

EXS: EXERCISE SCIENCE

Courses

EXS 101. Group Exercise Leadership. 2 Credits.

The major goals of this course are to provide students with professional instruction on how to teach a variety of group exercise classes by applied learning techniques, to be able to lead exercise classes for all levels of fitness and for a wide variety of participants, including children, the elderly, and other special populations, and to modify moves to accommodate them. This course is designed to prepare the student to pass a nationally accredited certification exam for group exercise leadership.

EXS 102. Fundamentals of Resistance Training Techniques. 2 Credits.

Resistance training, also called weight training or strength training, is structured exercise in which muscles of the body are forced to contract under tension using weights, body weight, or other devices in order to stimulate growth, strength, power and endurance. This course provides the beginner student with hands-on experience using these various methods along with instruction on proper exercise technique and safety precautions.

EXS 103. Fundamentals of Group Exercise and Resistance Training. 3 Credits.

This course is intended to provide the student with the content knowledge and practical experience concerned with teaching group exercise classes as they develop oral communication skills. Furthermore, this class will provide the student with the skills necessary to properly perform essential exercises and the knowledge to teach others about the proper training techniques and form for the major muscle groups using a variety of exercises, free-weights, and machines.

Gen Ed Attribute: Speaking Emphasis

EXS 180. Lifetime Fitness Concepts. 3 Credits.

Designed to provide an interdisciplinary understanding of the relationship between lifestyle, physical fitness, and health and well-being.

EXS 199. Exercise Science Transfer Credits. 1-10 Credits.

Transfer Credits
Repeatable for credit.

EXS 222. Introduction to Medical Terminology and Drug Classifications. 2 Credits.

This course offers an introduction to common clinical abbreviations and medical terms through an analysis of their construction including prefix, suffix, root, connecting and combining forms. The student acquires an understanding of medical meanings applicable to structure, function and diseases of the human body. Students will also learn how drugs are classified and for what major conditions they are used and learn how to use the Physicians Desk Reference. Distance education offering may be available.

EXS 223. Kinetic Anatomy. 2 Credits.

The purpose of this course is to lay the foundation for students to learn how anatomy affects movement of the human body. The course will build upon, reinforce, and challenge the student's basic knowledge of structural anatomy with the intention of acquiring a mastery of basic concepts in this discipline. Presentation of concepts will begin with whole body orientation by region, and then work additively and systematically from skeletal anatomy identifications and joint structure / alignment analysis, through muscular and neurovascular investigation to provide a comprehensive study of clinically applied structural anatomy.

EXS 223 Prerequisite: Successful completion of BIO 259 with minimum grade of D-.

EXS 241. Body Systems and Applied Anatomy I. 3 Credits.

This class introduces basic anatomical and physiological concepts critical to understanding human movement, exercise, physical education and how the human body functions. The class examines the anatomy, physiology and exercise physiology of the skeletal and muscular systems. Throughout the course, special attention will be paid to the impact of development (growth and maturation) on the systems covered. Students will be required to apply these anatomical and physiological principles to physical education, exercise and sport.

EXS 270. Motor Learning. 3 Credits.

This course examines the behavioral, physiological, and psychological principles underlying motor control and motor learning. Specific topics include classifications and measurement of motor performance; the role and function of sensory processes, perception, memory, and attention; and the delivery of feedback and structure of practice.

Distance education offering may be available.

EXS 280. The Exercise Science Profession. 1 Credit.

This course introduces students to the background of the exercise science profession, the meaning of professionalism, the Code of Ethics for the profession, certification options available within the field, relevant professional organizations, the relationship of the exercise scientist to the healthcare network, the scope of exercise science practice and various career options. In addition, students will learn about the academic requirements and curricular issues related to the Bachelor of Science in Exercise Science. Also students will understand how to build an impressive portfolio to support subsequent opportunities. Lastly, alternative career options and graduate education will be explored.

EXS 361. Body Systems and Applied Anatomy II. 3 Credits.

This class introduces basic anatomical and physiological concepts critical to understanding human movement, exercise, physical education and how the human body functions. The class examines the anatomy, physiology and exercise physiology of the following systems: nervous, endocrine, cardiovascular, respiratory, digestive, and renal systems. Metabolism and the generation of energy will also be discussed. Throughout the course, special attention will be paid to the impact of development (growth and maturation) on the systems covered. Students will be required to apply these anatomical and physiological principles to physical education, exercise and sport.

EXS 362. Biomechanics. 3 Credits.

This course is intended to provide the student with a fundamental understanding of selected mechanical and anatomical laws of motion, actions caused by forces and their application to the study of mechanical structure and analysis of motion. Students will be able to use and apply these principles to various forms of movement.

EXL 362 Prerequisite: Successful completion of EXS 223; PHY 100 or PHY 130, with minimum grades of D-. Corequisite: EXL 362.

EXS 375. Sport and Exercise Psychology. 3 Credits.

This course is designed for students interested in the psychosocial issues related to sport and exercise behavior. This course will introduce students with theories and practices inherent in the field of sport and exercise psychology. Additional emphasis will include intervention strategies to promote exercise behaviors and long-term adherence to a physically active lifestyle.

EXS 375 Prerequisite: Successful completion of EXS 270 and PSY 100, with minimum grades of D-.

Distance education offering may be available.

EXS 380. Exercise Physiology. 3 Credits.

This course investigates the physiological principles which explain how the human body responds and adapts to physical activity, exercise, and work.

EXS 380 Prerequisite: Successful completion of BIO 269 and EXS 180, with minimum grades of D-. Corequisite: EXL 380.

Distance education offering may be available.

EXS 381. Fitness Assessment - Exercise Prescription. 3 Credits.

Designed to prepare students to assess the physical fitness levels of healthy but sedentary adults and prescribe individualized exercise programs.

EXS 381 Prerequisite: Successful completion of EXL 380 and EXS 380, with minimum grades of D-; and current CPR certification. Corequisite: EXL 381.

EXS 481. Fitness Recovery. 3 Credits.

This course is designed for students interested in exercise-based interventions in mental health disorders. This course will introduce students to the use of dosed-exercise as part of clinical treatment. Detailed and practical strategies for developing, implementing, and evaluating physical activity-based interventions for people with mental health disorders will be discussed. Exercise strategies that are specifically tailored for common mental health disorders, such as addictions, depression, schizophrenia, bipolar disorder, and more will be covered. Distance education offering may be available.

EXS 482. Strength Training and Conditioning. 3 Credits.

This course provides an overview of the theory, methods and techniques associated with the strength and conditioning of the cardiovascular and musculoskeletal systems. An emphasis will be placed on the acute and chronic adaptations to strength and conditioning programs, including novel methods such as plyometrics, speed/agility/speed-endurance training, and core training. Application of theory will be implemented through practical lab experiences. This course will also serve as a partial preparation for the CSCS exam given by the NSCA.

EXS 482 Prerequisite: Successful completion of EXL 362, EXL 380, EXS 362, EXS 380, with minimum grades of D-. Corequisite: EXL 482.

EXS 483. Advanced Principles of Strength and Conditioning. 3 Credits.

This course combines practical knowledge and hands-on experiential learning in strength and conditioning that is used in a variety of athletic settings, such as: professional sports teams, intercollegiate athletics, high school strength and conditioning, youth, etc. Distance education offering may be available.

EXS 484. Organization and Management of Adult Fitness Programs Clinic/Seminar. 3 Credits.

This course provides students with practical knowledge in organizing, managing and implementing adult fitness. Students will get hands on experience in the following areas: personal training, program design, leading group exercise classes, retention, liability protection, facility safety, facility design, budgeting, and promotion and marketing. Special emphasis is placed on standards and guidelines set forth by the American College of Sports Medicine (ACSM), and the National Strength and Conditioning Association (NSCA).

EXS 484 Prerequisite: Successful completion of EXL 381 and EXS 381, with minimum grades of D-.

EXS 486. Exercise Prescription - Special Population. 3 Credits.

Designed to provide students with practical experience in organizing and managing physical fitness programs for adults.

EXS 486 Prerequisite: Successful completion of EXS 381 with minimum grade of D-.

Distance education offering may be available.

EXS 487. Physical Activity and the Environment. 3 Credits.

A survey course investigating the multidisciplinary nature of environmental physiology. It will explore the impact of different environments on the physiology of humans while at work and play. This course will examine the thermal environments (hot, cold, humidity), barophysiology (altitude and depth), microgravity and space, air pollution, and chronobiological rhythms. Laboratory experiences, both computer simulation and "hands-on," will be included in the course.

EXS 487 Prerequisite: Successful completion of BIO 468, BIO 469, or EXS 380, with minimum grade of D-.

EXS 489. Clinical Exercise Testing and Interpretation. 3 Credits.

This course is designed to teach students how to administer graded exercise tests, take blood pressure and heart rate measurements during exercise, administer and interpret standard resting and exercise 12-lead electrocardiograms at a fundamental level, and how to properly prescribe exercise based on test results and using metabolic calculations. Understanding the athletic heart is a major focus.

EXS 489 Prerequisite: Successful completion of EXL 381 and EXS 381, with minimum grades of D-. Corequisite: EXL 489.

Distance education offering may be available.

EXS 490. Internship. 3-6 Credits.

The Exercise Science internship course is a capstone experience that permits students to apply their academic training and develop oral communication skills under the direction of certified fitness/wellness professionals and/or licensed clinical professionals. While classroom input is inherent in educational programs at West Chester University, the application of academic theory gives the student experiences that will add to their personal and professional maturity. The internship is a requirement for all students in the Exercise Science Division of the Kinesiology Department. The internship provides the student with the opportunity to ask pertinent questions, make observations, and participate in agency activities that normally would not be possible for a paid, full-time employee. All internship experiences must be undertaken in an agency that guarantees to provide the student with supervision by an exercise specialist, physical therapist, occupational therapist, chiropractor, or physician assistant possessing appropriate academic and certification credentials as well as licensure, appropriate to the student's concentration of study.

Gen Ed Attribute: Speaking Emphasis, Writing Emphasis (select both)

EXS 491. Elective Internship. 1-6 Credits.

A supplemental experience to EXS 490 which will enable students to explore other internship or work settings including physical therapy, occupational therapy, chiropractic care, cardiac rehabilitation, strength and conditioning coaching, commercial fitness, corporate fitness, personal training, or similar related practice. The experience would be at a different site than the required internship - EXS 490. Hours required range between 42 (for one credit) to 250 hours (for six credits).

EXS 499. Special Topics. 1-3 Credits.

This course will examine selected topics of temporal or special interest that are not normally part of the regular ongoing exercise science curriculum. Students will be provided an opportunity to pursue research, study, and/or application of knowledge and development of skills in an applied setting, which may include an off-campus component.

Repeatable for credit.