

# SANTA CLARA COUNTY SHERIFF'S DEPARTMENT

## PHYSICAL TRAINING INSTRUCTOR COURSE

Course number: 2270-21480-

Revised 6.20.2020

- I. Orientation
  - a. Introductions
    - i. Participants
    - ii. Instructors
  - b. Orientation
    - i. Facility Tour
    - ii. Review Safety Policy
    - iii. Complete Emergency Notification Cards
    - iv. Instructor Expectations
- II. Course Objectives: Training the "Tactical Athlete"
  - a. Review Course Objectives
    - i. Understand the science that supports proper development of physical conditioning.
    - ii. Explain athlete assessment, mindset, strength training techniques, energy system development, proper warm up and recovery, nutrition, pre-habilitation, training through injury, program design, training methodologies, safety protocols, Post-required testing, and legal issues.
    - iii. Review and demonstrate various movements and training methodologies.
    - iv. Develop effective coaching methodologies through the use of adult learning theories.
  - b. Understand the idea of training to be a Tactical Athlete
    - i. Purpose
      - 1. Assess operational fitness
      - 2. Develop/maintain operational fitness
      - 3. Prevent injuries
      - 4. Improve performance
    - ii. Key Strategies
      - 1. Train like competitive athletes
      - 2. Develop aspects of fitness specific to demands of job
      - 3. Learn nutritional strategies to support athletic performance
      - 4. Understand recovery strategies related to sleep, supplementation and mindfulness
  - c. Review Course Content
    - i. Lectures
    - ii. Exercise demonstration and technique practice
    - iii. Learning activities
- III. Basic concepts of anatomy, physiology and biomechanics

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- a. Explain terminology used to explain kinesiology, functional anatomy and biomechanics
    - i. Functional anatomy
    - ii. Kinesiology
    - iii. Anatomical position
    - iv. Planes of movement
    - v. Biomechanics
  - b. Explain the basic function of the neural skeletal, musculoskeletal and energy systems
    - i. Neural System
    - ii. Skeletal System
    - iii. Musculoskeletal System
    - iv. Energy Systems
      - 1. Phosphocreatine
      - 2. Glycolytic or Lactic
      - 3. Aerobic or oxidative
  - c. Explain factors that contribute to strength performance.
    - i. Neural factors
    - ii. Muscular factors
    - iii. Muscle fiber architecture and fiber alignment
    - iv. Biomechanics – types of forces, power
- IV. Basic Functional Movement Patterns
- a. Review, demonstrate and practice calisthenics
    - i. Squat
    - ii. Push Up
    - iii. Pull Up
    - iv. Lunge
  - b. Review, demonstrate and practice loaded movements
    - i. KB Swing
    - ii. KB Snatch
    - iii. Overhead Press
    - iv. Goblet Squat
  - c. Review, demonstrate and practice unilateral variations
    - i. Press, squat, swings
- V. Strength Training and Principles of Training
- a. Explain strength training movement patters
    - i. Push
    - ii. Pull
    - iii. Squat

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- iv. Hinge
- v. Core
- vi. Compound
- b. Explain external load implements
  - i. Barbells
  - ii. Dumbbells
  - iii. Kettlebells
  - iv. Bands
  - v. Machines
  - vi. Balls
  - vii. Sandbags
  - viii. Weight Vests
- c. Explain Strength training variables
  - i. Volume
  - ii. Load
  - iii. Time under tension
  - iv. Speed of movement
  - v. Variability
- d. Explain the principles of training
  - i. Specificity
  - ii. Carryover to activity/function
  - iii. Overload
  - iv. Progression
  - v. Individuality
  - vi. Principle of diminishing returns
  - vii. Overtraining
- e. Explain characters of training prescription for required components
  - i. Resistance training
    - 1. Strength
    - 2. Power
  - ii. Speed and Agility
- f. Understand program design considerations
  - i. Program design progressions
    - 1. Foundational Phase
    - 2. Conditioning Phase
    - 3. Peak Performance Phase
  - ii. Order of exercise

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- iii. Volume per session
  - iv. Intensity
  - v. Rest periods between sets
  - vi. Recovery periods between workouts
  - vii. Frequency
  - viii. Intensity/Volume Relationship
  - ix. Training template examples
- VI. P.O.S.T PT Requirements
- a. Identify reference material containing POST requirements
    - i. Training and testing specifications
    - ii. POST Administrative manual
    - iii. Course binder
    - iv. BCCR
  - b. Explain important requirements
    - i. Scheduling
    - ii. Modified PT
    - iii. Conditioning Goals
    - iv. Testing
    - v. Learning Activities
    - vi. Program Modifications
- VII. Nutrition
- a. Explain the basic nutrient requirements necessary for physical training and physical performance.
    - i. Protein
    - ii. Carbohydrate
    - iii. Fat
    - iv. Vitamins
    - v. Water
  - b. Explain how to apply nutrition for performance.
    - i. Rest, recover and regenerate
    - ii. Nutrient timing
    - iii. Food quality
    - iv. Individuality
    - v. Sample meals and snacks
  - c. Explain pros and cons of supplements
    - i. Protein supplements
    - ii. Vitamin D

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- iii. Probiotics
  - iv. Creatine
  - v. Caffeine
  - vi. Other Stimulants – unsafe or illegal
- VIII. Understanding Warm-ups
- a. Explain why the warm up is a critical component of the training and conditioning process.
    - i. Increase body temperature
    - ii. Potentiate nervous system
    - iii. Reinforce movement patterns
    - iv. Injury prevention and pre-habilitation
  - b. Explain, specific warm up content choices and their functions
    - i. Linear and lateral sprint mechanics drills
    - ii. Hip external rotation
    - iii. Band work
    - iv. Dynamic range of motion
    - v. Plyometrics
- IX. Warm-up Practical
- a. Review, demonstrate practice warm up routines
    - i. Dynamic track and field warm-up
    - ii. Corrective exercise warm-up
- X. Acceleration and agility
- a. Explain the components of acceleration and agility performance
    - i. Acceleration
    - ii. Posture
    - iii. Force into the ground
    - iv. Glute Engine
    - v. Linear stances
    - vi. Lateral Stances
    - vii. Directions of movement
    - viii. Acceleration sequence steps
  - b. Explain acceleration and agility drills
    - i. Start drills
    - ii. Dynamic floor drills
    - iii. Hip flexor drills
    - iv. Arm drive
    - v. Ladder

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- XI. Recovery
  - a. Explain why recovery is critical for physical performance improvement
    - i. Seyle's theory of Adaptation
    - ii. Better quality
    - iii. More volume
    - iv. Stay healthy
    - v. Improved training response
  - b. Explain causes, signs and recovery strategies for various types of fatigue.
    - i. Metabolic
    - ii. Neuromuscular
    - iii. Neurological
    - iv. Psychological
    - v. Environmental/travel
  - c. Explain post-training recovery strategies for various durations post-workout
    - i. Immediate post-workout
    - ii. After arriving home
    - iii. Late day recovery
    - iv. Sleep
    - v. Day after
  - d. Recognize recovery techniques
    - i. Hydrotherapy
    - ii. Contrast baths
    - iii. Sleep
    - iv. Nutrition/supplementation
    - v. Mindfulness
    - vi. Soft-tissue/mobility
    - vii. Stim
- XII. Acceleration and Agility Practical
  - a. Review, demonstrate and practice speed, acceleration and change of direction drills
    - i. Stances and starts
    - ii. Acceleration vs. absolute speed
    - iii. Change of direction mechanics
- XIII. Program Design
  - a. Explain the Seyle's general adaptation syndrome in the context of physical conditioning
    - i. Alarm
    - ii. Adaptation
    - iii. Exhaustion

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- b. Explain how to use periodization to improve program outcomes.
  - i. Definition of periodization
  - ii. Progression: Pattern, Volume, Load, Speed, Implement, Intensity, Frequency, sequence, Order etc...
- XIV. Program design
  - a. Explain volume/load relationship and progression
    - i. Body weight, light, moderate, heavy
    - ii. Complexity of movement
    - iii. Aerobic to aerobic power
    - iv. Plyometrics
  - b. Program Design Considerations
    - i. Phases: Foundational, Conditioning, Peak Performance
    - ii. Group vs. individual
    - iii. Equipment restraints
    - iv. Instructor control
    - v. Autoregulation
  - c. Implement and evaluate
    - i. Keep attendance
    - ii. Monitor progress
    - iii. Test
    - iv. Log workouts
    - v. Chart progress
- XV. Circuit Training
  - a. Define circuit training
    - i. Interval training combining a variety of exercises
    - ii. Can provide benefits of multiple exercise modes
  - b. Explain prerequisites to successful circuit training
    - i. Sufficient GPP
    - ii. Proficiency in movement patterns
    - iii. No injuries
  - c. Explain how circuits can be performed
    - i. Rounds/stages
    - ii. Time
    - iii. Repetitions
  - d. Explain circuit workout design
    - i. Rest period considerations
    - ii. Available methods/Exercise selection

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- iii. Tapering/adjusting to ability
      - iv. Equipment/Space needs
    - e. Recognize Circuit Training Outcomes
      - i. Physiological adaptations
      - ii. Practical advantages
  - XVI. Circuit Training Practical
    - a. Review, demonstrate and practice circuit training
      - i. Bodyweight circuit
      - ii. Resistance implement circuit
  - XVII. Testing: Work Sample Test Battery (WSTB):
    - a. Explain: Physical Fitness Assessments
      - i. Pre-training WSTB
      - ii. Push Ups
      - iii. Pull Ups
      - iv. Sit Ups
      - v. 1.5 mile Run
      - vi. Body Composition
    - b. WSTB
      - i. POST-required final exam
      - ii. Timing
      - iii. Proctor training
      - iv. Test administration
      - v. Scoring
      - vi. Job relatedness
        - 1. Related to FTO success
        - 2. Based on job analysis
  - XVIII. Work Sample Test Battery Practical
    - a. Review, demonstrate and practice Work Sample Test Battery administration
      - i. Equipment requirements
      - ii. Set Up
      - iii. Stations
      - iv. Testing
      - v. Scoring
      - vi. Common Errors
      - vii. Information resources
  - XIX. Mobility and Stability
    - a. Recognize joints where mobility or stability is a concern.



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- i. Gleno-humeral – Mobility
    - ii. Scapular – Stability
    - iii. Thoracic spine – Mobility
    - iv. Lumbar Spine – Stability
    - v. Hip – Mobility
    - vi. Knee – Stability
    - vii. Ankle – Mobility
    - viii. Foot – Stability
  - b. Explain functional core stability systems
    - i. Serape effect
    - ii. Anterior X
    - iii. Posterior X
    - iv. Diagonal – rotational X
    - v. Transverse abdominus
  - c. Explain mobility/stability training concepts
    - i. Flexibility
    - ii. Activation/strength
    - iii. Mobility/strength
    - iv. Multi-plane
    - v. Progressions
    - vi. Lengthen-strengthen
    - vii. Above/below hip
- XX. Energy Systems
  - a. Explain the function of energy systems and the characteristics of training to improve performance in each
    - i. Aerobic
    - ii. Anaerobic
  - b. Explain methods of training
    - i. Aerobic
      - 1. Locomotive, rhythmic using multiple muscle groups
      - 2. Some types of interval training (Aerobic Power)
      - 3. Some types of circuit training (sustainable output)
    - ii. Anaerobic
      - 1. Interval training
      - 2. Short duration and high intensity
      - 3. Unsustainable pace

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- c. Explain interval training variables and their recommended ranges for alactic vs. lactic anaerobic training
  - i. Work duration
  - ii. Rest duration
  - iii. Volume per set
  - iv. Total volume
- XXI. Core training
  - a. Define and explain the purpose of core training
    - i. Core – area from chest to mid-thigh 360 degrees
    - ii. Core training functions
    - iii. Core training implements
  - b. Explain why core training is important
    - i. Lower core generates power for locomotion
    - ii. Upper core transmits power into the upper body and to the hands (core to extremity concept)
  - c. Explain core training principles and techniques
    - i. Core vector training protocols for stability
    - ii. Unilateral loading protocols
    - iii. Areas of focus for injury preventions
    - iv. Pattern, progression and programming
    - v. Quantity of core training
    - vi. Quality of core training
- XXII. Physical training instructors need to demonstrate core training exercise techniques.
  - a. Review, demonstrate and practice core training techniques
    - i. Core on the floor – Sit-ups, Planks, Superman, Dead bugs
    - ii. Stability Ball Exercises – Planks, Leg Curls, Curl-Ups
    - iii. Medball Exercises – Russian twists, Slams, Chops, Throws
- XXIII. Performance Evaluation Techniques
  - a. Methods of recognition
    - i. Peer review
    - ii. Self-evaluation
    - iii. Demonstration
  - b. Recognize reasons to use alternative methods of training
    - i. Match conditioning needs to available equipment and facilities
    - ii. Add tolls
    - iii. Injury prevention
    - iv. Break plateaus

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- v. Team building
- vi. Fun
- c. Recognize implements for alternative methods and exercise techniques for each
  - i. Sandbags
  - ii. Ledges
  - iii. Jerry Cans
  - iv. Towing Chains
  - v. Tires
  - vi. Patrol car push
  - vii. Sledge hammer
  - viii. Logs
  - ix. Gurney
  - x. Partner carries or drags
  - xi. Plate Carriers
  - xii. Gas Masks
  - xiii. Rucks
- d. Understand safety considerations for alternative methods
  - i. Correct movement patterns regardless of implement
  - ii. Test before class
  - iii. Use less weight than traditional implements
- XXIV. Leadership
  - a. Recognize characteristics of winners
    - i. Commitment/consistency
    - ii. Sacrifice/discipline
    - iii. Focus/intensity
    - iv. Central governor theory
  - b. Explain the characteristics and elements of leadership
    - i. Leading by influence vs. authority
    - ii. Traits of a leader
    - iii. Responsibilities of the leader to the team
    - iv. Setting the standards
    - v. Empowering the leaders to lead
    - vi. Leading by example
- XXV. Injury assessment, safety and legal issues
  - a. Recognize injury causes
    - i. Acute vs. chronic
    - ii. Accidents

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- iii. Poor training practices
- iv. Equipment
- v. Lack of conditioning
- vi. Improper warm-up
- vii. Inattention
- b. Demonstrate a simple method to assess and treat injuries
  - i. Identify sign/symptoms stages
  - ii. Pain vs. discomfort
  - iii. Rest and Compression
  - iv. Cross-Education Principal
- c. Recognize the content of POST Safety Guidelines
  - i. Facility
  - ii. Equipment
  - iii. Instructor
  - iv. Staff-to-student ratios
  - v. Presentation
  - vi. Specific safety rules
- d. Understand physical conditioning and testing related legal issues
  - i. Personal injury lawsuits
  - ii. Negligence
  - iii. Standards of practice
  - iv. Practice of medicine without a license
  - v. Reasonable accommodation
- XXVI. Adult Learning Concepts
  - a. Considerations for facilitating the deliverance of information to various students
    - i. Facilitator Motivations
      - 1. Knowledge
      - 2. Skills
      - 3. Learning Styles
      - 4. Class Participation
      - 5. Legal Issues
  - b. Considerations for facilitating drills and training simulations
    - i. Goals
    - ii. Competencies
    - iii. Event Simulations
    - iv. Safety Rules and Guidelines
    - v. Additional Resources

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- XXVII. Group Assignments
  - a. Review Group teach-back activities to be done on day four
  - b. Review group program design activities to be done day four
- XXVIII. Teach back learning activity
  - a. Participate in a learning activity with given needs assumptions, purpose, equipment and facilities information by the instructor. Student will design a brief warm-up, workout or recovery session while the class is under instructor supervision.
    - i. Needs analysis assumptions
    - ii. Purpose/goal
    - iii. Equipment and facilities give
- XXIX. Program design learning activity
  - a. Participate in a learning activity in which, given needs analysis assumptions, equipment and facilities information, groups will design and present a brief program plan.
    - i. Needs analysis assumptions
    - ii. Equipment and facilities available
- XXX. Final Written Examination
- XXXI. Final Examination scoring and review