EXERCISE SCIENCE (EXSC)

EXSC 200 Health Promotion 3
This course addresses attitudes and lifestyle behaviors as they influence life-long health. Personal health issues, such as health habits, fitness,nutrition, safety, and emergency measures, heart health, mental health, sexuality, and family living will be addressed. Concepts of preventative medicine, disease prevention, and health education will be considered. Students are introduced to, and practice, different mechanisms for communication: oral presentations, bulletin board presentations, and informational newsletters.

EXSC 201 First Aid 3
This course presents topics of prevention, safety and treatment of illnesses, injuries and accidents in order to provide prompt and efficient action in times of emergency. The course integrates lecture with practical drills to learn techniques of administering CPR, cardioversion, rescue breathing, and emergency treatment for injuries and acute illness. Students earn Red Cross Community CPR and First Aid certification upon successful completion of the course.

EXSC 220 Basic Nutrition Science 3
This course focuses on the basic functions of nutrients, their influence on disease prevention and health promotion, and the specific nutrient requirements throughout the lifecycle. Tools for designing a healthy diet, weight control, nutrition for fitness and sports, and consumer issues will be addressed. Course limited to Exercise Science, Health Science, Pre Nursing and Biology majors.

EXSC 240 Medical Terminology 3
The objective of this course is foundational fluency in the language of medicine. To that end, it introduces concepts of word construction and basics of medical language organized by organ systems. A case study approach reinforces previously learned material and builds in its complexity throughout the semester. Instruction and practice in SOAP note construction puts medical terms in a written context commonly used by health care providers. This is a prerequisite course for admission to most physician assistant programs and a suggested elective for any student pursuing a career in health care.

EXSC 260 Strength Training 2
This course is designed to provide a comprehensive overview of strength and conditioning training. Emphasis is on placed on exercise technique and program design. Through this course students will learn how to demonstrate and teach proper exercise techniques. The design and implementation of safe and effective strength training and conditioning and personal training programs will be emphasized. This course is open to Exercise Science majors only. Other majors would need permission from the KInesiology Dept Chair.

EXSC 298 Group Exercise Instruction 3
This course prepares students to promote fitness in a variety of venues and to a range of population groups. Students apply previously learned concepts of health and fitness to the process of leading groups in exercise and presenting educational seminars.

EXSC 310 Aging, Health and Physical Activity 3
This course is designed to assist the student in developing an understanding of the multifaceted changes which occur with age and an appreciation of how these changes impact future behavior. Emphasis is placed on the evaluation of physical, psychological and social changes which accompany advancing age. The impact of lifestyle factors on the quality of life are examined with special emphasis on the role of physical activity in healthy aging. The social responsibility of Christians to respect and care for older adults is also discussed.
Prerequisites: BIOL 234 and EXSC 200

EXSC 350W Research Methods 3
This course will examine contemporary research methods utilized in exercise science and athletic training. Emphasis will be placed upon learning science sufficiently well with the goal of preparing the students for critical consumption of research. It introduces the design and application of research projects measuring cognitive, affective and psychomotor performance. It includes the introduction of statistical procedures and the 170 interpretation of published research in the disciplines of exercise science and athletic training. This class includes lectures, discussions and a variety of written projects.

EXSC 351 Kinesiology 3
This course involves the study of human movement from anatomical, biomechanical and neuromuscular perspectives. Emphasis is placed on muscles, joints and connective tissues. Students are required to analyze specific motions and or exercises with respect to joint actions, muscle activity and the mechanical principles that apply to the specific skill. Prerequisite: Minimum grade of C in BIO 233.
Prerequisites: BIOL 233

EXSC 352 Physiology of Exercise 3
Exercise physiology is the study of human work. This course focuses on the body systems, their inter-relationships and adjustments during exercise and stress as a result of training, physical activity, and physical inactivity. Emphasis is on current research findings and what remains to be discovered in humans as moving beings.
Prerequisites: BIOL 234

EXSC 360 Psychology of Sport and Exercise 3
This course is designed for students interested in the psychological dynamics related to sports and exercise behavior. This course will introduce students to various theories and practices intrinsically related to the field of sport and exercise psychology. Additional emphasis will include interventions and strategies to promote exercise behaviors and long-term adherence to a physically active lifestyle. This course will also cover how sports and exercise performance and behaviors impact psychological processes.

EXSC 380 Sports Nutrition 3
This course offers an advanced overview of the roles in nutrient selection, metabolism, and timing play in supporting and improving human physical performance. Emphasis will be placed on applying evidence-based strategies and recommendations to realistic case studies as well as on preparing students to sit for certification exams within the exercise sciences that include nutrition as a component. In addition, current controversies within the field will be critically evaluated and topics of student interest within the field will be explored. Prerequisite: EXSC 220.
Prerequisites: EXSC 220

EXSC 395 Exercise Science Testing Lab 3
This comprehensive, interactive course teaches a variety of health and fitness assessments that are utilized in the health care industry. Students will actively participate in the measuring of body composition, blood pressure, flexibility, muscular strength, endurance and aerobic fitness.
Prerequisites: EXSC 352

EXSC 400 Directed Study 1-3

EXSC 410 Corrective Exercise and Movement Analysis 3
This course is intended to provide accurate and scientific evidence-based information on human movement analysis and corrective exercise prescription. Topics covered include movement analysis, biomechanics of the human body, musculoskeletal assessment, and corrective exercise prescription. Students will incorporate their Christian values into an appreciation of healthy musculoskeletal movement, their personal health and in the lives of others they serve.
Prerequisites: Take BIOL 233, BIOL 233L, BIOL 234, BIOL 234L, and EXSC 351

EXSC 411 Cardiovascular Physiology and Pathophysiology 3
This course is an extensive study of the structure and function of the cardiovascular system, on the biochemical, cellular, and organismal levels, integrated with the etiology of cardiovascular dysfunction. Other areas covered include diagnostic tools of cardiovascular disease, EKG interpretation, and current treatments emphasizing the role of exercise.
Prerequisites: EXSC 352

EXSC 416 Exercise Metablism and Pharmacology 3
Advanced concepts of physiological responses and adaptations to exercise are explored in relation to pharmacological intervention, human performance limitations, training effects, and health related benefits. Emphasis is on human bioenergetics, pharmacological interactions and cardiovascular responses to exercise.
Prerequisites: EXSC 352

EXSC 445 Exercise Science Research 1-3
The purpose of this course is to provide the undergraduate student with a mentored learning experience in exercise science research. It is an advanced elective course in which the student, under faculty direction, will select a topic of interest, conduct a comprehensive literature review, propose a thesis, develop and execute a study, interpret the data, establish a conclusion and finally disseminate the project results via poster or platform presentation. This course can only be taken with approval by the chair. Prerequisite: Minimum grade of C in EXSC 350W and EXSC 352.
Prerequisites: EXSC 350W and EXSC 352

EXSC 451 Professional Development in Exercise Science 1
Principles and philosophies pertinent to the development of organizational policies and administrative practices in the fields of athletics, physical education and exercise science will be covered. Topics include fiscal practices, legal liability, facility development, staff management and case analysis. Course to be taken in 3rd or 4th year of study in Exercise Science.

EXSC 453 Exercise Prescription and Rehabilitation 3
This course will focus on developing individualized prescriptive exercise programs with regard to physical assessments, fitness test evaluations and individual contraindications. The influence of environmental conditions along with frequency, intensity and duration of physical activity will be studied in order to develop programs to improve or maintain high levels of wellness in normal and high risk populations.
Prerequisites: EXSC 352 and EXSC 395

EXSC 465 Exercise for Special Health Populations 3
This course serves as a culminating senior experience and will study exercise as a therapeutic regimen for the most prevalent diseases in North America. Important interactions between medications and physical activity will be investigated through the exploration of current medical research and evidence-based practices. The synergy of faith and physical activity in the treatment of people with special physical needs and diseases will be explored through personal, spiritual and scientific evidence.
Prerequisites: EXSC 453

EXSC 495 Internship 3-12
Internships are independent field experiences arranged and supervised by the exercise science internship coordinator. They offer exercise science students an opportunity to learn the practical aspects of their area of interest in a chosen community setting. The cooperative arrangement involves a pre-determined onsite preceptor who provides direct supervision and instruction. A collaboration of approved internship sites are provided by the exercise science internship coordinator. Additional sites may be considered upon approval of exercise science internship coordinator. Application must be made during registration in the semester prior to the intended experience.
Prerequisites: EXSC 453

EXSC 498 Teaching Assistantship 1-3

EXSC 499 Research Assistantship 1-3