



## **UPDATED NASM CPT EXAM BLUEPRINT**

The National Academy of Sports Medicine (NASM) contracted with ACT ProExam to conduct a practice analysis of Certified Personal Trainers (CPTs) in 2019.

This practice analysis study defines the current knowledge, skills and abilities that must be demonstrated by entry-level credential holders to safely and successfully practice. This study also serves as the “blueprint” for determining the content (performance domains) for the certification exam(s).

*Performance Domains as validated by the 2019 Job Analysis Study include the information below:*

Domain 1:	Basic and Applied Sciences and Nutritional Concepts	15%
Domain 2:	Client Relations and Behavioral Coaching	15%
Domain 3:	Assessment	16%
Domain 4:	Program Design	20%
Domain 5:	Exercise Technique and Training Instruction	24%
Domain 6:	Professional Development and Responsibility	10%

### ***DOMAIN 1: Basic and Applied Sciences and Nutritional Concepts***

#### ***KNOWLEDGE OF:***

**K1.** Concepts and structures of anatomy, including the nervous system, muscular system, skeletal system, cardiorespiratory system, and endocrine system

**K2.** Functions of exercise physiology related to:

- a. nervous system
- b. muscular system
- c. skeletal system
- d. endocrine system
- e. cardiorespiratory system
- f. digestive system
- g. bioenergetics and exercise metabolism

**K3.** Functional biomechanics (such as levers, force, torque)

**K4.** Principles of human movement science related to:



## ***DOMAIN 1 Continued...***

- a. planes of motion (sagittal, frontal, and transverse)
- b. muscle action spectrum (isometric, concentric, and eccentric)
- c. force-couple relationships (agonist, antagonist, synergist, and stabilizer)
- d. length-tension relationship
- e. stretch-shortening cycle
- f. reciprocal inhibition and autogenic inhibition
- g. joint actions (such as rotation, flexion, extension)
- h. integrated muscle system (global and local systems, including deep longitudinal subsystem, anterior oblique subsystem, and posterior oblique subsystem)

**K5.** Principles of motor development (motor learning, motor control, and motor behavior)

**K6.** Macronutrients (carbohydrates, protein, and fat)

**K7.** Micronutrients (vitamins and minerals)

**K8.** Hydration concepts and guidelines

**K9.** Recommendations and guidelines for caloric intake and expenditure

**K10.** Energy systems (ATP-PC System, glycolytic, and oxidative)

**K11.** Exercise post-oxygen consumption [EPOC]

**K12.** Units of energy measurement (kcal and calories)

**K13.** Dietary reference intakes

**K14.** Portion sizes, meal timing, and meal frequency

**K15.** Nutrient and energy density

**K16.** Crash/fad/myth diets

**K17.** Common nutritional supplements including possible risks, benefits, uses, and effects

**K18.** Food and supplement label reading

**K19.** Factors that can influence weight management physiology (such as the law of thermodynamics, poor sleep, endocrine abnormalities, medications, metabolism)



## ***DOMAIN 2: Client Relations and Behavioral Coaching***

### ***TASKS***

1. Establish and maintain professional client-trainer relationship using techniques such as rapport building, active listening, and communication strategies.
2. Develop and continuously re-evaluate realistic short- and long-term goals in collaboration with the client based on the outcome of assessments.
3. Facilitate lifestyle and behavioral change through education, monitoring, and communication strategies.

### ***KNOWLEDGE OF:***

***K20.*** Communication methods and strategies (such as verbal and nonverbal communication, active listening, rapport building)

***K21.*** Goal types (such as SMART, short-term, long-term, lifetime, process, outcome)

***K22.*** Client expectation management related to client-trainer relationship and overall training goals

***K23.*** Transtheoretical Model of Behavior Change (or Stages of Change)

***K24.*** Behavioral coaching methods (such as motivational coaching, reinforcements)

***K25.*** Behavior change strategies (such as habit stacking, stress reduction, time management)

***K26.*** Barriers to behavior change (such as social influences, environmental factors)

***K27.*** Psychological responses to exercise (such as stress relief, improved self-esteem, positive self-image)

## ***DOMAIN 3: Assessment***

### ***TASKS***

1. Select, perform, document, and interpret results of subjective assessments using tools and techniques (such as questionnaires and interviews) to assess client's medical history, needs, and readiness for fitness program.
2. Select, perform, document, and interpret results of:



## ***DOMAIN 3 Continued...***

### **TASKS**

- a. static postural assessments of upper and lower extremities and lumbo-pelvic-hip complex in order to evaluate muscle imbalances.
- b. movement assessments (such as overhead squat, push/pull, single leg squat) in order to evaluate proper versus improper movement patterns.
- c. strength, muscular endurance, and power assessments (such as 1-repetition maximum strength tests, push-up test, vertical jump test).
- d. speed, agility, and quickness assessments (such as 40-yard dash, 5-10-5 drill, box drills).
- e. cardiorespiratory assessments (such as 3-minute step test, Rockport Walk Test, VO2MAX test, rate of perceived exertion [RPE]).
- f. physiological assessments (such as resting heart rate, blood pressure, and waist-to-hip ratio).
- g. Speed Agility Quickness (SAQ) training

### ***KNOWLEDGE OF:***

- K28.** Physical Activity Readiness Questionnaire (PAR-Q) assessment
- K29.** Essential elements of personal, occupational, and family medical history
- K30.** Medical risk factors (such as pregnancy, eating disorders, hypertension, age of the client)
- K31.** Elements of a lifestyle questionnaire (such as sleep, stress level, tobacco and alcohol use)
- K32.** Cardiorespiratory assessments (such as 3-minute step test, Rockport Walk Test, VO2MAX test, rate of perceived exertion [RPE]).
- K33.** Physiological assessments relevant to CPTs (such as resting heart rate, blood pressure, waist-to-hip ratio)
- K34.** Kinetic chain checkpoints (ankles, knees, lumbo-pelvic-hip complex, shoulders, and head)
- K35.** Applicability of assessments from other health professionals (such as blood pressure, cholesterol, glucose, BMI)
- K36.** Body composition assessments and calculations (such as skin fold calipers, circumference, bioelectrical impedance, fat mass, lean mass)
- K37.** Static postural assessment



### ***DOMAIN 3 Continued..***

**K38.** Performance assessments (such as 1-repetition maximum, vertical jump, long [broad] jump)

**K39.** Types of movement assessments (such as overhead squat, single-leg squat, push, pull, gait)

**K40.** Considerations for selection of assessment(s) to administer based on client's goals, fitness level, and contraindications

**K41.** Considerations and modifications for performing assessments with special populations (such as youth; seniors; prenatal, clinical, and obese clients)

**K42.** Standards for assessments and outcome expectations for special populations (such as youth; seniors; prenatal, clinical, and obese clients)

**K43.** Indicators that a client's condition requires a medical release/clearance or is out of scope and requires referral to another professional

**K44.** Criteria for reassessment (such as time lapsed, client plateau, change in goals, change in health, change in phase, weight loss or gain)

### ***DOMAIN 4: Program Design***

#### ***TASKS***

1. Design client-specific program, based on assessment results and client abilities, including:
  - a. Flexibility training
  - b. Resistance training
  - c. Cardiorespiratory training
  - d. Core training
  - e. RBalance training
  - f. Reactive training, including plyometrics.
  - g. Speed Agility Quickness (SAQ) training

#### ***KNOWLEDGE OF:***

**K45.** Periodization concepts, programming, and methods, including:



## ***DOMAIN 4 Continued...***

- a. macro-, meso-, and microcycles
- b. levels (such as stabilization, strength, power)
- c. phases (such as stabilization endurance, strength endurance, hypertrophy, maximal strength, power)
- d. approaches (linear and undulating)

**K46.** Principles of specificity, variation, and overload

**K47.** General adaptation syndrome

**K48.** Flexibility training methods (such as self-myofascial release (SMR), static, active-isolated, dynamic stretching)

**K49.** Resistance training systems (such as single set, multiple set, super set, pyramid set, circuit training, vertical loading, horizontal loading)

**K50.** Resistance training modalities (such as machines, body weight, free weights)

**K51.** Cardiorespiratory training methods (such as zone/stage training, interval training, steady state)

**K52.** Core training exercises for core-stabilization (such as plank, bird dog, bridge), core-strength (such as reverse crunches, ball crunches, cable rotations) and core-power (such as soccer throw, rotation chest pass, medicine ball pullover throw)

**K53.** Balance training exercises for balance-stabilization (such as single-leg balance, single-leg balance and reach, single-leg windmill), balance-strength (such as single-leg squat, single-leg deadlift, lunge to balance) and balance-power (such as single-leg box hop-up, single-leg box hop-down, multiplanar single-leg hop)

**K54.** Proprioceptive progression and regression (such as closing or opening eyes, single-leg stand, sitting)

**K55.** Reactive training exercises for reactive stabilization (such as squat jump with stabilization, box jump-up to stabilization, multiplanar jumps with stabilization), reactive strength (such as butt kicks, tuck jump, squat jump) and reactive power (such as box run steps, ice skaters, proprioceptive plyometrics)

**K56.** Speed, agility, and quickness (SAQ) training exercises (such as resisted sprints, cone drills, agility ladder drills)

**K57.** Exercise progression/regression

**K58.** Acute variables (such as sets, repetitions, exercise selection, progressions, FITTE principle)

**K59.** Risk versus reward of different modalities and exercises

**K60.** Overtraining, rest, and recovery



## ***DOMAIN 4 Continued...***

**K61.** Current trends and their applicability to individual training programs

**K62.** Types of fitness technology (such as heart rate monitors, performance trackers, nutrition trackers, applications) and their uses and benefits

**K63.** Considerations for selection of exercises based on client's assessment results, goals, fitness level, and contraindications

**K64.** Considerations for exercise program design for special populations (such as youth; seniors; prenatal, clinical, and obese clients)

## ***DOMAIN 5: Exercise Technique and Training Instruction***

### ***TASKS***

1. Provide instruction and demonstrate proper exercise technique for clients
2. Observe, analyze, and provide feedback on client's exercise technique to ensure safe and effective movement
3. Identify need for and implement appropriate exercise progressions and regressions.
4. Administer safe, effective, and professional spotting techniques when needed.

### ***KNOWLEDGE OF:***

**K65.** Proper set-up and technique of:

- a. flexibility training methods
- b. core exercises
- c. balance exercises
- d. reactive exercises, including plyometrics
- e. cool-down protocol
- f. resistance training exercises
- g. warm-up protocol
- h. cool-down protocol



## ***DOMAIN 5 Continued...***

**K66.** Kinesthetic, auditory, and visual cueing techniques

**K67.** Safe training practices (such as maintaining a safe environment, monitoring exercise intensity, proper equipment setup)

**K68.** Physical signs or symptoms that indicate need for training modification or discontinuation

**K69.** Application and modalities of exercise regressions and progressions

**K70.** Safe, effective, and professional spotting techniques

**K71.** Proper breathing techniques during exercise

**K72.** Kinetic chain checkpoints (ankles, knees, lumbo-pelvic-hip complex, shoulders, and head)

## ***DOMAIN 6: Professional Development & Responsibility***

### ***TASKS***

1. Adhere to applicable professional standards, guidelines, regulations, and codes of conduct
2. Act within CPT scope of practice (such as respecting occupational limitations, referring clients to other professionals when necessary).
3. Develop and grow business (such as lead generation; client acquisition, retention, and ascension; marketing; networking; financial planning).
4. Follow proper safety procedures (such as reporting equipment malfunction, hazards, damages, dangers).
5. Follow proper emergency protocols (such as activate EMS, implement facility emergency action plan).
6. Engage in continuing education and professional development in order to remain current, grow expertise, and increase credibility.

### ***KNOWLEDGE OF:***

**K73.** Professional and ethical guidelines, standards, and codes of conduct (such as record keeping, client medical clearance, physical appearance and attire, punctuality)

**K74.** Scope of practice and professional limitations of personal trainer (such as psychological counseling, meal planning, diagnosing injury)

**K75.** Requirements for maintaining professional credentials

**K76.** Resources regarding rules and regulations applicable to CPTs





## ***DOMAIN 6 Continued...***

***K77.*** Marketing concepts and techniques (such as branding, business-to-business [B2B] and business-to-consumer [B2C] networking, sponsoring, use of social media, community involvement, video blogging)

***K78.*** Techniques for client acquisition, retention, and ascension (such as professional and timely communications, obtaining client feedback, events, promotions, social media campaigns, email campaigns)

***K79.*** Sales concepts and techniques (such as lead generation, presenting, prehandling, and overcoming objections)

***K80.*** Equipment maintenance and safety considerations

***K81.*** Emergency protocols (such as activating EMS, implementing facility emergency action plan)

***K82.*** Credible resources of information regarding health and fitness education (such as scholarly articles, peer-reviewed articles, conferences, workshops)

***K83.*** Opportunities for professional development through education and other professional experiences