

Syllabus

SPECIALIST IN STRENGTH AND CONDITIONING

COURSE LENGTH

6 months

PREREQUISITES

Certified Fitness Trainer

CO-PREREQUISITE

Basic Adult CPR with AED

TEXTBOOKS AND MATERIALS

Fahey, Thomas. *Specialist in Strength and Conditioning: The Complete Guide to Sports and Fitness Training*. 3rd edition. International Sports Sciences Association.

COURSE DESCRIPTION

This course covers topics related to programming and motivation for athletes including anatomy, physiology, assessment, flexibility, strength, programming for specific sports, athletic nutrition, sports psychology, and injury.

COURSE OBJECTIVES

- Apply the principles of metabolism, muscle anatomy, biomechanics, training, and adaptation to create a periodized conditioning program for an athlete based on starting fitness level and sport-specific goals.
- Describe the components of human tissues including bones, joints, and muscle fibers.
- Describe the musculoskeletal system, body mechanics, and body musculature in relation to exercise and movement.
- Identify energy systems and which system is activated by particular activities.
- Explain how the pulmonary, cardiovascular, and muscular systems respond to exercise. Measure and classify body composition for athletes.
- Properly assess, monitor, and evaluate an athlete's fitness level and progress toward goals.
- Describe exercises intended to increase endurance, flexibility, strength, power, and speed.
- Design sport-specific exercise programs for athletes.
- Identify the sports psychology principles and techniques that assist athletes in achieving the mental preparedness necessary for optimal performance.
- Apply the principles of basic nutrition and supplementation as they pertain to athlete's health and fitness goals.

- Identify the causes of overtraining and injury and incorporate injury prevention into the training program.
- Identify the situation(s) when it is necessary to seek out a doctor's assistance with exercise design and/or injury needs.

COURSE OUTCOMES

- Administer the strength, speed, and body composition tests to properly assess and monitor an athlete's fitness level.
- Identify the metabolic pathway most used in a particular sport and the steps used to address the pathway in a conditioning program.
- Identify the unique training and conditioning needs of individual sports and tailor conditioning programs accordingly.
- Customize the components of fitness program according to off-season, pre-season, and in-season needs.
- Incorporate jumping and plyometric exercises into an athlete's workout program to help them increase strength, power, and speed.
- Monitor an athlete's progress in an exercise program and recommend changes based on assessment of his or her progress.
- Identify the instance(s) when additional professional assistance is required with athlete injury and / or recovery needs.
- Identify and articulate the risks and benefits of ergogenic aids.

COURSE OUTLINE

You have until the course end date to finish all required submissions. A suggested guided study for you to complete the course is set up as follows:

Module 1: Defining Fitness; Principles of Training

Module 2: Anatomy; Metabolism; Muscle Physiology

Module 3: Pulmonary and Cardiovascular Physiology; Temperature Regulation, Exercise and the Environment, Body Composition

Module 4: Basic Movement Skills for Strength Development; Core Fitness

Module 5: Resistance Exercise Methods; Bench Press, Squat & Deadlift; Olympic Lifts; Resistive Exercise Without Weights

Module 6: Cross Training and Circuit Training, Suspension Training, Plyometrics, Flexibility, Power and Speed

Module 7: Assessments; Body Composition; Program Design for Sports: Football, Basketball, Baseball/Softball

Module 8: Program Design for Sports: Swimming, Track and Field, Golf, Bodybuilding, Soccer, Weightlifting and Power Lifting

Module 9: Nutrition; Sports Psychology; Injury

Module 10: Final Examination

INSTRUCTIONAL METHODS

This course will include online lectures, reading assignments, written assignments, discussions, and quizzes.

GRADING

Review "How to Score Well" under "Course Home" for general guidance on how your written submissions are evaluated.

EARNING YOUR CERTIFICATE - MINIMUM REQUIREMENTS

To earn your certificate, you must:

- **Submit all course components.**
- **Earn a course score of 75% or better in the course.**
- **Submit current Adult CPR/AED**
- **Any fees must be paid in full.**