

# Exercise Science

**Carone Learning Category:** Career

**Subject:** Elective/CTE

**Recommended Grade Level:** 10-12

**Course Credit:** One semester, 0.5 credits (5 units in CA)

**Recommended Pre-Requisites:** None

## Course Description

This course takes an in-depth examination of the effects of exercise on the body. Through this course, students will learn basic anatomy, biomechanics, and physiology, as well as proper principles and techniques to designing an effective exercise program. The study of nutrition and human behavior will also be integrated into the course to enhance the students' comprehension of this multifaceted subject.

## Units & Tasks

This course is divided into the following Units and Sections.

- **Course Introduction**
- **Unit 1: Intro to Exercise Science**
  - 1.1 Intro to Exercise Science
- **Unit 2: Body Systems**
  - 2.1 Terminology
  - 2.2 Skeletal & Muscular Systems
  - 2.3 Respiratory & Cardiovascular Systems
- **Unit 3: Exercise Physiology**
  - 3.1 Energy Systems
  - 3.2 Muscle Physiology
  - 3.3 Gender Differences
- **Unit 4: Biomechanics & Safety**
  - 4.1 Biomechanics
  - 4.2 Exercise Safety & Injury Prevention
- **Unit 5: Exercise Programming**
  - 5.1 Exercise Programming
  - 5.2 Components of Physical Fitness
- **Unit 6: Mind & Body**
  - 6.1 Exercise Psychology
  - 6.2 Sports Nutrition
- **Unit 7: Exercise Considerations**
  - 7.1 Exercise Programming Considerations
  - 7.2 Special Populations

Within each section students will find the following tasks to view or complete:

1. **Checklist**—an outline of objectives & tasks for the section
2. **Lessons**—multimedia lessons about the section topic

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3. **Field Trip**—links to other online sites with additional fitness information
4. **Skills**—lessons that teach fitness-specific skills
5. **Discussion\***—class discussion on an assigned topic
6. **Assignment\***—assignment that corresponds with the skills lessons
7. **Vocab Check**—a practice exercise to test your knowledge of vocabulary
8. **Quiz\***—quiz covering information from the lessons

The items noted with an asterisk above are those that must be submitted for a grade. A unit exam will be found at the end of every unit, as well as a comprehensive final exam at the end of the course.

### Pacing

There are 16 sections in this course. Each section is designed to be completed in about one week's time. However, students may take more or less time as needed. A recommended pacing guide is provided within the course.

### Parent & Teacher Guides

Parent and teacher guides available.

### Materials

There are no required materials for this course.

### Technical Requirements

An internet connection and computer or tablet hardware is required. Software requirements include a PDF reader, word-processing application (such as Word), MP4/video player, and Flash player (optional). Free downloadable software is available for each of these.

### Additional Information

This course is based on the American College of Sports Medicine content guidelines for personal trainers. This course is recommended for students interested in pursuing fitness or sports career fields.