

EXERCISE SCIENCE (EXSC)

Visit the [Course Schedule Search website](#) to find out when courses will be offered during the academic year.

Read more about the courses within this subject prefix in the descriptions provided below.

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

Special Fee: Yes

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.

Attributes: Writing Intensive Course

Prerequisite(s): EXSC 620 with a minimum grade of D-.

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. (IA continuous grading).

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.

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.

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.

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.

Prerequisite(s): EXSC 621 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 620 with a minimum grade of D- and EXSC 621 with a minimum grade of D- and EXSC 736 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 620 with a minimum grade of D- and EXSC 621 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 620 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 621 with a minimum grade of D- and CHEM 404 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 621 with a minimum grade of D- and EXSC 704 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 621 with a minimum grade of D- and EXSC 736 with a minimum grade of D-.**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.

Prerequisite(s): EXSC 704 with a minimum grade of D-.**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-.**Equivalent(s):** KIN 795**Grade Mode:** Letter Grading