SES-2390: STRENGTH COACH CERTIFICATION PREP

Cuyahoga Community College

Viewing: SES-2390 : Strength Coach Certification Prep

Board of Trustees:
May 2022

Academic Term:
Fall 2022

Subject Code
SES - Sport and Exercise Studies

Course Number:
2390

Title:
Strength Coach Certification Prep

Catalog Description:
This course is designed for students who want to prepare for certification as a Strength Coach through the National Council on Strength and Fitness. Students will gain knowledge on key aspects of the certification exam including performance assessment and evaluation, biomechanics, sport metabolism, nutrition and ergogenic aids, training techniques for athletic performance, advanced programming for sport, injury prevention, and return to competition.

Credit Hour(s):
3

Lecture Hour(s):
3

Lab Hour(s):
0

Other Hour(s):
0

Requisites

Prerequisite and Corequisite
SES-2310-Advance Training Concepts and Techniques or concurrent enrollment, or departmental approval.

Outcomes

Course Outcome(s):
Explain concepts of sport performance and strength conditioning related to functional anatomy, sport biomechanics, sport metabolism, sport nutrition, and ergogenic aids.

Essential Learning Outcome Mapping:
Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):
1. Explain functional anatomy as it relates to sport performance training.
2. Explain the biomechanics as it relates to sport performance training.
3. Explain sport-specific metabolism and motor unit metabolism.
4. Identify types of fatigue and muscle damage that can occur to athletes before, during, and after training.
5. Identify the role of anabolic hormones in sport and athletics.
6. Explain how macronutrients, micronutrients, and fluids as it relates to performance.
7. Examine the scope of practice of sports performance professionals in providing nutritional advice.
8. Explain the female athlete triad.

9. Examine common ergogenic aids and supplements used to enhance performance.
10. Identify substances and drugs banned by the NCAA.

Course Outcome(s):

Examine concepts of sport performance and conditioning that focus on assessments, corrective exercises, performance preparation, theories, and techniques for health-related and performance-related components of fitness and injury prevention.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify the health-related and performance-related components of fitness.
2. Examine the role of athletic conditioning in sport.
3. Discuss various sport analysis methods.
4. Identify assessments to evaluate health-related and performance-related fitness components.
5. Explain the components and function of an integrated sports performance assessment.
6. Examine the effects of common postural distortions and movement imbalances on the human movement system.
7. Differentiate between the types of flexibility techniques.
8. Describe how cardiorespiratory training is used within an integrating training program to improve performance.
9. Differentiate between local and global stability and movement systems of the core.
10. Describe balance and its purpose in performance enhancement and injury prevention.
11. Describe plyometric training and its purpose in performance enhancement and injury prevention.
12. Describe speed, agility, and quickness and its purpose in training.
13. Describe the stages of general adaptation syndrome and the principle of specificity.
14. List and define the various types of resistance training systems.
15. Describe the utilization of Olympic lifts for improving performance.
16. Examine the performance-related benefits of a warm-up.
17. Examine the implementation and benefits of common recovery methods.
18. Identify how to select warm-up and recovery method activities that match the specific goals of athletes.
19. Discuss how to modify traditional exercises to make them more athletically functional.
20. Explain the mechanisms and risk factors for injuries and common injuries in sports.
21. Identify the return to sport parameters follow rehab for each injury.

Course Outcome(s):

Examine the foundational concepts of sport performance and strength conditioning for athletes in various sport programs and phases of training.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Examine health and performance-fitness assessments to obtain objective information about athletes.
2. Evaluate assessment results to develop proper and appropriate exercises and programs for athletes at any given level of training.
3. Examine how to develop a needs analysis for optimized sport performance programming.
4. Examine how to apply proper exercises progressions within a warm-up and cool-down.
5. Identify appropriate flexibility techniques for athletes at any given level of training.
6. Rationalize the importance of core training for improving sports performance and injury prevention.
7. Examine how to develop various training programs for athletes at any given level of training including balance, plyometric, speed, agility and quickness, resistance, cardiorespiratory training.
8. Identify proper and improper cardiorespiratory, core, balance, plyometric, speed, agility, quickness, resistance training and Olympic weightlifting techniques
9. Examine proper exercise selection for each training phase to ensure adaptations match athletic goals
10. Explain how to make program adjustments what will limit the risk for overtraining.
11. Explain what physiological factors to consider when developing a program for improved sport performance.

12. Examine proper progressions of conditioning programs to ensure athletic development while limiting the risk for injury.
13. Examine factors that influence the development of an optimal sport-specific performance program.

Methods of Evaluation:

1. Class participation
2. Written assignments
3. Quizzes
4. Examinations

Course Content Outline:

1. Introduction to strength and conditioning
    a. Fitness versus athlete
    b. Health-related components of fitness
    c. Performance-related components of fitness
    d. Role of athletic conditioning for sports
2. Sport analysis for program development
3. Performance assessment for athletes
    a. Assessments for health-related components of fitness
    b. Muscular fitness testing
    c. Flexibility testing
    d. Anthropometric measures and body composition testing
    e. Assessments for performance-related components of fitness
    f. Speed testing
    g. Agility and change of direction capacity testing
    h. Coordination testing
4. Sports biomechanics
    a. Principles of stability
    b. Integrated model of function
    c. Local and global systems
    d. Postural distortions
5. Corrective exercise
    a. Quantifying levels of dysfunction
    b. Programming for function
    c. Applications for integrated training
    d. Implementing a corrective exercise approach
6. Sport metabolism
    a. Neuromuscular system
    b. Motor unit recruitment and force output
    c. Motor unit metabolism and physiology
    d. Physiological disruption and recovery
    e. Types of fatigue
    f. Muscle damage
    g. Role of anabolic hormones
7. Sport nutrition
    a. Carbohydrates
    b. Protein
    c. Lipids
    d. Water and electrolytes
    e. Vitamins and minerals
    f. Body composition and weight management
    g. Female athlete triad
8. Ergogenic aids

    a. Ergogenic aids and supplementation
    b. Role of strength coach in an athlete's dietary needs
    c. Substance and drugs banned by NCAA
9. Performance preparation
    a. Warm-up physiology
    b. Designing an athletic performance warm-up
    c. Recovery strategies
    d. Self-myofascial release
10. Foundations and techniques for Olympic weightlifting
    a. Lifting for sport-specific purposes
    b. Types of Olympic weightlifting exercises
11. Speed, agility, and quickness training
    a. Training for speed development
    b. Speed session
    c. Developing sport-specific speed
    d. Agility session
    e. Developing sport-specific agility
    f. Sprinting performance
    g. Change of direction mechanics, footwork, reaction time
    h. Techniques and instructions for speed, agility, and quickness training
12. Considerations for programming
    a. Key physiological program considerations
    b. Exercise selection
    c. Training methods and systems of training
13. Programming for sport performance
    a. Traditional training phases
    b. Integrated training phases
    c. Integrated programming approach
    d. Long-term programming approach
    e. Metabolic crossover training
    f. Optimizing each training session
    g. Volume specificity
14. Periodization for sport
    a. Traditional and current periodization theory
    b. Guidelines for annual plan
    c. Characteristics of a season
15. Conditioning for intermittent sports
    a. Understanding intermittent sport conditioning
    b. Designing a program
16. Training methods for endurance sports
    a. Assessing aerobic capacity
    b. Determining athlete's training zones
    c. Developing a program
17. Injury prevention
    a. Common sports injuries
    b. Return to competition

Resources

Bompa, T. O. & Buzzichelli, C.A. . (2021) *Periodization for strength training and sports, 4th ed.*, Human Kinetics.

Joyce, D., & Lewindon, D. . (2021) *High-performance training for sport, 2nd ed.*, Human Kinetics.

National Academy of Sports Medicine. (2018) *NASM essentials of sport performance, 2nd ed.*, Jones & Barlett.

Biagioli, B. . (2015) *Advanced concepts of strength & conditioniing*, National Council on Strength & Fitness.

Ratamess, N. & American College of Sports Medicine. (2021) *ACSM's essentials of strength training and conditioning, 2nd ed.*, LWW.

Resources Other

NCSF-CSC e-learning online platform

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