Exercise Science

Stamford, Tereshko, Worrell.

**Major**: Exercise Science courses – ExS 215, 225, 230, 327, 341, 471, and three units from the following: ExS 220, 326, 331, 345. Required cognates: Bio 161 or 162 and Math 217. Comprehensive evaluation, with at least a C-. Total of 9 units in the major plus two cognate courses.

**Minor**: Exercise Science courses – ExS 215, 230, 327, and two units from the following: ExS 220, 225, 326, 331, 345. Cognate: Bio 161 or 162.

**ExS 215. Human Anatomy**. A structural survey of the human body covering the muscular, skeletal, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive, and integumentary systems. Laboratory Prerequisite: Bio 161 or 162.

**ExS 220. Motor Development and Adapted Exercise**. Exploration of the common developmental sequences of motor development as well as accommodations necessary to handle a learner or client's unique needs resulting from developmental delays or physical challenges. Prerequisite: Bio 161 or 162 and ExS 215.

**ExS 225. Nutrition**. The study of the nutrients in foods and of the body’s handling of them, including: ingestion, digestion, absorption, transport, metabolism, interaction, storage, and excretion. Emphasis will be placed on the effect nutrition plays on exercise and athletic performance. Offered Spring Term.

**ExS 230 Physiology**. An introduction to principles of vertebrate physiology, with special emphasis on humans, using an integrative approach to basic physiology of cells through considerations of major organs and organ systems. Prerequisite: Bio 161 or 162 and ExS 215.

**ExS 307. Directed Study**. .50 unit.

**ExS 326. Biomechanics**. The study of motion and the effect of forces on biological systems, using the principles of mechanics for solving problems related to the structure and function of living organisms. The course will include analyzing human movement by both quantitative and qualitative means. Laboratory. Prerequisite: ExS 215, 230, and Bio 161 or 162.

**ExS 327. Physiology of Exercise**. The description and explanation of functional changes brought about by acute or chronic exercise. Topics include bioenergetics, neuromuscular concepts related to exercise, cardio-respiratory considerations, physical training, nutrition and body composition, and the use of ergogenic aids in improving the exercise response. Laboratory. Prerequisite: Bio 161 or 162 and ExS 215, 230.

**ExS 331. Athletic Training**. Introduction to the general principles and procedures essential for proper prevention, recognition and care of athletic injuries. Prerequisite: ExS 215, 230 or permission of instructor.

**ExS 341 Research Methods and Data Analysis**. Scientific measurement approaches used in exercise science research, including research design and interpretation of data. Prerequisite: ExS 215, 230, 327, Math 217; major status.
ExS 345. **Exercise Testing and Prescription.** Examines the theoretical and applied aspects of exercise testing and exercise prescription. Modes of exercise testing used in predicting disease and assessing fitness levels. Emphasis on collection and interpretation of data from fitness testing and the design of personalized exercise programs. Laboratory. Prerequisite: ExS 215, 230 and 327.

ExS 357. **Internship.** Off-campus field experience of applied nature in exercise science, recreation/fitness leadership, or coaching. Specific experience to be determined by student and faculty consideration of available positions and student interest and competencies. Prerequisite: Consent of the department.

ExS 360. **Special Topics.**

ExS 370. **Directed Study.** One unit.

ExS 471. **Independent Study.** Supervised individual research and writing in an area of exercise science selected by the student with approval of the instructor. Prerequisite: 341; senior major status.