Course Title: Sports Medicine 1 & 2

Course #: 1522-1523

Sports Medicine 1 - Foundations of Athletic Training (Fall Semester only)
This course is designed for students who have a genuine interest in the sports medicine field and would like to learn the basics of the profession of athletic training. Students will not only learn about the history of athletic training, but also what it takes to become an athletic trainer. The course provides the study and application of the following components: Mechanisms and characteristics of sport trauma; shoulder, knee, and ankle anatomy and injuries; taping and wrapping techniques; infection control in the athletic environment; wound care; and basic life-saving skills training in CPR, AED, and first aid through the American Red Cross. Students can earn a CPR/AED/first aid certification in the class. No textbook is required for this course.

Sports Medicine 2 - Exercise Physiology (Spring Semester only)
This course builds on the traditional disciplines of anatomy and physiology by focusing on alterations and adaptations in body systems during physical activity. Students will cover a range of topics including: The history of exercise physiology in the U.S.; reflexes; muscle physiology; cardiorespiratory response to exercise; thermoregulation; and nutrition for athletic performance. Students explore these topics through several projects, labs, and a semester-long investigation. Some labs will require physical activity. No textbook is required for this course.

UC/CSU Approval: “g” elective (not “d” science)

Grade Level: 10-12

Estimated Homework Per Week: approximately 2 hours per week

Prerequisite: A grade of “C” or higher in Biology and a “C” or higher in Anatomy & Physiology, or concurrent enrollment in Anatomy & Physiology

Recommended Prerequisite Skills:
- Grade level reading comprehension
- A genuine interest in sports, exercise, and human anatomy

Course Grade Scale:
- Homework and Class assignments: 10%
- Labs and Projects: 20%
• Quizzes: 20%
• Tests: 30%
• Semester Exam: 20%

**Sports Medicine 1– Major Assessments/Units/Topics:**

Unit 1: Careers in Sports Medicine and the history of athletic training
Students will learn about different careers that fall under the sports medicine umbrella through a research assignment. Students also will understand the history of the profession of athletic training through a timeline activity.
Major Assessment: Unit test

Unit 2: Anatomy and Medical terminology
Students get a refresher on anatomical terminology they learned in anatomy and physiology. This includes body landmarks and directional terminology. Students learn proper terminology for types of body movements and demonstrate their understanding through a group project.
Major assessments: Quiz and Unit test

Unit 3: Mechanisms and characteristics of sport trauma
Students define and use proper medical terminology pertaining to sports injuries. Students will be able to analyze the mechanical properties of tissue based on the stress-strain curve model. Students learn about the types of tissue loads that can produce stress and strain. Students evaluate different injuries to the musculotendinous unit, synovial joints, and bones. Students demonstrate the off-the-field injury evaluation scheme (HOPS) through a case study project.
Major assessments: Quiz and Unit test

Unit 4: Musculoskeletal Conditions
Students will be able to identify the major anatomical components of the foot/ankle, knee, and shoulder. Students will know the common injuries of the foot/ankle, knee, and shoulder. Students learn how to tape an ankle.
Major assessments: Quiz and Unit test

Unit 5: Concussions
Students know what a concussion is and what steps are taken to care for a concussion. Students learn the signs and symptoms of concussions. Students understand the proper protocol for returning back to sport after sustaining a concussion. Students recognize the seriousness of concussions and be aware of the length of time potentially needed for recovery. Students will be familiar with the standardized assessment of concussions.
Major assessment: Unit Quiz

Unit 6: Infectious Diseases and wound care
In this unit, students learn about infectious diseases and the importance of following universal precautions in professional and athletic environments to protect themselves and others from harmful bloodborne pathogens. Students also learn about the different types of wounds and demonstrate proper care for them through the completion of a lab.

Major assessments: Unit Test

Unit 7: Emergency Care
Students learn the basic life-saving skills training in CPR, AED, and first aid through the American Red Cross curriculum. Students can earn a CPR/AED/first aid certification that is good for two years with a passing unit test score.

Major assessment: Unit Test

Sports Medicine 2– Major Assessments/Units/Topics:
Unit 1: History of Exercise Physiology
Students learn about the factors influencing physical fitness in the U.S. over the past century.

Major assessment: Unit Test

Unit 2: The nervous system and reflexes
Students learn the general nervous system structure and function, the components of a reflex arc, how to test for reflexes, and how exercise can enhance brain/nervous system health.

Major Assessments: Quiz and Unit Test

Unit 3: Muscle physiology
Students learn about the structure of muscles, all the way down to the microstructure. They will demonstrate the steps leading up to a muscular contraction. This unit also covers the different muscle actions, types of muscle fibers, muscle fatigue, and the changes in muscles due to exercise, inactivity, and aging.

Major Assessments: Quiz and Unit Test

Unit 4: The cardiorespiratory system and exercise
In this unit, students explore the topics of the heart’s response to exercise and the mechanics of breathing during exercise. They will be able to calculate cardiac output, estimated maximal heart rate, and their estimated VO2 max—which evaluates their overall cardiorespiratory fitness.

Major Assessments: Quizzes and a Unit Test

Unit 5: Temperature Regulation
Students learn the basics on how the body regulates temperature. They will understand how the body responds to exercise in hot and cold environments and the dangers associated with each.

Major Assessments: Unit Test

Unit 6: Nutrition for performance
Students receive a general overview of everyday nutrition by learning about necessary macro and micronutrients as well as how to read nutrition labels and calculate calories. Then they learn about the nutrition necessary for an athlete in training. Students will know how to calculate their BMI and create a one day meal plan tailored to their needs as a specific type of athlete.

Major Assessments: Unit Test