of energy to fuel daily activities and exercise. Foundational muscular and cardiovascular physiology are evaluated, with an emphasis on how these systems adapt to training and exercise. Laboratory classes apply the principles learned in class to actual physiological experiments. This class has an associated lab fee. Prerequisite or Co-requisite: MAGN 101 4 credits (3 lecture hours and 3 laboratory hours per week), fall semester

## **EXSC 201. Exercise Physiology II. (4 Credits)**

EXSC 201 will continue the study the body's acquisition and use of energy to fuel daily activities and exercise, but with a more in depth view than was covered in the prerequisite EXSC 200 course. Students will become familiar with the chemical reactions involved in these energetic processes. The body's nervous system, and how electronic signals are sent throughout the body in order to elicit a required response. This will serve as a foundation for a more in depth discussion of the cardiac conduction system, and how the conduction of electricity through the heart can be mapped on an ECG. Students will also investigate the respiratory system, acid-base & temperature regulation, and how these factors adjust in response to exercise. Time permitting, training for higher performance will also be investigated. Prerequisite: EXSC 200 4 credits (3 lecture hours and 3 laboratory hours per week), spring semester

## **EXSC 300. Sport & Exercise Psychology. (3 Credits)**

This course introduces the student to the psychological factors that influence individual and group sport and exercise participation. Topics include the influence of personal psychology and the environment on athletic performance, techniques to enhance athletic and exercise performance and adherence, and the dynamics of group processes as they relate to sports. Discussion to address psycho-social factors related to the healthy psychological growth and development of children including aggression, character development, and sportpersonship. Prerequisite: PSYC 101, fall semester 3 credits (3 lecture hours per week)

## **EXSC 301. Kinesiology & Applied Anatomy. (4 Credits)**

EXSC 301 examines the anatomical structures and mechanical aspects of human movement. Basic neuromuscular and biomechanical principles are introduced. Emphasis is placed on understanding the functional anatomy of the musculoskeletal and articular systems; the course will culminate in students utilizing knowledge of these systems to evaluate posture, locomotion, and a complex motion of their choice. Laboratory exercises concentrate on the role of muscle and joint action during basic movements. Students will be required to apply their knowledge of anatomy towards understanding individual joint function as well as the integrated function of several joints during complex activities such as normal human locomotion. Prerequisites: C- or better in BIOL 150 Pre- or Co-requisite: PHYS 107 4 credits (3 lecture hours and 2 laboratory hour per week), fall semester

## **EXSC 304. Community Service in Sport Sci. (1 Credit)**

This course is designed to enable the student to participate in and to lead volunteer work in the community promoting health and fitness. This experience emphasizes donating time to promote community well-being through application of a variety of skills developed in Exercise Science classes. The experience may include work at health or wellness fairs, at county health department functions, or in public schools. Pre- or Co-requisite: EXSC 201 Prerequisites: MAST 100 and permission of the faculty member. 1 credit (45 fieldwork hours), spring semester

## **EXSC 305. Fitness Assess and Ex Rx. (4 Credits)**

EXSC 305 develops the rationale for, and the skills required to evaluate and prescribe health-related fitness programs for individuals. Students will learn the theory underpinning cardiovascular, musculoskeletal and body composition assessment, then how this theory can be applied practically in designing appropriate exercise prescriptions. The practical laboratory also includes a component on exercise leadership in a facility setting, designed to prepare students for the professional setting of the Wellness Center Internship (EXSC 402). The course is also intended to help prepare the student to sit for a number of national certification exams. Prerequisite: EXSC 201 4 credits (3 lecture hours, 3 laboratory hours), spring semester

## **EXSC 310. Exercise for Cancer Population. (3 Credits)**

This course will prepare students to assess, train, supervise and motivate Wellness Center clients who are currently undergoing cancer treatment, have recently completed cancer treatment, or experience ongoing symptoms that require specific consideration. Students will extend their understanding of exercise assessment and prescription theory to incorporate the limitations that accompany a cancer treatment regimen, as well as the help improve negative effects of treatment that linger long after treatment is complete. Working in this manner with the cancer community is an element of the EXSC 402 Wellness Center Internship requirement for this major. Prerequisites: BIOL 150 and EXSC 305 3 credits (3 lecture hours)

## **EXSC 400. App Strength Cond Principles. (3 Credits)**

Provides students with the ability to develop and to implement sport-specific training programs, including periodization of the training cycle. Sport-specific conditioning of aerobic and anaerobic systems, including strength training, and discussion of short- and long-term benefits of specialized programs. Emphasis will be on appraisal and determination of individualized training needs and the establishment of personal performance goals. Includes instruction in the proper techniques and execution of training activities, as well as skill development in client education. Practical mastery is included. Prerequisite: EXSC 201 3 credits (3 lecture hours), fall semester

**EXSC 401. Cardiopulmonary Assess for Ex. (3 Credits)**

Integration of cardiorespiratory physiological concepts into the assessment of an individual's aerobic capacity and the application of these data in designing an effective aerobic exercise program. ACSM Guidelines will be followed. Prerequisite: EXSC 305 3 credits (3 lecture hours), fall semester

**EXSC 402. Wellness Center Internship. (3 Credits)**

Experience in the operation of the SUNY Morrisville Wellness facility and in the promotion of wellness concepts on campus. Student assumes a leadership role in the wellness center performing administrative as well as practical exercise-related tasks including exercise testing, exercise programming, facility supervision, and client monitoring. Students participate in wellness promotions on campus including health fairs, dorm meetings, health center seminars, etc. Student works under direction of the center supervisor and a faculty sponsor. Pre- or Co-requisites: EXSC 401, and permission of the faculty member. 3 credits (135 fieldwork hours), fall and spring semesters

**EXSC 403. Ex Phys Special Populations. (3 Credits)**

EXSC 403 evaluates the impact of various disease processes in the cardiovascular and musculoskeletal assessment of an affected client. Diseases discussed reflect common contemporary diseases that students are likely to encounter in a professional situation, but, time permitting, may be adjusted to suit student interests. Typical topics include diabetes, chronic heart disease, COPD, HIV/ AIDS and arthritis. Because this is a 400 level class, recent research related to these topics is also reviewed, analyzed, discussed in class and assessed in in-semester and final exams. Prerequisite: EXSC 305 3 credits (3 lecture hours), fall semester

**EXSC 404. Fitness Leadership and Admin. (3 Credits)**

Prepares the student to manage and operate a health/fitness program. Provides instruction in the areas of decision making, problem solving, personnel issues, fiscal policies, budgetary procedures, legal foundations, and facility management. Pre- or Co-requisite: EXSC 402 3 credits (3 lecture hours), spring semester

**EXSC 405. EXSC Internship. (6 Credits)**

Capstone experience for all Exercise Science majors. A practical learning experience in an exercise setting. Sites include corporate fitness centers, wellness clinics, university fitness facilities, and community-based health clubs. Students are involved with day-to-day operations of the agency. Involves variable 270 - 540 hours of work at chosen agency. Corequisite: EXSC 400, EXSC 401, EXSC 403 and permission of faculty member  
Variable 6 Credits (270 fieldwork hours), fall and spring semester