



Personal Trainer Study Guide

If you are studying for the Personal Trainer Certification Exam, you will want to read and study the following sections and chapters of the **NETA Fitness Professional Manual** prior to attending the Personal Trainer Certification workshop and/or before sitting for the Personal Training certification exam:

Section 1 – Exercise Related Sciences

Chapter 1 - Exercise Physiology

- A. Terminology
- B. Energy Systems - Bioenergetics
 - B.1 Phosphagen System
 - B.2 Anaerobic Glycolysis
 - B.3 Aerobic Glycolysis
 - B.4 Fatty Acid Oxidation
- C. Metabolic Responses to Exercise
 - C.1 Short Term
 - C.2 Long Term
 - C.3 Transition
- D. Cardiorespiratory Adaptations
 - D.1 Terminology
 - D.2 Anatomy of the Heart
 - D.3 Respiratory Adaptations
- E. Muscle Physiology
 - E.1 Muscle Fiber Type
 - E.2 Neuromuscular System

Chapter 2 - Anatomy

- A. Skeletal
 - A.1 Joint Articulations
 - A.2 Spine
- B. Muscular
 - B.1 Muscle Classification and Structure
 - B.2 Terminology for Location
 - B.3 Muscle Functions
 - B.4 Muscle Contraction

Chapter 3 - Kinesiology

- A. Joint Actions and Descriptions
- B. Muscles of the Shoulder Complex
- C. Muscles of the Upper Arm
- D. Muscles of the Trunk
- E. Muscles of the Hip and Knee
- F. Muscles of the Lower Leg

Chapter 4 - Biomechanics

- A. Newton's Laws of Motion
- B. Lever Systems
- C. Principles of Applied Biomechanics
- D. Biomechanics of Torque
- E. Types of Mechanical Stress
- F. Deformation Response to Force
- G. Postural Alignment

- G.1 Alignment Viewed from a Profile
- G.2 Alignment and the Pull of Gravity

Chapter 5 - Nutrition

- A. Terminology
- B. Dietary Guidelines
 - B.1 Adequate Nutrients within Calorie Needs
 - B.2 Weight Management
 - B.3 Physical Activity
 - B.4 Food Groups to Encourage
 - B.5 Fats
 - B.6 Carbohydrates
 - B.7 Sodium and Potassium
 - B.8 Alcohol
 - B.9 Food Safety
- C. USDA Food Pyramid
- D. Healthy Eating Pyramid
- E. Six Essential Nutrients
 - E.1 Carbohydrates
 - E.2 Protein
 - E.3 Fats
 - E.4 Vitamins
 - E.5 Minerals
 - E.6 Water
- F. Nonessential Nutrients
 - F.1 Fiber
 - F.2 Cholesterol
 - F.3 Alcohol
- G. Food Labeling
 - G.1 Nutrition Panels
 - G.2 Percent Daily Value (%DV)
 - G.3 Common Serving Sizes
 - G.4 Nutritional Claims
 - G.5 Serving Percentages
- H. Weight Management
- I. Eating Disorders
 - I.1 Anorexia Nervosa
 - I.2 Bulimia Nervosa
 - I.3 Binge Eating Disorder
 - I.4 Professional Ethics
 - I.5 Resources

Section 1 Review

Section 2 – Injury Management & Medical Considerations

Chapter 6 - Injury Prevention

- A. Terminology
- B. Principles of Injury Prevention
 - B.1 Proper Warm-up
 - B.2 Biomechanics
 - B.3 Do Not Exercise Through Pain
 - B.4 Program Design
 - B.5 Muscular Balance
 - B.6 Equipment
 - B.7 Shoes
 - B.8 Flooring
 - B.9 Workout Pace
 - B.10 Cool-down
 - B.11 Stretching

Chapter 7 - Common Exercise Related Injuries

- A. Strain
- B. Sprains
- C. Closed Wounds
- D. Open Wounds
- E. Fractures
- F. Shin Splints
- G. Plantar Faciitis
- H. Patella Injuries
- I. Achilles Injuries
- J. Meniscus Tears
- K. Tendinitis
- L. Low Back Injuries
- M. Delayed Onset Muscle Soreness

Chapter 8 - Responding to Injuries

- A. P.R.I.C.E.
- B. Physician Prescribed Treatment
- C. Long Term Injury Management
- D. Emergency Procedures
- E. Recognizing Warning Signs
- F. CPR

Chapter 9 - Medical Considerations

- A. Asthma
- B. Arthritis
- C. Diabetes
- D. Hypertension
- E. Osteoporosis

- F. Coronary Artery Disease
- G. Heat Stress
 - G.1 Heat Cramps
 - G.2 Heat Exhaustion
 - G.3 Heat Stroke

Section 3 - Legal Issues and Professionalism

Chapter 10 - Documentation

- A. Informed Consent
- B. Waivers
- C. Medical Clearance
- D. Health History

Chapter 11 - Legal Issues

- A. Liability
- B. Negligence
- C. Waivers
- D. Liability Insurance
- E. Potential Sources of Liability
- F. Scope of Practice
- G. Environmental Safety Concerns

Chapter 12 - Music Licensing & Copyright Laws

- A. Copyright Laws
- B. Music Licensing

Chapter 13 - Professional Code of Ethics

- A. Personal Trainer
- C. Maintaining Certification and Continuing Education

Chapter 14 - Communication and Leadership

- A. Effective Communication Skills
 - A.1 The Message
 - A.2 Verbal - Active Listening Skills
 - A.3 Non-Verbal – Active Listening Skills
- B. Goal Setting Strategies
 - B.1 Establishing Reasonable Goals
 - B.2 Short Term Goals
 - B.3 Long Term Goals
- C. Behavior Modification
 - C.1 Keys to Change
 - C.2 Stages of Change
 - C.3 Roles of a Fitness Professional
 - C.4 Characteristics to Assist Change
- D. Adult Learning
 - D.1 Learning Patterns
 - D.2 Personal Learning Philosophies
 - D.3 Stages of Learning
- E. Exercise Adherence and Motivation Strategies
 - E.1 Strategies to Promote Exercise Adherence
 - E.2 Motivation Strategies
- F. Stress Management
 - F.1 Personality Variables

- F.2 Responses to Stressors
- F.3 Stress Management Strategies

Section 4 – Health and Fitness Assessment

Chapter 15 - Health Risk Assessment

- A. Common Screening Tools – PAR-Q
- B. Components of a Health History
- C. Health History
- D. Risk Factors for CAD
- E. Classification of Health Status
- F. Decisions Based on Health Status
 - F.1 Medical Clearance
 - F.2 Supervised Program
 - F.3 Unsupervised Program
 - F.4 Minimum Screening
 - F.5 Maximal GXT

Chapter 16 - Fitness Assessment

- A. General Considerations
- B. Resting Measurements
 - B.1 Resting Heart Rate
 - B.2 Resting Blood Pressure
- C. Anthropometric Measurements
 - C.1 Circumference Measurements
 - C.2 Waist-to-Hip Ratio
 - C.3 Body Mass Index
 - C.4 Skinfold Testing
- D. CRE Testing
- E. Muscular Strength Testing
- F. Muscular Endurance Testing
- G. Flexibility Testing
- H. Common Field Test Protocols
 - H.1 Rockport One-Mile Walk Test
 - H.2 Cooper 1.5-Mile Run
 - H.3 YMCA 3-Minute Step Test
 - H.4 YMCA Bench Press Endurance Test
 - H.5 Push-up Test
 - H.6 Partial Curl-up Test
 - H.7 Sit and Reach Flexibility
 - H.8 Shoulder Flexibility Test
 - H.9 Trunk Extension Test
 - H.10 Balance Assessment Protocols
- I. Postural/Structural Deviations of the Upper Body
- J. Postural/Structural Deviations of the Lower Body

Section 5 – Fitness Programming

Chapter 17 -Physical Fitness

- A. Fitness Components
 - A.1 CRE
 - A.2 Muscular Endurance
 - A.3 Muscular Strength
 - A.4 Flexibility
 - A.5 Body Composition
- B. Training Principles
 - B.1 Overload Principle

- B.2 Specificity Principle
- B.3 Progression Principle
- B.4 Reversibility Principle
- C. Monitoring Exercise Intensity
 - C.1 Metabolic Method
 - C.2 Heart Rate Method
 - C.3 Counting Heart Rate
 - C.4 Target Heart Rate Ranges
 - C.5 Resting Heart Rate
 - C.6 Maximal Heart Rate
 - C.7 Maximal Target Heart Rate Formula
 - C.8 Karvonen or Heart Rate Reserve Target Heart Rate Formula
 - C.9 Recovery Heart Rate
 - C.10 Perceived Exertion
 - C.11 Rate of Perceived Exertion
 - C.12 Dyspnea Scale and Talk Test
- D. Physical Activity and Fitness
 - D.1 Guidelines to Improve Fitness
 - D.2 CRE Training
 - D.3 Resistance Training
 - D.4 Flexibility Training
- E. Physical Activity and Health
 - E.1 Guidelines to Improve Overall Health

Chapter 18 - Weight Management

- A. Guidelines for Safe Weight Loss
- B. Fad Diets
- C. Exercise Programming for Safe Weight Loss
- D. Calculating Goal Weight
- E. National Weight Control Registry

Chapter 19 - Flexibility

- A. Benefits of Stretching
- B. Stretching Guidelines
- C. Types of Flexibility Exercises
- D. Common Flexibility Exercises

Chapter 20 - Resistance Training

- A. Benefits of Resistance Training
- B. Types of Resistance Training
- C. Resistance Training Guidelines
- D. Common Exercises
- E. Resistance Training Program Design

Chapter 21 - Cardiorespiratory Endurance (CRE)

- A. Warm-Up
- B. Guidelines for CRE Training
- C. Interval Training
- D. Cool-Down

Chapter 22 - Special Populations

- A. Pre- and Post-Natal
- B. Mature Adults
- C. Children