EXPANDED COURSE OUTLINE

PHYSICAL TRAINING INSTRUCTOR COURSE

I. Orientation

A. Introductions
    1. Participants
    2. Instructors
B. Orientation
    1. Housekeeping
    2. Review safety policy
    3. Collect PERQ's & Emergency Notification Cards
    4. Travel expense reimbursement
    5. Instructor expectations

II. Course objectives and content: training like a "Tactical Athlete."

A. Review course objectives.
    1. Understand the science that supports methods and techniques of physical conditioning.
    2. Explain strength training techniques, principles of training, practical nutrition, warm up drills, acceleration and agility training, recovery, programming workouts and training cycles, circuit training for fitness, strength, and power, core training, POST-required testing, mobility and stability training for injury prevention, energy system training, injury assessment, safety protocols, and legal issues, and how to create winners through leadership.
    3. Review, demonstrate and practice power lifts, Olympic lifts, acceleration training, plyometrics training, an Olympic lift workout, a power lift workout, circuits, Work Sample Test Battery, suspension training, core training, heart rate training, alternate methods of training, teaching techniques, and program design.

B. Understand the idea of training to be a Tactical Athlete.
    1. Purpose
        a. Assess operational fitness
        b. Develop/maintain fitness
        c. Reduce injuries
        d. Improve performance
    2. Key strategies
        a. Train like professional athletes
        b. Develop the tactical athlete specific to job demands
        c. Learn high-performance nutritional strategies
        d. Incorporate strategies of a healthy lifestyle

3. Who is the tactical athlete in law enforcement?
4. Physiological, environmental, and nutritional demands of the job

C. Review course content
    1. Lectures
    2. Exercise technique practice
    3. Learning activities

III. Basic concepts of anatomy, physiology and biomechanics.

A. Explain terminology used to explain kinesiology, functional anatomy and biomechanics.
    1. Functional anatomy
    2. Kinesiology
    3. Anatomical position
    4. Planes
    5. Biomechanics

B. Explain the basic function of the neural, skeletal, musculoskeletal and energy systems
    1. Neural system
    2. Skeletal system
    3. Musculoskeletal system
    4. Energy systems

C. Explain factors that contribute to strength performance.
    1. Neural factors
    2. Muscular factors
    3. Muscle fiber architecture and fiber alignment
    4. Biomechanics- types of forces, power

IV. Basic lifting and spotting-hands on weight room.

A. Review, demonstrate and practice Olympic lift techniques.
    1. Snatch
    2. Clean
    3. Jerks: Jerk – Push Jerk – Push Press

B. Review, demonstrate and practice squat and dead lift techniques
    1. Dead lift
    2. Squats – back, front, overhead
    3. Bench press

C. Review, demonstrate and practice assist lifts techniques
    1. Presses: alternate, extended alternate, single arm

2. Pulls: pull-ups, rows, machine pulls (alternate, contracted alternate, single arm)

V. Strength Training and Principles of Training.

A. Explain strength training patterns of movement.
1. Push
2. Pull
3. Leg
4. Core
5. Bend Overs
6. Total Body

B. Explain strength training implements.
1. Bars
2. Dumbbells / Kettlebells
3. Bands
4. Tubing
5. Machines
6. Balls – Medicine / Stability
7. Suspension

C. Explain strength training variables.
1. Volume
2. Load
3. Speed of movement
4. Time under tension (Holds / Pauses)
5. Variability – implement, loads, volumes, etc.
6. Consistency

D. Explain the principles of training
1. Specificity
2. Carryover to Activity/Function
3. Overload
4. Progression
5. Individuality
6. Principle of diminishing returns
7. Principle of reversibility
8. Detraining

E. Explain characteristics of training prescription for required components
1. Resistance training
2. Acceleration, agility, plyometric and power training

F. Understand program design considerations
1. Program design progressions

a. Foundational phase
b. Conditioning phase
c. Peak performance phase

2. Considerations for all phases
3. Order of exercise
4. Volume per session
5. Intensity
6. Rest between sets
7. Recovery between sessions
8. Frequency
9. Intensity – Volume relationship
10. Training template examples

VI. Strength Training: push, pull and squats

A. Demonstrate Giant Set – Push Set
   1. Push
   2. Pull
   3. Squat

B. Demonstrate Super Giant Set
   1. Push+Push
   2. Pull+Pull
   3. Squat+Squat

C. Demonstrate Super Set with Aerobic Set
   1. Push+Pull+Aerobic
   2. Leg+Core+Aerobic

VII. Post P.T. Requirements

A. Identify reference material containing POST requirements.
   1. Training and Testing Specifications
   2. POST Administrative Manual
   3. Course Binder
   4. Basic Course Informational Web Site

B. Explain important requirements.
   1. PT Scheduling
   2. Modified PT
   3. Conditioning Goals
   4. Testing
   5. Learning Activities
   6. Program Modification

VIII. Nutrition

A. Explain the basic nutrient requirements necessary for physical training and physical performance.
    1. Protein
    2. Carbohydrate
    3. Fat
    4. Vitamins
    5. Water

B. Explain how to apply nutrition for performance.
    1. Train hard
    2. Eat right
    3. Rest, recover and regenerate
    4. Nutrient timing
    5. Sample meal ideas on the go
    6. Sample snack ideas on the go
    7. The seven questions

C. Explain pros and cons of supplements.
    1. Protein supplements
    2. Creatine
    3. Caffeine
    4. Ephedrine – unsafe & illegal

IX. Understanding Warm-ups

A. Explain why the warm up is a critical component of the training and conditioning process.
    1. Raise body temperature
    2. Tone, tempo, and attitude
    3. Turn on neuromuscular system
    4. “Pre-hab” injury prevention

B. Explain specific warm up content choices and their functions.
    1. Linear, lateral, backward track drills
    2. External rotation - legs
    3. Rhythm/Drill Mechanics
    4. Posture
    5. Arm drive
    6. Foot drop/Casted ankle
    7. Strength
    8. Plyometric

X. Warm-up, hands on

A. Review, demonstrate and practice warm up routines.
    1. Dynamic track and field warm-up
    2. Corrective exercise warm-up
    3. In-place warm-up

XI. Acceleration and agility

A. Explain the components of acceleration and agility performance.
    1. Acceleration
    2. Posture
    3. Force into the ground
    4. Glute Engine
    5. Linear stances
    6. Lateral stances
    7. Directions of movement
    8. Acceleration sequence steps

B. Explain acceleration and agility drills.
    1. Start drills
    2. Dynamic floor drills
    3. Hip flexor drills
    4. Toe up drill
    5. Arm drive

C. Know how to teach acceleration & agility
    1. Teach acceleration in warm-up daily
    2. Teaching tips
    3. Workouts
    4. Start drills
    5. Agility drills

XII. Recovery.

A. Explain why recovery is critical for physical performance improvement.
    1. Better quality
    2. More volume
    3. Stay healthy
    4. Improved training response

B. Explain causes, signs and recovery strategies for various types of fatigue.
    1. Metabolic
    2. Neuromuscular
    3. Neurological (brain)
    4. Psychological

5. Environmental / travel

C. Explain post-training recovery strategies for various durations post-workout.
    1. Immediate post-workout
    2. After arriving home
    3. Late day recovery
    4. Prepare for sleep
    5. Next day

D. Recognize recovery techniques.
    1. Hydrotherapy
    2. Contrast tubs / shower
    3. Pool workout
    4. Float
    5. Cold bath
    6. Sleep
    7. Training routine / environment

XIII. Acceleration and Agility-Hands on

A. Review, demonstrate and practice speed, acceleration and change of direction drills.
    1. Stances and starts
    2. Acceleration and absolute speed
    3. Change of direction mechanics

XIV. Program Design.

A. Explain the General Adaptation Syndrome in the context of physical conditioning.
    1. Alarm
    2. Adaptation
    3. Exhaustion

B. Explain how to use periodization to improve program outcomes.
    1. Definition of periodization
    2. Pattern-progression
    3. Volume-progression
    4. Load-progression
    5. Speed-progression
    6. Time Under Tension-progression
    7. Multi-plane stress-progression
    8. Instability-progression
    9. Implement-progression

10. Intensity-progression
11. Frequency-progression
12. Sequence-progression
13. Order-progression
14. Volume / Load relationship-progression

XV. Program Design.

C. Explain volume ranges and volume / load progression.
   1. Body weight / light load / moderate / heavy
   2. Squats / cleans & snatches / presses / pulls
   3. Speed / speed endurance
   4. Agility drills
   5. Plyometrics

D. Program Design Considerations
   1. Phases: Foundational, conditioning, peak performance
   2. Programming steps and tips
   3. Needs Analysis
   4. Programming plans
   5. Instructor control

E. Implement and evaluate
   1. Keep attendance
   2. Monitor progress
   3. Test
   4. Log workouts
   5. Chart progress

XVI. Circuit Training.

A. Define circuit training.
   1. Interval training combining a variety of exercises
   2. Can provide benefits of multiple exercise modes

B. Explain prerequisites to successful circuit training.
   1. Work capacity base
   2. Core strength
   3. Clean bill of health
   4. Proper movement patterns
   5. Not currently managing injuries

C. Explain how circuits can be performed
   1. Rounds / Stages
   2. Time
   3. Repetitions

D. Explain circuit workout design
    1. Rest period considerations
    2. Available methods / Exercise selection
    3. Tapering / adjusting to ability
    4. Equipment / space needs

E. Recognize Circuit Training Outcomes
    1. Physiological adaptations
    2. Practical advantages

XVII. Circuit Training, hands on.

A. Review, demonstrate and practice circuit training
    1. Body weight circuit
    2. Resistance implement circuit
    3. Exercise circuit

XVIII. Testing: Work Sample Test Battery(WSTB).

A. Explain Physical Fitness Assessments
    1. Pre-training WSTB
    2. Push-ups
    3. Sit-ups
    4. 1.5 mile run
    5. Body Composition
    6. Additional assessment tests
    7. Age & gender based norms

B. WSTB
    1. POST-required final exam
    2. Timing
    3. Proctor training
    4. Test administration
    5. Scoring
    6. Job relatedness
        a. Related to FTO success
        b. Based on job analysis

XIX. Body composition measurement.

A. Review, demonstrate and practice Body Composition measurement by digital monitor method.
    1. Equipment and materials
    2. Set up
    3. Test procedures
    4. Computations

5. Norms

XX. Work Sample Test Battery- hands on.

A. Review, demonstrate and practice Work Sample Test Battery administration.
    1. Equipment requirements
    2. Set up
    3. Stations
    4. Testing
    5. Scoring
    6. Common errors
    7. Information resources

XXI. Mobility and stability.

A. Recognize the relationship between the hip and adjacent musculoskeletal areas.
    1. Anterior-oblique system
    2. Lateral system
    3. Posterior oblique system
    4. Inner unit
    5. Deep longitudinal system

B. Recognize joints where mobility or stability is a concern.
    1. Gleno-humeral – Mobility
    2. Scapular – Stability
    3. Thoracic spine – Mobility
    4. Lumbar spine – Stability
    5. Hip – Mobility
    6. Knee – Stability
    7. Ankle – Mobility
    8. Foot – Stability

C. Explain functional core stability systems
    1. Serape effect
    2. Anterior “X”
    3. Posterior “X”
    4. Diagonal – rotational “X”
    5. Transverse abdominus

D. Explain mobility/stability training concepts
    1. Flexibility
    2. Activation / strength
    3. Mobility / strength
    4. Multi-plane

5. Progressions
6. Lengthen – strengthen
7. Above / below hip

E. Recognize exercises for various stability/mobility functions.
    1. Glute driver
    2. Low ab control
    3. Abductor-quadratus
    4. Abductor-glute med
    5. Abductors in place
    6. Abductors moving
    7. Adductors in-place
    8. Rectus function
    9. Overactive upper abs
    10. Oblique function
    11. Stance progressions
    12. Posterior oblique system
    13. PNF core patterns
    14. Disassociation
    15. Anterior flexibility
    16. Posterior flexibility
    17. Lateral flexibility
    18. Medial flexibility
    19. Rotational flexibility
    20. Internal rotation
    21. Multi-lane training

F. Explain progression guidelines.
    1. General volume & loading methods
    2. Order of progressing variables
    3. Technique coaching points

XXII. Test worksheet calculations.

A. Complete a worksheet about assessments and testing.

XXII. Energy Systems.

A. Explain the function of energy systems and the characteristics of training to improve performance in each.
    1. Aerobic – oxidize carbohydrate & fats
    2. Anaerobic system – glycolysis & stored ATP, CP

B. Explain methods of training.
    1. Aerobic
        a. Continuous, rhythmic, using large muscles

b. Some types of interval training
c. Some types of circuit training

2. Anaerobic
    a. Interval training
    b. Competitive drills
    c. Shuttle runs
    d. Sprints
    e. Shuttle shift sprints

C. Explain interval training variables and their recommended ranges for alactic vs. lactic anaerobic training.
    1. Work duration
    2. Rest duration
    3. Post-set pause
    4. Volume per set
    5. Total volume

D. Explain general energy systems parameters
    1. Total volume of training yardage
    2. Speed/power development & state of recovery
    3. Order of energy system training with respect to speed, power and strength training
    4. Quality

XXIII. Core training.

A. Define and explain the purpose of core training.
    1. Core = area from chest to mid-thigh
    2. Core training functions
    3. Core training implements

B. Explain core training characteristics.
    1. Performance core training is executed standing
    2. Injury prevention core training can be done laying or standing

C. Explain why core training is important.
    1. Lower core generates power for locomotion
    2. Upper core transmits power into the upper body and to the hands

D. Explain core training principles and techniques.
    1. Core vector training protocols for stability
    2. Unilateral loading protocols
    3. Areas of focus for injury prevention
    4. Pattern, progression and programming
    5. Quantity of core training

6. Quality of core training

XXIV. Physical training instructors need to demonstrate core training exercise techniques.

A. Review, demonstrate, and practice core training techniques.
   1. Core on the floor – Sit-ups, Planks, Super Heros, Bird Dogs
   2. Stability Ball Exercises – Planks, Super Heros, Curl-ups, Leg Curls, etc.
   3. Mediball Exercises – Chops, Lifts, Twists, Slams, Scoops/Kneeling & Standing

XXV. Performance Evaluation Techniques

A. Methods of recognition
   1. Peer Review
   2. Self-evaluation
   3. Demonstration

B. Recognize reasons to use alternative methods of training.
   1. Match conditioning needs to available equipment & facilities
   2. Add tools
   3. Injury prevention
   4. Break plateaus
   5. Team building
   6. Fun

C. Recognize implements for alternative methods and exercise techniques for each.
   1. Portable implements
   2. Sandbags
   3. Bars or ledge
   4. Ammo cans
   5. Towing chains
   6. Tires
   7. Vehicle push
   8. Shovel / Sledge Hammer
   9. Logs
   10. Rocks
   11. Wood Crates
   12. Gurney
   13. Partner body weight
   14. Rocks
   15. Ruck Sack

C. Understand safety considerations for alternative methods

1. Correct movement patterns regardless of implement
2. Try out before teaching in class
3. Do not start with same weight as traditional implements
4. Start light, start slow
5. Use common sense!
6. Be aware of liability issues

XXVI. Leadership.

A. Recognize characteristics of winners
    1. Commitment / consistency
    2. Sacrifice / discipline
    3. Focus / intensity
    4. Psychology of Winning – Denis Waitley

B. Explain the characteristics and elements of leadership
    1. Leading by influence vs. authority
    2. Leaders are made, not born
    3. Traits of a leader
    4. Responsibilities of the leader to the team
    5. Leadership principles
    6. How leaders are created
    7. Setting the standards
    8. Empowering the leaders to lead

C. Explain leadership techniques.
    1. More is expected from the leader
    2. Leading from the front
    3. Encourager vs. discourager
    4. Communication
    5. Focus
    6. Positive and negative reinforcement
    7. Wooden method
    8. Words and mental pictures
    9. Well done is better than well said
    10. Excellence – Anson Dorrance
    11. Building leaders – creating winners
    12. Winners and champions

XXVII. Injury assessment, safety, and legal issues.

A. Recognize injury causes
    1. Acute / Chronic
    2. Accidents
    3. Poor training practices
    4. Equipment

5. Lack of conditioning
6. Insufficient warm-up
7. Inattention

B. Demonstrate a simple method to assess injuries
   1. Identify Sign / Symptom Stages
   2. Actions based on stage
   3. Injury assessment learning activity

C. Recognize the content of POST Safety Guidelines
   1. Facility
   2. Equipment
   3. Instructor
   4. Staff-to-student ratios
   5. Presentation
   6. Specific safety rules

D. Understand physical conditioning and testing related legal issues
   1. Personal injury lawsuits
   2. Negligence
   3. Standards of practice
   4. Practice of medicine without a license
   5. Reasonable accommodation

XXVIII. ADULT LEARNING CONCEPTS

A. Considerations for facilitating the deliverance of the information to various students

   1. Facilitator Motivations
      a. Knowledge
      b. Skills
      c. Learning Styles
      d. Class Participation
      e. Legal Issues

B. Considerations for facilitating drills and training simulations

   1. Goals
   2. Competencies
   3. Event Simulations
   4. Safety Rules and Guideline
   5. Additional Resources

XXIX. Group assignments.

A. Review group teach-back activities to be done on Day Five.

B. Review group program design activities to be done on Day Five.

XXX. Teach back learning activity.

A. Participate in a learning activity with given needs assumptions, purpose, equipment, and facilities information by the instructor. Students will design a brief warm-up, workout, or recovery session while the class is under instructor supervision.

1. Needs analysis assumptions (given)
2. Purpose / goal (given)
3. Equipment and facilities available (given)

XXXI. 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.
   1. Needs analysis assumptions (given)
   2. Equipment and facilities available (given)

XXXII. Final Written Examination.

XXXIII. Final Examination scoring and review.