

# EXERCISE SCIENCE (EXSC)

# Course numbers with the # symbol included (e.g. #400) have not been taught in the last 3 years.

## EXSC 520 - Contemporary Perspectives in Exercise Science

**Credits:** 4

This course is designed to introduce undergraduate students to the field of Exercise Science. Research studies, experiential learning and professional development will be used to explore the different aspects of Exercise Science including fitness, wellness, human performance, research and clinical exercise physiology. Students will discover the many ways exercise is used as a health and fitness intervention. Career options will be studied and evaluated giving students an informed exposure to potential areas of future.

**Equivalent(s):** KIN 520

**Grade Mode:** Letter Grading

## EXSC 527 - Scientific Foundations of Health and Fitness

**Credits:** 4

Provides students with practical, scientific, entry-level information relative to physical conditioning, health, and wellness from childhood through adulthood. Students are given theoretical information that will be followed by practical, hands-on experiences offered through laboratories experiences.

**Attributes:** Biological Science(Discovery); Discovery Lab Course; Writing Intensive Course

**Equivalent(s):** KIN 527

**Mutual Exclusion:** No credit for students who have taken NUTR 506.

**Grade Mode:** Letter Grading

## EXSC 607 - Biology of Aging

**Credits:** 4

Biological mechanisms of the aging process, with special emphasis on human aging; changes due to chronic disease.

**Attributes:** Biological Science(Discovery)

**Equivalent(s):** KIN 607

**Grade Mode:** Letter Grading

## EXSC 620 - Physiology of Exercise

**Credits:** 4

Acute and chronic effects of exercise. Muscle physiology, respiration, cardiac function, circulation, energy metabolism, and application to training.

**Prerequisite(s):** BMS 507 with a minimum grade of D- and BMS 508 with a minimum grade of D-.

**Equivalent(s):** KIN 620

**Grade Mode:** Letter Grading

## EXSC 621 - Exercise Laboratory Techniques

**Credits:** 4

Laboratory assessment of functional capacity, body composition, anaerobic power, anaerobic threshold, pulmonary function, blood pressure control, muscle strength, and temperature regulation. Field tests are used where appropriate. Extensive out-of-class time is required as each week a detailed lab report is submitted for grading. Prereq: EXSC 620. Exercise Science majors.

**Attributes:** Writing Intensive Course

**Equivalent(s):** KIN 621

**Grade Mode:** Letter Grading

## EXSC 650A - Internship in Exercise Science

**Credits:** 4-8

Individualized experiential training in an external (off-campus) exercise science setting (hospital, health & fitness club, business, physical therapy, or medical (physician assistant) offices, research laboratory) offering programs of prevention, intervention, and/or rehabilitation. The internship requires 400 contact hours and is a full-time commitment (10 weeks at 40 hours per week) usually taken the summer following the senior academic year. Activities may include graded exercise testing, exercise prescription, and exercise leadership. Must have completed all requirements for the option or have permission from the instructor prior to starting the internship. The course may be repeated once with 4 credits taken each time for a total of 8 credits. Cr/F. (IA continuous grading). Only open to Exercise Science majors.

**Repeat Rule:** May be repeated for a maximum of 8 credits.

**Equivalent(s):** KIN 650A

**Grade Mode:** Credit/Fail Grading

## EXSC 693 - Teaching Assistantship

**Credits:** 2

Students serve as teaching assistants in assigned class activities. Assignments to be made by the class instructor may include teaching assistants' and administrative duties. May be repeated up to a maximum of 4 credits. Prereq: junior standing; departmental approval. Cr/F.

**Repeat Rule:** May be repeated for a maximum of 4 credits.

**Grade Mode:** Credit/Fail Grading

## EXSC 696 - Independent Study

**Credits:** 2-4

An advanced, individual scholarly project under the direct supervision of a faculty member. Prereq: junior or senior; departmental approval.

**Repeat Rule:** May be repeated for a maximum of 8 credits.

**Grade Mode:** Letter Grading

## EXSC 696W - Independent Study

**Credits:** 2-4

An advanced, writing-intensive, individual scholarly project under the direct supervision of a faculty member. Student and Faculty Adviser will prepare a written proposal that outlines: the questions to be pursued, the methods of investigation, the student's qualifications to conduct the research, the nature of the finished written product (e.g. case study, position paper, extended lab report). This proposal must be approved by major faculty and the department chair prior to the student's registration for EXSC 696W. All EXSC 696W projects must include: Some forms of informal, ungraded writing such as a journal, reading summaries, draft chapters, or invention activities. Regular writing interaction between student and faculty adviser (i.e. at least weekly or biweekly), to include written feedback from the adviser. A finished product that is polished via revision. Faculty sponsors and students should consult the resources and guidelines of the UNH Writing Program. Prereq: junior or senior; departmental approval.

**Attributes:** Writing Intensive Course

**Repeat Rule:** May be repeated for a maximum of 8 credits.

**Grade Mode:** Letter Grading

## EXSC 699H - Honors Project

**Credits:** 4

Project first involves tutorial sessions to introduce the student to the experimental design, after which a research question is developed. After an appropriate literature review, the student collects and analyzes data, forms conclusions, and prepares a written report on the findings.

**Attributes:** Honors course

**Grade Mode:** Letter Grading

**EXSC 704 - Electrocardiography**

**Credits:** 4

Designed to provide exposure to basic interpretation and identification of electrocardiograms (ECGs). Includes detailed heart anatomy, coronary circulation, cardiac conduction system, electrocardiogram development, and all aspects pertaining to normal and abnormal ECGs. Prereq: EXSC 621, Exercise Science majors.

**Equivalent(s):** KIN 704

**Grade Mode:** Letter Grading

**EXSC 705 - Topics in Applied Physiology**

**Credits:** 4

Advanced exercise physiology course dealing with topics both current and relevant to exercise science majors. Includes genetics, environmental influences, immune system, detraining and over-training, epidemiology, ergogenic acids, and the influence of age and gender. Prereq: EXSC 620, EXSC 621, EXSC 736. Exercise Science majors.

**Equivalent(s):** KIN 705

**Grade Mode:** Letter Grading

**EXSC 720 - Science and Practice of Strength Training**

**Credits:** 4

Designed to provide students exposure to the knowledge and practical experience necessary for establishing strength development programs in a variety of populations, including healthy, athletic, and higher risk individuals. Program design, correct lifting techniques, physiological adaptations, and organization and administration of programs are highlighted. Includes fundamentals regarding the selection of programs and equipment, spotting techniques, as well as ways to assess strength and power in humans without expensive equipment. Prereq: EXSC 620, EXSC 621, or instructor permission.

**Equivalent(s):** KIN 720

**Grade Mode:** Letter Grading

**EXSC 722 - Applied Biomechanics**

**Credits:** 4

This course provides students with a background in the fundamental biomechanical principles that describe and govern human movement. Topics of the course include friction, linear and angular motion, tissue material properties, conservation of energy, work and power, fluid mechanics, stability and center of gravity, mechanics of injury, walking and running gait analysis. These topics are taught through the lens of modern biomechanical analyses including dynamometry, electromyography, accelerometry, and optical motion analysis. Prereq: EXSC 620.

**Equivalent(s):** KIN 722

**Grade Mode:** Letter Grading

**EXSC 724 - Exercise Metabolism: Acute and Chronic Adaptations**

**Credits:** 4

Overview of the metabolic processes that occur during exercise and metabolic changes that occur as a result of exercise training. Topics include glycogenolysis and glycolysis in muscle, cellular oxidation of pyruvate, lipid metabolism, metabolism of proteins and amino acids, neural and endocrine control of metabolism, and fatigue during muscular exercise. Prereq: EXSC 621, CHEM 404, Exercise Science majors.

**Equivalent(s):** KIN 724

**Grade Mode:** Letter Grading

**EXSC 736 - Fitness and Graded Exercise Testing**

**Credits:** 4

Designed to provide students exposure to the knowledge and practical experience necessary for establishing exercise programs in apparently healthy populations. Topics include fitness testing, test interpretation, and exercise prescription. Prereq: EXSC 621, EXSC 704, Exercise Science majors.

**Equivalent(s):** KIN 736

**Grade Mode:** Letter Grading

**EXSC 737 - Exercise Prescription and Leadership in Healthy and Special Populations**

**Credits:** 4

Provides exposure to the knowledge and practical experience necessary for establishing exercise and health promotion programs in a variety of populations. Includes fundamentals regarding personal training and program selection, implementation and equipment, legal issues, and budget establishment. Strength training programs and special populations are highlighted. Prereq: EXSC 621, EXSC 736; Exercise Science majors.

**Equivalent(s):** KIN 737

**Grade Mode:** Letter Grading

**EXSC 794 - Cardiopulmonary Pathologies**

**Credits:** 4

Lecture study of the anatomy, physiology, and pathophysiology of the cardiac, vascular, and pulmonary systems. Particular emphasis on the study of cardiovascular function in diseased and stressed states. Clinical assessment of the cardiopulmonary patient. Prereq: EXSC 704.

**Equivalent(s):** KIN 794

**Grade Mode:** Letter Grading

**EXSC 795 - Practicum in Cardiac Rehabilitation**

**Credits:** 2

Provides students with practical and theoretical experience in all aspects involving cardiac rehabilitation programs.

**Prerequisite(s):** EXSC 704 with a minimum grade of D- and EXSC 794 with a minimum grade of D-.

**Equivalent(s):** KIN 795

**Grade Mode:** Letter Grading

**EXSC 798 - Special Topics in Exercise Science**

**Credits:** 1-4

New or specialized courses not normally covered in regular course offerings.

**Repeat Rule:** May be repeated for a maximum of 8 credits.

**Grade Mode:** Letter Grading