

Appendix J

CPT

Content Outline and Domain Weightings

National Academy of Sports Medicine - Certified Personal Trainer (CPT)

Content Outline

Domain I: Basic and Applied Sciences (15%)

- A. Understand Concepts and Structures of Anatomy
 - 1 Nervous system
 - 2 Muscular system
 - 3 Skeletal system
 - 4 Cardiorespiratory system
- B. Understand Functions of Exercise Physiology
 - 1 Nervous system (e.g., motor units, action potential)
 - 2 Muscular system (e.g., sliding filament theory, muscle action spectrum)
 - 3 Skeletal system (e.g., arthrokinematics)
 - 4 Endocrine system (e.g., feedback mechanisms, responses to exercise)
 - 5 Cardiorespiratory system (e.g., cardiovascular physiology and cardiorespiratory physiology)
 - 6 Bioenergetics (e.g., energy systems, anaerobic vs. aerobic metabolism)
- C. Comprehend Principles of Human Movement Science
 - 1 Functional biomechanics (e.g., levers, force, torque, planes of motion, joint motion)
 - 2 Kinesiology
 - a. Force couple relationships
 - b. Length tension relationships
 - c. Reciprocal inhibition
 - d. Synergistic dominance
 - e. Kinetic chain
 - 3 Motor development
 - a. Motor learning
 - b. Motor control

Domain II: Assessment (15%)

- A. Perform, Interpret, and Record Subjective Assessments
 - 1 Types of subjective assessments
 - a. PAR-Q
 - b. Medical history
 - c. Medical risk factors (e.g., medications, surgeries, chronic disease, metabolic syndrome)
 - d. Lifestyle questionnaire (e.g., sleeping habits, occupation, hobbies, stress level)
 - 2 Special population – seniors

B. Perform, Interpret, and Record Objective Assessments

- 1 Cardiorespiratory assessment
 - a. Maximum heart rate
 - b. Heart rate training zones
 - c. Sub VO₂ max test (e.g., step test, Rockport Walk test, heart rate monitoring systems, metabolic testing)
 - 2 Physiologic assessments
 - a. Resting heart rate
 - b. Blood pressure
 - 3 Body composition assessments
 - 4 Strength assessments (e.g., maximal, submaximal)
 - 5 Performance assessments (e.g., stability, balance, power, speed, agility)
- C. Perform, Interpret, and Record Movement Assessments
- 1 Overhead Squat Test
 - 2 Single-leg Squat Test
 - 3 Pushing
 - 4 Pulling
- D. Perform, Interpret, and Record Postural Assessments
- 1 Upper extremity
 - 2 Lumbo-pelvic-hip complex
 - 3 Lower extremity

Domain III: Exercise Technique and Training Instruction (20%)

- A. Exercise Execution Following Kinetic Chain Checkpoints (e.g., starting position, ending position)
- 1 Integrated flexibility
 - a. Self myofascial release (SMR)
 - b. Static
 - c. Active
 - d. Dynamic
 - 2 Integrated training components (e.g., stabilization, strength, power)
 - a. Core training
 - b. Balance training
 - c. Reactive (plyometric) training
 - d. Speed, agility, and quickness training
 - e. Resistance training
 - 3 Cardiorespiratory stage training (e.g., base, anaerobic threshold, submaximal)

- B. Select Exercise Modification (pro-/regression)
 - 1 Neurological continuum (e.g., modality selection, extremity symmetry)
 - 2 Mechanical/movement patterns
 - 3 Bioenergetics
- C. Implement Safe Training Methods
 - 1 Spotting techniques
 - 2 Environment
 - 3 Exercise risk vs. benefit (e.g., behind the neck pulls/presses, dips, upright rows)
 - 4 Monitor exercise intensity
 - 5 Medical signs and symptoms that require training modifications
 - 6 Overtraining and its effects
- D. Understand Cueing Techniques
 - 1 Kinesthetic
 - 2 Auditory
 - 3 Visual

Domain IV: Program Design (20%)

- A. Understand and Apply Program Design Fundamentals
 - 1 Principle of specificity
 - a. Mechanical specificity
 - b. Neuromuscular specificity
 - c. Metabolic specificity
 - 2 Principle of overload
 - 3 Principle of variation
 - 4 Periodization (e.g., linear, undulating)
 - a. Stabilization (e.g., stabilization endurance training)
 - b. Strength (e.g., strength endurance training, hypertrophy, maximal strength)
 - c. Power
 - 5 General adaptation syndrome
 - a. Alarm reaction
 - b. Resistance development
 - c. Exhaustion

- 6 Acute variables
 - a. Exercise selection
 - b. Sets
 - c. Repetitions
 - d. Intensity
 - e. Tempo
 - f. Rest interval
 - g. Exercise order
 - h. Volume
 - i. Duration
 - j. Frequency
 - 7 Integrated training continuum
 - a. Warm up
 - b. Core training
 - c. Balance training
 - d. Reactive training
 - e. SAQ training
 - f. Resistance training
 - g. Cardiorespiratory Training
 - h. Cool down
 - 8 Resistance training systems
 - a. Single set
 - b. Multiple set
 - c. Super set
 - d. Pyramid set
 - e. Circuit training
 - f. Peripheral heart action
 - g. Split routines
 - h. Horizontal loading
 - i. Vertical loading
- B. Design Client-Specific Program Based Upon Assessment Results
- C. Create Client-Specific Cardiorespiratory Programs
- 1 Frequency
 - 2 Intensity
 - 3 Type
 - 4 Time
 - 5 Enjoyment

D. Understand Special Populations and Considerations for Exercise Program Design

- 1 Diabetes
- 2 Hypertension
- 3 Arthritis
- 4 Coronary heart disease
- 5 Obesity
- 6 Lung disease (e.g., asthma, COPD)
- 7 Osteoporosis
- 8 Youth
- 9 Seniors
- 10 Prenatal and postnatal

E. Design and Apply Program Modifications Based on Modalities (e.g., free weights, tubing, kettlebells)

F. Understand Physical Activity Guidelines for Americans

Domain V: Considerations in Nutrition (12%)

A. Understand Basic Nutritional Concepts

- 1 Carbohydrates
- 2 Protein
- 3 Fat
- 4 Water (role in diet and exercise)
- 5 Vitamins and minerals (e.g., general health, performance enhancement)
- 6 Calories (e.g., general health, weight gain/loss, performance enhancement)
- 7 Digestion and elimination
- 8 Understand Dietary Guidelines for Americans (e.g., food guide pyramid)
- 9 Meal timing and frequency (e.g., pre/post/during workout)

B. Understand Risk and Benefits of Nutritional Supplements and Ergogenic Aids

- 1 General health (e.g., multi-vitamin, calcium supplement)
- 2 Alter body composition (e.g., fat loss, mass gain)
- 3 Performance enhancement (e.g., anabolic steroids, caffeine, creatine)

- C. Understand Weight Management Concepts
 - 1 Diets
 - a. Healthy menu composition
 - b. Crash/fad/myth diets
 - 2 Law of thermodynamics
 - 3 Metabolic rates (e.g., basal, resting)
 - 4 Endocrine abnormalities
 - 5 Nutritional guidelines for body composition alteration
- D. Understand Nutritional Guidelines for Enhancing Athletic Performance (e.g., anaerobic, aerobic)

Domain VI: Client Relations and Behavioral Coaching (10%)

- A. Communication Components
 - 1 Types of communication
 - a. Verbal
 - b. Nonverbal
 - 2 Asking questions
 - a. Open-ended
 - b. Close-ended
 - 3 Listening (e.g., paraphrasing, active listening)
 - 4 Rapport building (e.g., showing empathy, validating)
- B. Understand and Facilitate Client Goal Setting Strategies and Procedures
- C. Implement Lifestyle and Behavioral Coaching Strategies
 - 1 Human behavior (e.g., cognitive, affective, physiological)
 - 2 Client expectations
 - 3 Coping strategies
 - a. Stress management
 - b. Time management
 - c. Interpersonal influence (e.g., social settings, work setting, family)
 - d. External influence (e.g., media, environment, cultural)

Domain VII: Professional Development, Practice, and Responsibility (8%)

- A. Understand and Uphold NASM-BOC Code of Professional Conduct
 - 1 Competencies through continuing education
 - 2 Safe and ethical training practices (e.g., OSHA)
 - 3 Facility maintenance (e.g., equipment, safety, layout, disinfection)
 - 4 Special considerations for training diverse clientele (e.g., age, gender, cultural background, ability)

- 5 Work environment differences (e.g., health club, corporate facility, cruise ship)
Role and professional limitations of personal trainer (e.g., referral to registered
- 6 dietitians, allied health care professionals)
- 7 Professionalism and ethical business practices
 - a. Liability insurance
 - b. Record keeping
 - c. Medical clearance
 - d. Physical appearance and attire
 - e. Timeliness
 - f. Sexual harassment awareness
 - g. Client confidentiality (e.g., HIPAA)
- B. Follow Proper Procedures in an Emergency Situation
- C. Implement Goal Setting Strategies and Procedures
 - 1 Personal
 - 2 Professional