

Course Descriptions- Master of Science in Strength and Conditioning

STRC 500 Anatomy and Physiology

This course is an introduction to human anatomy and physiology from an integrative perspective in relation to exercise and fitness. Students learn the structure and function of the tissues, the skeletal system, the nervous system, the endocrine system, and muscle function from the cellular to organism level. Additional topics covered will include chemical, cellular, and tissue level of organization as they relate to strength and conditioning professionals. This course will involve interactive laboratory activities, class/functional projects, individual and group discussions, textbook material, and clinical case studies.

STRC 570 Exercise Physiology

This course is a detailed study of the human physiological responses to athletic performance, concentrating on general physiologic principles that take place in all bases of the cardiorespiratory, neuromuscular, and endocrine systems in relation to high performance training. Review of the current literature and applications of current training applications are featured.

STRC 550 Biomechanics

This course examines the role of muscles, tendons, and joints during sport and exercise movements. The specific roles of the upper and lower extremity and the axial skeleton are highlighted. Proper movement patterns during exercise are covered.

STRC 510 Psychology of Sport and Exercise

This course is designed to introduce students to the field of sports psychology, emphasize the role that psychology plays in athletic performance and other areas of activity, and give students the tools to incorporate these principles into their own practices.

STRC 520 Sports Nutrition

This course will provide the framework for both the theory and application of sports nutrition. Concepts include nutrition strategies for maximizing athletic performance, hydration, energy balance, and supplementation.

STRC 600 Scientific Principles of Strength and Conditioning

This class provides the principles of aerobic and anaerobic exercise. This includes an emphasis on musculoskeletal and endocrine adaptations to training, age and sex-related differences in exercise response, and basics of athletic injuries and tissue healing process.

STRC 630 Resistance Training and Conditioning

This course will expose students to the techniques and training principles of strength and conditioning as it applies to human performance. Applied Strength and Conditioning concepts such as structured pre-exercise warm-ups, flexibility/mobility, plyometric progressions, power

development, and strength in conventional and advanced methods will be explored. Students will learn coaching techniques to apply in a real-world setting, as well as exercise progressions based on applied practice.

STRC 640 Exercise Testing and Prescription with Emphasis in Anaerobic Exercise

This course examines techniques of evaluation for athletic fitness and performance with a particular emphasis on anaerobic exercise prescriptions. Specific areas include muscular strength, power, speed, agility, muscular endurance, cardiovascular fitness, anaerobic conditioning, flexibility, and body composition.

STRC 650 Program Design in Strength and Conditioning

This course prepares students to create training programs with directed at improving sport performance. Students will conduct needs analysis and apply program design and periodization principles for plyometric, speed, agility, aerobic and anaerobic training.

STRC 670 Program Organization, Administration and Oversight

This course will review administrative elements essential for successful oversight and management of strength and conditioning programs, facilities, and staff. Review of ethical and legal standards, emergency action planning, staff development, and establishing key performance indicators are reviewed.

STRC 690 Field Experience I

The Field Experience allows for 150 hours of practical application of strength and conditioning principles and skillsets to develop training programs and effective coaching techniques under a CSCS certified site supervisor.

STRC 695 Field Experience II

The Field Experience allows for 150 hours of practical application of strength and conditioning principles and skillsets to develop training programs and effective coaching techniques under a CSCS certified site supervisor.