

Sports Medicine II

7662 36 weeks / 280 hours

8317 36 weeks / 140 hours

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Acknowledgments

The components of this instructional framework were developed by the following business panelists:

Eddie Benion, Assistant Athletic Director for Sports Medicine, Virginia Commonwealth University, Richmond

Amanda Caswell, Director, Athletic Training Program, George Mason University, Fairfax
Hannah Jaussen, Assistant Athletic Trainer, Virginia Commonwealth University, Richmond
Doug Minnix, Dean of the College of Science, Bluefield College, Bluefield
Chris Robinson, Assistant Director, Virginia High School League, Charlottesville
Kathy Thomas, Associate Professor, Norfolk State University, Norfolk
Donna Wolf, Associate Professor, Norfolk State University, Norfolk

The following educators served on the curriculum development panel:

Melissa Black, Goochland High School, Goochland County Public Schools
Katherine Doctor, Monacan High School, Chesterfield County Public Schools
Abigail Hansberger, Strasburg High School, Shenandoah County Public Schools
Bethann Jones, Lee-Davis High School, Hanover County Public Schools
Krystal Randolph, Richmond Technical Center, Richmond City Public Schools
Carrie Reynolds, Health, Physical Education, and Driver Education Specialist, Fairfax County Public Schools
John Reynolds, Athletic Training Program Administrator, Fairfax County Public Schools
Jessica Shanks, Forest Park High School, Prince William County Schools

Tasks/competencies related to opioids were developed by:

David E. Brown, DC, Director, Virginia Department of Health Professions, Henrico
Linda S. Mintle, PhD, Chair, Division of Behavioral Health, College of Osteopathic Medicine, Liberty University, Lynchburg
A. Omar Abubaker, DMD, PhD, Professor and Chair, Department of Oral and Maxillofacial Surgery, Virginia Commonwealth University, Richmond

Correlations to the Virginia Standards of Learning were reviewed and updated by:

Leslie Bowers, English Teacher (ret.), Newport News Public Schools
Vickie L. Inge, Mathematics Committee Member, Virginia Mathematics and Science Coalition
Anne F. Markwith, New Teacher Mentor (Science), Gloucester County Public Schools
Cathy Nichols-Cocke, PhD, Social Studies Teacher, Fairfax High School, Fairfax County Public Schools

The framework was edited and produced by the CTE Resource Center:

Averill P. Byrd, Writer/Editor
Kevin P. Reilly, Administrative Coordinator

Michele Green-Wright, Specialist, Health and Medical Sciences and Related Clusters
Office of Career, Technical, and Adult Education
Virginia Department of Education

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Course Description

Suggested Grade Level: 12

Prerequisites: 7660 or 8316

Upon successful completion of this course, students will be eligible to take the National Academy of Sports Medicine-Certified Personal Trainer (NASM-CPT) exam. This course builds upon basic knowledge acquired in Sports Medicine I on topics such as exercise physiology, biomechanics, exercise program design, and injury prevention, assessment, treatment, and management. Students prepare for a career in sports medicine, including completing an internship.

Task Essentials Table

- by plus icons (⊕) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (○) are optional
- Tasks/competencies designated by minus icons (⊖) are omitted
- Tasks marked with an asterisk (*) are sensitive.

7662	8317	Tasks/Competencies
Understanding Exercise Physiology		
⊕	⊕	Identify the components of fitness.
⊕	⊕	Explain the metabolic energy systems.
⊕	⊕	Explain various methods to analyze body composition.
⊕	⊕	Perform body composition analysis using a variety of methods, including anthropometric measurements.
⊕	⊕	Assess vital signs.
⊕	⊕	Differentiate between acute and chronic adaptations to exercise.
⊕	⊕	Explain the body's response to exercise throughout the lifespan.
Application of Biomechanical Principles		
⊕	⊕	Explain lever systems associated with the human body.
⊕	⊕	Demonstrate movement in the planes of motion and related to the axes of human movement.
⊕	⊕	Explain how force, mass, and gravity relate to human body mechanics.
Exploring Exercise Program Design		

7662	8317	Tasks/Competencies
+	+	Describe acute training variables and phases within exercise program design.
+	+	Explain the health-related fitness factors.
+	+	Design programs for each phase of training.
Preventing Injuries		
+	+	Describe the relationship between pre-existing conditions and injury prevention.
+	+	Explain the criteria used to determine readiness to participate in physical activities.
+	+	Perform a fitness assessment.
+	+	Demonstrate safe exercise progression for healthy individuals, explaining when progression is appropriate.
+	+	Explain safe training principles to include frequency, intensity, duration, and mode.
+	+	Apply the principles of strength training to various case study scenarios.
+	+	Explain safe techniques to enhance strength of major muscle groups.
+	+	Demonstrate safe lifting and spotting techniques as it relates to strengthening.
+	+	Develop a safe strengthening program for healthy individuals.
+	+	Explain the basic principles and importance of flexibility training.
+	+	Explain safe techniques to enhance joint range of motion of major muscle groups.
+	+	Develop a safe flexibility program for healthy individuals.
+	+	Explain the basic principles and importance of proprioception.
+	+	Demonstrate safe techniques to enhance proprioception for self and others, explaining each technique.
+	+	Implement a safe proprioception program for healthy individuals, assessing for effectiveness over time.
+	+	Identify environmental factors related to injury prevention.
+	+	Identify procedures for reporting potential environmental hazards to appropriate personnel.
+	+	Identify factors related to equipment safety.
+	+	Identify procedures for reporting potential equipment safety hazards to appropriate personnel.
Assessing Injuries and Illnesses		
+	+	Explain the role of the secondary school student aide (SA) in recognizing an injury.
+	+	Explain the scope and limitations of the secondary school student aide (SA) when providing first aid.
+	+	Explain the scope and limitations of the secondary school student aide (SA) when assessing injury/illness.
Treating and Managing Injuries and Conditions		
+	+	Explain the purpose of goal setting in the treatment of injuries.
+	+	Manage an injury within the scope of first aid.

7662	8317	Tasks/Competencies
+	+	Explain factors to consider in creating a progressive return-to-activity programs following injury/illness.
+	+	Identify appropriate referral sources based on scope of practice of healthcare professionals.
+	+	Explain the theory and application of common therapeutic interventions to treat and manage injuries and conditions based on professional scope of practice.
Preparing for a Career		
+	+	Research various sports medicine-related professions.
+	+	Draft a résumé reflecting the student's career objective.
+	+	Practice interviewing skills.
+	+	Explain the basic legalities related to employment hiring practices in the sports medicine field.
+	+	Explain the relationship between ethics and employment skills.
+	+	Complete an internship in a sports medicine-related field.
+	+	Describe educational opportunities for advancement in various sports medicine professions.
+	+	Describe the impact of technology in various fields of sports medicine.
+	+	Explain the NASM-CPT credential.
Describing the Opioid Crisis		
+	+	Describe the history and current state of the opioid crisis in the United States.
+	+	Describe the history and current state of the opioid crisis in Virginia.
+	+	Define the pharmacological components and common uses of opioids.
Examining the Key Factors of Drug Addiction		
+	+	Examine the science of addiction.
+	+	Explain prevention and early intervention strategies.
+	+	Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).
+	+	Describe the treatment models of addiction therapy.
+	+	Describe the medication management antidote used to prevent fatal opioid overdoses.
Understanding Pain Management Protocols		
+	+	Explain the science of physiological and mental pain.
+	+	Describe the diagnostic tools used in developing pain management plans.
+	+	Describe pain treatment options available to various populations of patients.
+	+	Describe the effects of opioid dependency on the human body systems.
+	+	Explain the mechanism and physical effects of opioids on the human body.
+	+	Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.
+	+	Describe the withdrawal and tapering side effects of opioid use.
+	+	Describe storage and disposal options for opioids.
+	+	Explain community resources for education about opioid use.
Working with Patients and Caregivers		
+	+	Describe key communication topics involving opioids for patients.

7662	8317	Tasks/Competencies
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Describe communication topics for caregivers and family members.

Legend: Essential Non-essential Omitted

Curriculum Framework

Understanding Exercise Physiology

Task Number 39

Identify the components of fitness.

Definition

Identification should include the roles of muscular strength, muscular endurance, flexibility, nutrition, and aerobic capacity in fitness and the effects of changes in each of these components on fitness.

Process/Skill Questions

- What is the definition of fitness pertaining to muscular endurance and physical activity?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
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Health Professions Events

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Appendix E

- Review fitness assessment considerations.

- Review concepts for program design.
- Describe hydration concepts.
- Identify fitness technologies and trends.
- Describe behavior change strategies for client results.
- Describe exam taking best practices and preparation.

Chapter 4 Exercise Metabolism and Bioenergetics

- Describe the primary methods of how the body produces energy for exercise.
- Differentiate between aerobic and anaerobic metabolism.
- Distinguish which energy pathways predominate for various intensities and durations of exercise.
- Understand the interaction of carbohydrate, fat, and protein as fuels for exercise.
- State the differences in the energy use during steady state and exhaustive exercise.
- Discriminate between the energy requirements of steady state versus intermittent exercise.
- Describe basic training-induced adaptations in energy production.

Chapter 6 Fitness Assessment

- Explain the components of and rationale for an integrated fitness assessment.
- Understand how to administer a health history questionnaire and then from that be able to stratify a client's overall risk for fitness assessment.
- Understand the importance of posture, how it relates to movement observation, and how to assess it.
- Understand how to perform a comprehensive health-related fitness assessment, obtain subjective and objective information about clients, and how to use the information collected to help design an exercise program.

Task Number 40

Explain the metabolic energy systems.

Definition

Explanation should include how the body produces energy for exercise using carbohydrates, fats and proteins and the difference between aerobic and anaerobic metabolic pathways.

Process/Skill Questions

- What are the energy systems of the body?

- How does energy become available as work demands on the body change?
- What are exercise, metabolism, and bioenergetics?
- What is an aerobic system of obtaining energy?
- What is VO₂ max? How is VO₂ max measured?
- What is an anaerobic system of obtaining energy?
- What are glycolysis and adenosine triphosphate-phosphocreatine (ATP-PCR) system? How do glycolysis and the ATP-PCR system work?

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Chapter 3 The Cardiorespiratory System

- Describe the structure and function of the cardiovascular and respiratory systems.
- Explain how each of these systems relates to human movement.
- Describe how the cardiovascular and respiratory systems work in unison.
- Explain the influence that dysfunctional breathing can have on the human movement system.

Chapter 4 Exercise Metabolism and Bioenergetics

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- Differentiate between aerobic and anaerobic metabolism.
- Distinguish which energy pathways predominate for various intensities and durations of exercise.
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- Describe basic training-induced adaptations in energy production.

Chapter 8 Cardiorespiratory Fitness Training

- Define and describe the components associated with cardiorespiratory training.
 - Describe how various physiologic systems respond and adapt to cardiorespiratory training.
 - Describe the health-related benefits associated with cardiorespiratory fitness.
 - Describe current guidelines and recommendations for prescribing safe and effective cardiorespiratory exercise to apparently healthy individuals.
 - Describe how to design and implement cardiorespiratory training programs to a variety of clients using an individualized approach.
 - Instruct clients on how to perform safe and effective cardiorespiratory exercise.
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Task Number 41

Explain various methods to analyze body composition.

Definition

Explanation should include a description of various methods such as skin-fold calipers, circumference measurements, body mass index (BMI), bioimpedance analysis (BIA), and hydrostatic weighing test, along with an evaluation of the reliability and validity of each method.

Process/Skill Questions

- What is body composition?
- What is considered to be normal percent body fat?
- What are the classifications of body mass index?
- What are skin-fold calipers? How do skin-fold calipers measure body fat?
- What is bioimpedance analysis? How does bioimpedance measure body fat?
- What is hydrostatic testing? How does hydrostatic testing measure body fat?
- What components are important in considering appropriate methods to use in various situations?
- What is the difference between reliability and validity?
- What is the most reliable method of measuring body composition?
- What is the most valid method of measuring body composition?

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Chapter 6 Fitness Assessment

- Explain the components of and rationale for an integrated fitness assessment.
 - Understand how to administer a health history questionnaire and then from that be able to stratify a client's overall risk for fitness assessment.
 - Understand the importance of posture, how it relates to movement observation, and how to assess it.
 - Understand how to perform a comprehensive health-related fitness assessment, obtain subjective and objective information about clients, and how to use the information collected to help design an exercise program.
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Task Number 42

Perform body composition analysis using a variety of methods, including anthropometric measurements.

Definition

Performance should include describing and following the steps for each method of body composition analysis (e.g., skin-fold, circumference, BIA, hydrostatic, BMI).

Process/Skill Questions

- What are the steps in taking body composition using skin-fold calipers?
- What are the steps in analyzing body composition using circumference?
- What are the steps in analyzing body composition using BIA?
- What are the steps in analyzing body composition using hydrostatic weighing test?
- What are anthropometric measurements? How are anthropometric measurements taken?
- What is BMI?
- What is lean body mass?
- How can body weight be related to fat and lean mass percentages?
- How can lean mass weight and fat weight be determined for an individual?
- How can body composition analysis be interpreted for an individual?

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Task Number 43

Assess vital signs.

Definition

Assessment should include measuring heart rate, blood pressure, respirations, and body temperature.

Process/Skill Questions

- What are vital signs? Why are they important?
- What is heart rate? What are the steps required in measuring heart rate? What are appropriate methods of measuring heart rate? Why is measuring heart rate important? When are appropriate times to measure heart rate?
- What is blood pressure? What are the steps required in measuring blood pressure? What are appropriate methods of measuring blood pressure? What are alternative methods of measuring blood pressure? Why is measuring blood pressure important? When are appropriate times to measure blood pressure?
- What are respirations? What are the steps required in measuring respirations? What are appropriate methods of measuring respirations? Why is measuring respirations important?

- What is body temperature? What are the appropriate methods of assessing body temperature? What are the steps required in the various methods of measuring body temperature? Why is obtaining body temperature important?

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- Understand how to perform a comprehensive health-related fitness assessment, obtain subjective and objective information about clients, and how to use the information collected to help design an exercise program.

Task Number 44

Differentiate between acute and chronic adaptations to exercise.

Definition

Differentiation should include the specifics of each individual adaptation to exercise, both acute and chronic, and draw distinctions between the two.

Process/Skill Questions

- What are acute adaptations to exercise?
- What are chronic adaptations to exercise?
- How are acute and chronic adaptations achieved?

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Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 8 Cardiorespiratory Fitness Training

- Define and describe the components associated with cardiorespiratory training.
- Describe how various physiologic systems respond and adapt to cardiorespiratory training.
- Describe the health-related benefits associated with cardiorespiratory fitness.
- Describe current guidelines and recommendations for prescribing safe and effective cardiorespiratory exercise to apparently healthy individuals.
- Describe how to design and implement cardiorespiratory training programs to a variety of clients using an individualized approach.
- Instruct clients on how to perform safe and effective cardiorespiratory exercise.

Task Number 45

Explain the body's response to exercise throughout the lifespan.

Definition

Explanation should include the human body's response to exercise in each of the stages of life (i.e., child, adult, elderly).

Process/Skill Questions

- What are the stages of life?
- How does exercise over a lifespan affect the human body? How does exercise over a lifespan affect a male? How does exercise over a lifespan affect a female?
- How have changes in equipment over time varied the body's response to exercise?
- How have changes in rules of activities over time varied the body's response to exercise?
- How have the changes in the role of exercise in an active person's life varied the body's response to exercise?

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Chapter 16 Chronic Health Conditions and Physical or Functional Limitations

- Define and describe the cause and symptoms of selected chronic health conditions.
- Describe the characteristics of selected health and age-related physical and functional limitations to exercise.
- Recognize how the conditions discussed in this chapter affect exercise training variables within the OPT™ model.
- Recognize how acute and chronic responses to exercise vary in clients with chronic health conditions or physical or functional limitations compared with apparently healthy clients.

- Describe how to modify program design for clients with chronic health and physical or functional limitations.

Chapter 19 Lifestyle Modification and Behavioral Coaching

- Describe the characteristics of a positive client experience.
- Understand the stages of change model.
- Describe characteristics of what effective communication skills are.
- Describe the elements of effective SMART goal-setting techniques.

Application of Biomechanical Principles

Task Number 46

Explain lever systems associated with the human body.

Definition

Explanation includes

- description of the three classes of lever systems
- the components and functions of each system
- examples of motions that occur in the human body as a result of each type of lever system

Process/Skill Questions

- How do lever systems complete anatomical body function?
- What are the main systemic body functions levers provide for in the human body?
- What are the anatomical and physiological effects of levers in providing muscular movement?

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Chapter 11 Plyometric (Reactive) Training Concepts

- Define plyometric (reactive) training and describe its uses.
- Discuss the importance of plyometric training.
- Design a plyometric training program for clients at various levels of fitness.
- Perform and instruct various plyometric training exercises.

Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 10 Balance Training Concepts

- Define balance and describe its role in performance and injury risk.
- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

Chapter 5 Human Movement Science

- Explain the concept of functional multiplanar biomechanics including basic biomechanical terminology.
- Describe how muscle actions and outside forces relate to human movement.
- Explain the concepts of motor learning and motor control as they relate to exercise training.

Chapter 8 Cardiorespiratory Fitness Training

- Define and describe the components associated with cardiorespiratory training.
- Describe how various physiologic systems respond and adapt to cardiorespiratory training.
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- Describe current guidelines and recommendations for prescribing safe and effective cardiorespiratory exercise to apparently healthy individuals.

- Describe how to design and implement cardiorespiratory training programs to a variety of clients using an individualized approach.
- Instruct clients on how to perform safe and effective cardiorespiratory exercise.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
 - Differentiate between the stabilization system and the movement system.
 - Discuss the importance of core training.
 - Design a core training program for clients at any level of training.
 - Perform, describe, and instruct various core training exercises.
-

Task Number 47

Demonstrate movement in the planes of motion and related to the axes of human movement.

Definition

Demonstration should include

- frontal, transverse, and sagittal planes of motion
- motions that occur in each plane

Process/Skill Questions

- What are the three planes associated with human movement?
- What are anatomical positions related to each plane?
- What are the motions that occur in each joint along each plane?
- What is the relationship between the planes and the axes of motion?
- Why is it important to understand what plane each joint moves in?

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- Understand the importance of the core musculature.
 - Differentiate between the stabilization system and the movement system.
 - Discuss the importance of core training.
 - Design a core training program for clients at any level of training.
 - Perform, describe, and instruct various core training exercises.
-

Task Number 48

Explain how force, mass, and gravity relate to human body mechanics.

Definition

Explanation should include

- definitions of *force*, *mass*, and *gravity*
- how each of these components is related to human body mechanics
- how human body mechanics relate to Newton's Laws of Motion.

Process/Skill Questions

- How does force relate to human body mechanics?
- What are the different forces that act upon the human body?
- How does mass relate to human body mechanics?
- What is center of gravity?
- What are Newton's Laws of Motion? How do they apply to human body mechanics?

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Health Science Events

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- Medical Terminology

Health Professions Events

- Sports Medicine

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Chapter 5 Human Movement Science

- Explain the concept of functional multiplanar biomechanics including basic biomechanical terminology.
 - Describe how muscle actions and outside forces relate to human movement.
 - Explain the concepts of motor learning and motor control as they relate to exercise training.
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Exploring Exercise Program Design

Task Number 49

Describe acute training variables and phases within exercise program design.

Definition

Description should include variables and phases in exercise program designs (periodization) such as the Optimum Performance Training (OPT) model.

For an example of exercise progression models, see [OPT templates under NASM resources](#).

Process/Skill Questions

- What are the acute training variables found within the OPT model?
- What is the primary goal of each phase of the OPT model?
- What are the phases of an exercise program (e.g., five phases of the OPT model)?
- Why does the OPT model begin with the stabilization phase rather than the hypertrophy phase?
- What is periodization?
- What is progression?
- How do you choose an exercise program for a client?

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Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 1 The Scientific Rationale for Integrated Thinking

- Explain the history of the profession of personal training.
- Identify common characteristics of personal training clients.
- Demonstrate an understanding of the principles of integrated exercise program design.
- Describe the Optimum Performance Training (OPT™) model.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Task Number 50

Explain the health-related fitness factors.

Definition

Explanation should include

- cardiorespiratory fitness
- balance training and coordination
- muscular fitness
- body composition
- flexibility.

Process/Skill Questions

- Which of the of the health-related fitness factors is strongly related to a decreased risk of cardiovascular disease and all-cause mortality as well as a reduction in risk for morbidity and mortality for some types of cancer?
- What is the difference between health-related fitness and motor fitness?

- How do the health benefits differ for cardiovascular/aerobic exercise and muscular fitness?
- What are different types of flexibility? Why are they important?
- What are the benefits of cardiorespiratory fitness? What are the phases of cardiorespiratory training?
- What is the difference between balance & dynamic balance? What are some of the parameters for designing a balance training program?

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Chapter 11 Plyometric (Reactive) Training Concepts

- Define plyometric (reactive) training and describe its uses.
- Discuss the importance of plyometric training.
- Design a plyometric training program for clients at various levels of fitness.
- Perform and instruct various plyometric training exercises.

Chapter 12 Speed, Agility, and Quickness Training

- Define and describe speed, agility, and quickness training and its purpose.
- Discuss the importance of speed, agility, and quickness training for a variety of populations.
- Design a speed, agility, and quickness training program for clients at any level of training.
- Perform, describe, and instruct various speed, agility, and quickness training exercises.

Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 10 Balance Training Concepts

- Define balance and describe its role in performance and injury risk.
- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Chapter 7 Flexibility Training Concepts

- Explain the effects of muscle imbalances on the human movement system (kinetic chain).
- Provide a scientific rationale for the use of an integrated flexibility training program.
- Differentiate between the various types of flexibility techniques.
- Perform and instruct appropriate flexibility techniques for given situations.

Chapter 8 Cardiorespiratory Fitness Training

- Define and describe the components associated with cardiorespiratory training.
- Describe how various physiologic systems respond and adapt to cardiorespiratory training.
- Describe the health-related benefits associated with cardiorespiratory fitness.
- Describe current guidelines and recommendations for prescribing safe and effective cardiorespiratory exercise to apparently healthy individuals.
- Describe how to design and implement cardiorespiratory training programs to a variety of clients using an individualized approach.
- Instruct clients on how to perform safe and effective cardiorespiratory exercise.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.
- Perform, describe, and instruct various core training exercises.

Task Number 51

Design programs for each phase of training.

Definition

Design should include

- stabilization
- muscular endurance
- hypertrophy
- maximal strength
- power.

Process/Skill Questions

- How do the acute training variables differ with respect to each of the phases?
- What is the relative percent intensity for a client beginning the stabilization phase, the strength endurance phase, and the hypertrophy phase?
- What are specific exercises for each phase of the exercise program?
- How can you modify specific exercises for progression or regression of the exercise program?

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Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Preventing Injuries

Task Number 52

Describe the relationship between pre-existing conditions and injury prevention.

Definition

Description should reflect the importance of taking a history, asking appropriate questions to determine pre-existing conditions, and documenting data. It should also describe how pre-

existing conditions can lead to injuries and how knowledge of preexisting conditions can help prevent injuries.

Process/Skill Questions

- What common pre-existing conditions can contribute to sports-related injuries?
- Does having a pre-existing injury mean that a person is unable to engage in sports? Why or why not?
- What questionnaires are available to assess pre-existing conditions? [e.g., [Physical Activity Readiness Questionnaire](#) (PAR-Q)]
- What are some relevant questions to ask when taking a thorough history?

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Chapter 16 Chronic Health Conditions and Physical or Functional Limitations

- Define and describe the cause and symptoms of selected chronic health conditions.
- Describe the characteristics of selected health and age-related physical and functional limitations to exercise.
- Recognize how the conditions discussed in this chapter affect exercise training variables within the OPT™ model.
- Recognize how acute and chronic responses to exercise vary in clients with chronic health conditions or physical or functional limitations compared with apparently healthy clients.
- Describe how to modify program design for clients with chronic health and physical or functional limitations.

Chapter 2 Basic Exercise Science

- Define the components of the human movement system (kinetic chain).
- Explain the basic structure and function of
 - the nervous system
 - the skeletal system
 - the muscular system

- the endocrine system.
- Describe how these systems respond and adapt to exercise.

Chapter 3 The Cardiorespiratory System

- Describe the structure and function of the cardiovascular and respiratory systems.
 - Explain how each of these systems relates to human movement.
 - Describe how the cardiovascular and respiratory systems work in unison.
 - Explain the influence that dysfunctional breathing can have on the human movement system.
-

Task Number 53

Explain the criteria used to determine readiness to participate in physical activities.

Definition

Explanation should include information used in identifying conditions that may predispose to injury, such as

- medical history
- pre-participation physical examination
- baseline concussion assessment
- mental health screening
- assessment of activity-specific function.

Process/Skill Questions

- What medical history issues should be noted? (e.g., asthma, allergies, sickle cell, cardiac, etc.)
- What specific forms are required to try out for a sport on VA?
- What should be included in a pre-participation exam?
- What conditions would disqualify an individual from participating in physical activity?
- Who is qualified to perform a pre-participation physical?

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Chapter 6 Fitness Assessment

- Explain the components of and rationale for an integrated fitness assessment.
 - Understand how to administer a health history questionnaire and then from that be able to stratify a client's overall risk for fitness assessment.
 - Understand the importance of posture, how it relates to movement observation, and how to assess it.
 - Understand how to perform a comprehensive health-related fitness assessment, obtain subjective and objective information about clients, and how to use the information collected to help design an exercise program.
-

Task Number 54

Perform a fitness assessment.

Definition

Performance should include an explanation of the purpose and components of a fitness assessment. Components of a fitness assessment should include, but not be limited to

- height and weight
- body mass index (BMI)
- body composition
- vital signs
- aerobic capacity
- flexibility
- muscular strength and endurance.

Process/Skill Questions

- What steps should precede a fitness assessment in order to prevent injury and avoid exacerbation of illness or condition? (e.g., taking medical history, getting doctor's permission)
- What is the purpose of a fitness assessment?
- What are the components of a fitness assessment?

- What are the normative values for anthropometrics and vital signs?
- What is aerobic capacity? How is it interpreted?
- How can the results of a fitness assessment influence be used?

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Appendix E

- Review fitness assessment considerations.
- Review concepts for program design.
- Describe hydration concepts.
- Identify fitness technologies and trends.
- Describe behavior change strategies for client results.
- Describe exam taking best practices and preparation.

Chapter 6 Fitness Assessment

- Explain the components of and rationale for an integrated fitness assessment.
- Understand how to administer a health history questionnaire and then from that be able to stratify a client's overall risk for fitness assessment.
- Understand the importance of posture, how it relates to movement observation, and how to assess it.
- Understand how to perform a comprehensive health-related fitness assessment, obtain subjective and objective information about clients, and how to use the information collected to help design an exercise program.

Task Number 55

Demonstrate safe exercise progression for healthy individuals, explaining when progression is appropriate.

Definition

Demonstration should reflect information collected in the medical history, pre-participation physical examination, and the fitness assessment and incorporate the following:

- Determining performance and health goals
- Determining safe and appropriate exercise
- Implementing safe and appropriate exercise program
- Conducting periodic reassessment
- Making adjustments accordingly

Process/Skill Questions

- What is exercise progression?
- How is the current level of physical ability assessed?
- How should goals be interpreted and incorporated into planning an exercise?
- When should reassessment occur? How is reassessment used to adjust an exercise program?

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Chapter 11 Plyometric (Reactive) Training Concepts

- Define plyometric (reactive) training and describe its uses.
- Discuss the importance of plyometric training.
- Design a plyometric training program for clients at various levels of fitness.
- Perform and instruct various plyometric training exercises.

Chapter 12 Speed, Agility, and Quickness Training

- Define and describe speed, agility, and quickness training and its purpose.

- Discuss the importance of speed, agility, and quickness training for a variety of populations.
- Design a speed, agility, and quickness training program for clients at any level of training.
- Perform, describe, and instruct various speed, agility, and quickness training exercises.

Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 10 Balance Training Concepts

- Define balance and describe its role in performance and injury risk.
- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Chapter 7 Flexibility Training Concepts

- Explain the effects of muscle imbalances on the human movement system (kinetic chain).
- Provide a scientific rationale for the use of an integrated flexibility training program.
- Differentiate between the various types of flexibility techniques.
- Perform and instruct appropriate flexibility techniques for given situations.

Chapter 8 Cardiorespiratory Fitness Training

- Define and describe the components associated with cardiorespiratory training.

- Describe how various physiologic systems respond and adapt to cardiorespiratory training.
- Describe the health-related benefits associated with cardiorespiratory fitness.
- Describe current guidelines and recommendations for prescribing safe and effective cardiorespiratory exercise to apparently healthy individuals.
- Describe how to design and implement cardiorespiratory training programs to a variety of clients using an individualized approach.
- Instruct clients on how to perform safe and effective cardiorespiratory exercise.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.
- Perform, describe, and instruct various core training exercises.

Task Number 56

Explain safe training principles to include frequency, intensity, duration, and mode.

Definition

Explanation should include a definition of *frequency, intensity, time, type, and enjoyment (FITTE)* and explain the relationship among these five concepts. It should also address what constitutes safety and appropriateness for each concept:

- Frequency--Allow for adequate physiological recovery time
- Intensity--Ensure adequate duration to accomplish the goal without premature failure or to improve aerobic or anaerobic energy systems
- Time--Perform the task to match the goal or to avoid premature failure or to see gains
- Type--Ensure that exercise choice is appropriate for accomplishing the goal (mode of exercise)
- Enjoyment--Attain pleasure from exercising

Process/Skill Questions

- What is the relationship among frequency, intensity, duration, and mode?
- What is a practical measure of each concept in a given situation?
- What are examples of different levels of intensity? What goals would each level be trying to achieve?

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Chapter 15 Introduction to Exercise Modalities

- Define and describe the safe and effective use of selected exercise training methods, including various forms of resistance and proprioceptive modalities.
- Describe how these exercise training modalities can safely and effectively be incorporated into a training program for a variety of clients.
- Describe how these exercise training modalities can be systematically used within the Optimum Performance Training (OPT™) Model.

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- Instruct clients on how to perform safe and effective cardiorespiratory exercise.

Task Number 57

Apply the principles of strength training to various case study scenarios.

Definition

Application should include demonstrating the principles of specificity, overload, frequency, duration, and reversibility, as related to muscle strength, power, and cardiorespiratory fitness.

Process/Skill Questions

- What is the process by which an individual gains strength?
- What are the consequences of changing the parameters of a strength training program?
- What is the role of sound strength training practices in injury prevention?
- What can be the results of improper strength training practices?

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Chapter 13 Resistance Training Concepts

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- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Task Number 58

Explain safe techniques to enhance strength of major muscle groups.

Definition

Explanation should include

- the relationship between strength and injury prevention
- techniques to increase strength, power, and endurance, using a variety of equipment and reflecting age, sport/activity, gender, and other individual considerations.

Process/Skill Questions

- Why are proper lifting and spotting techniques important in injury prevention?
- What are the differences between isometric, isotonic, and isokinetic strengthening exercises? How could each be used in an injury prevention program?
- What types of equipment are used to enhance strength?
- How can strength be enhanced in situations with little or no traditional equipment?
- How do age, sport/activity, gender, and other individual considerations factor in the development of a strength training program?
- What is the SAID principle? How does it apply to strength training and injury prevention?
- What is the difference between agonist and antagonist?
- What is the difference between concentric and eccentric contractions?

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Chapter 13 Resistance Training Concepts

- Describe the stages of the general adaptation syndrome.
- Define and describe the principle of adaptation and specificity.
- Define stability, muscular endurance, muscular hypertrophy, strength, and power.
- List and define the various stages of strength and training systems.

Chapter 15 Introduction to Exercise Modalities

- Define and describe the safe and effective use of selected exercise training methods, including various forms of resistance and proprioceptive modalities.
- Describe how these exercise training modalities can safely and effectively be incorporated into a training program for a variety of clients.
- Describe how these exercise training modalities can be systematically used within the Optimum Performance Training (OPT™) Model.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.
- Perform, describe, and instruct various core training exercises.

Task Number 59

Demonstrate safe lifting and spotting techniques as it relates to strengthening.

Definition

Demonstration should include, but is not limited to

- free weights

- core stabilization
- Olympic lifting.

Process/Skill Questions

- What is core stabilization?
- What lifts are considered Olympic lifts?
- What implements can be utilized as free weights? (dumbbells, kettlebells, medicine balls)
- What are the specific steps/stages of each lift?
- How is appropriate spotting determined?
- How is appropriate lifting technique determined?
- What are key elements of safe and appropriate lifting techniques? Spotting techniques?
- What are the safety concerns when performing barbell exercises vs. dumbbell exercises?
- What are some common errors that could lead to injury while performing squats?
- What are proper breathing techniques for individuals to conduct while performing exercises?
- How is using full range of motion beneficial from a safety perspective?

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Chapter 11 Plyometric (Reactive) Training Concepts

- Define plyometric (reactive) training and describe its uses.
- Discuss the importance of plyometric training.
- Design a plyometric training program for clients at various levels of fitness.
- Perform and instruct various plyometric training exercises.

Chapter 10 Balance Training Concepts

- Define balance and describe its role in performance and injury risk.
- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.
- Perform, describe, and instruct various core training exercises.

Task Number 60

Develop a safe strengthening program for healthy individuals.

Definition

Development should reflect appropriate safety precautions and an understanding of age, sport/activity, gender, overall condition and individual considerations. The strengthening program should include the following steps:

- Assess current status.
- Establish goals.
- Develop a beginning exercise program.
- Instruct in safe and appropriate technique.
- Initiate progressive program.
- Assess and modify program over time.

Process/Skill Questions

- How is current strength status assessed?
- What are the different types of strengthening goals?
- How are appropriate strengthening goals determined for an individual?
- What are the criteria for progression?
- When is it appropriate/necessary to establish new goals?

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Appendix E

- Review fitness assessment considerations.
- Review concepts for program design.
- Describe hydration concepts.
- Identify fitness technologies and trends.
- Describe behavior change strategies for client results.
- Describe exam taking best practices and preparation.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Task Number 61

Explain the basic principles and importance of flexibility training.

Definition

Explanation should include the principles of static stretching, ballistic stretching, and proprioceptive neuromuscular facilitation (PNF). It should include considerations of intensity, duration, and frequency. It should also address the differences between elastic and plastic deformation. It should include the concept that flexibility is important because it increases joint range of motion, facilitates reflex inhibition, and enhances the performance of activities of daily living.

Process/Skill Questions

- What is static stretching? How is it performed? Why is it important?
- What is ballistic stretching? How is it performed? Why is it important?
- What is PNF stretching? How does PNF take advantage of muscular contraction and relaxation? Of agonist and antagonist relationships? Why is PNF stretching important?
- What is the difference between flexibility and range of motion?
- What is dynamic stretching? When is it more appropriate than static stretching?

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Chapter 7 Flexibility Training Concepts

- Explain the effects of muscle imbalances on the human movement system (kinetic chain).
- Provide a scientific rationale for the use of an integrated flexibility training program.
- Differentiate between the various types of flexibility techniques.
- Perform and instruct appropriate flexibility techniques for given situations.

Task Number 62

Explain safe techniques to enhance joint range of motion of major muscle groups.

Definition

Explanation should include safe stretching techniques appropriate to the targeted muscle groups. It should include techniques to increase joint range of motion, using a variety of equipment and techniques reflecting age, sport/activity, gender, and other individual considerations. An explanation should accompany each demonstrated technique.

Process/Skill Questions

- What are key elements of safe and appropriate stretching techniques?
- Why are proper stretching techniques important in injury prevention?
- How do static, ballistic, dynamic, and PNF stretching differ? How could each be used in an injury prevention program?
- What types of equipment are used to enhance joint range of motion?
- How is joint range of motion measured?

- How can flexibility be enhanced in situations with little or no traditional equipment?
- How do age, sport/activity, gender, and other individual considerations factor in the development of a flexibility program?
- What is the relationship between the agonist and antagonist in joint range of motion?

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Chapter 7 Flexibility Training Concepts

- Explain the effects of muscle imbalances on the human movement system (kinetic chain).
- Provide a scientific rationale for the use of an integrated flexibility training program.
- Differentiate between the various types of flexibility techniques.
- Perform and instruct appropriate flexibility techniques for given situations.

Task Number 63

Develop a safe flexibility program for healthy individuals.

Definition

Development should reflect appropriate safety precautions and an understanding of age, sport/activity, gender, overall condition, and individual considerations. The flexibility program should include the following steps:

- Assess current status.
- Establish goals.
- Develop a beginning exercise program.
- Instruct in safe and appropriate technique.
- Initiate progressive program.
- Assess and modify program over time.

Process/Skill Questions

- How is current flexibility status assessed?
- What are the different types of flexibility goals?
- How are appropriate flexibility goals determined for an individual?
- What are the criteria for progression?
- When is it appropriate/necessary to establish new goals?

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Chapter 7 Flexibility Training Concepts

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- Differentiate between the various types of flexibility techniques.
- Perform and instruct appropriate flexibility techniques for given situations.

Task Number 64

Explain the basic principles and importance of proprioception.

Definition

Explanation should include a description of the importance of balance and kinesthetic awareness in proprioception. It should also include the role of proprioception in injury/reinjury prevention.

Process/Skill Questions

- What is balance?
- What sensory information affects balance? What other conditions affect balance?
- What is kinesthetic awareness?
- What is proprioception?
- How is proprioception affected by the senses?
- How does proprioception help prevent injury/reinjury?

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Chapter 15 Introduction to Exercise Modalities

- Define and describe the safe and effective use of selected exercise training methods, including various forms of resistance and proprioceptive modalities.
- Describe how these exercise training modalities can safely and effectively be incorporated into a training program for a variety of clients.
- Describe how these exercise training modalities can be systematically used within the Optimum Performance Training (OPT™) Model.

Chapter 10 Balance Training Concepts

- Define balance and describe its role in performance and injury risk.
- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.

- Perform, describe, and instruct various core training exercises.
-

Task Number 65

Demonstrate safe techniques to enhance proprioception for self and others, explaining each technique.

Definition

Demonstration should include activities that safely challenge the individual to perform balance-oriented tasks in response to various stimuli. It should incorporate stable/unstable and soft/firm surfaces, differing levels of sensory input and balance and coordination drills under a variety of conditions. Equipment and techniques used should reflect age, sport/activity, gender, and other individual considerations.

Process/Skill Questions

- What are key elements of safe and appropriate proprioception techniques?
- What is the role of proprioception in injury/reinjury prevention?
- What effects do stable/unstable and soft/firm surfaces have on proprioception? How does level of sensory input affect proprioception?
- What types of equipment are used to enhance proprioception?
- How is proprioception measured?
- How can proprioception be enhanced in situations with little or no traditional equipment?
- How do age, sport/activity, gender, and other individual considerations factor in the development of proprioception?

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Chapter 15 Introduction to Exercise Modalities

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- Discuss the importance of balance training.
- Design a progressive balance training program for clients in any level of training.
- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
- Perform, describe, and instruct various balance training exercises.

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- Design a core training program for clients at any level of training.
- Perform, describe, and instruct various core training exercises.

Task Number 66

Implement a safe proprioception program for healthy individuals, assessing for effectiveness over time.

Definition

Implementation should reflect awareness of existing injury prevention programs (e.g., ACL) that include proprioception as a primary component. It should also include appropriate safety precautions and an understanding of age, sport/activity, gender, overall condition, and individual considerations.

Process/Skill Questions

- How are balance, proprioception, and kinesthetic awareness assessed?
- What are the proprioceptive components of existing injury prevention programs?
- What are the criteria for progression through a program?

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Chapter 15 Introduction to Exercise Modalities

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- Describe how these exercise training modalities can be systematically used within the Optimum Performance Training (OPT™) Model.

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- Understand and incorporate the principles of selected research outcomes when designing a balance training program.
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Chapter 9 Core Training Concepts

- Understand the importance of the core musculature.
- Differentiate between the stabilization system and the movement system.
- Discuss the importance of core training.
- Design a core training program for clients at any level of training.

- Perform, describe, and instruct various core training exercises.
-

Task Number 67

Identify environmental factors related to injury prevention.

Definition

Identification should include factors affecting safety, such as temperature, air quality, weather, surface conditions, and facility conditions.

Process/Skill Questions

- What weather conditions could cause injury? How can these injuries be prevented?
- How can temperature cause injury? How can these injuries be prevented?
- How can air quality cause injury? How can these injuries be prevented?
- What types of surface conditions could cause injury? How can these injuries be prevented?
- What types of facility conditions could cause injury? How can these injuries be prevented?

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Task Number 68

Identify procedures for reporting potential environmental hazards to appropriate personnel.

Definition

Identification should include recognizing the hazard, identifying appropriate personnel, and identifying methods for reporting the hazard in a timely manner in accordance with site protocol.

Process/Skill Questions

- How do you determine the appropriate personnel to report to?
- What constitutes site protocol?
- Why is it important to report hazards in a timely manner?

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Task Number 69

Identify factors related to equipment safety.

Definition

Identification should include hazards that jeopardize safety to self and others, to include, but not be limited to, jewelry, clothing, personal equipment, protective padding, shoes, and facility equipment. It should also include the importance of equipment maintenance and equipment-safety certifying agencies (e.g., ASTM, NOSCAE).

Process/Skill Questions

- What are some common equipment safety hazards?
- Why is jewelry a potential safety hazard? Clothing? Equipment? Protective padding? Shoes?
- How are various pieces of equipment maintained?
- What is the role of certifying agencies in equipment safety and maintenance?

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Task Number 70

Identify procedures for reporting potential equipment safety hazards to appropriate personnel.

Definition

Identification should include recognizing the hazard, identifying appropriate personnel, and identifying methods for reporting the hazard in a timely manner in accordance with site protocol.

Process/Skill Questions

- How do you determine the appropriate personnel to report to?
- Why is it important to report hazards in a timely manner?
- What can be the results if equipment safety hazards are not reported and addressed?

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Assessing Injuries and Illnesses

Task Number 71

Explain the role of the secondary school student aide (SA) in recognizing an injury.

Definition

Explanation should include

- the role of the SA in the overall health care of student athletes and the sports medicine team
- the limitations associated with this role
- the difference between subjective and objective information
- the difference between signs and symptoms
- verbalizing observations.

It is imperative for the student to demonstrate the understanding that the role of the SA is not to practice the skills and competencies of a certified or licensed allied healthcare professional but to assist that professional in his or her daily duties.

Process/Skill Questions

- What is the difference between a sign and a symptom?
- What is the difference between the ways an allied healthcare professional and a spectator observe an athletic event?
- What are important observations to make in an athletic setting?
- What are important observations to make in an injury or potential injury situation?
- What is the difference between subjective and objective information in observation of an injury?
- What is the role of an SA?
- What are the limitations of an SA?
- How and when should observed information be reported to the allied healthcare professional?
- What are the consequences of not following the responsibilities of the SA role?
- What is the difference between HOPS and SOAP?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

Task Number 72

Explain the scope and limitations of the secondary school student aide (SA) when providing first aid.

Definition

Explanation should include the concept that first aid requires certification and is limited to providing care to sustain life and limit further damage until higher-level care is available.

See [Virginia's Good Samaritan Law](#).

Process/Skill Questions

- Why is it important to initiate first aid procedures as quickly as possible?
- What agencies can provide first aid certification?
- What constitutes a higher level of care?
- What skills are SAs able to provide in an emergency situation?

HOSA Competitive Events (High School)

Emergency Preparedness Events

- CPR/First Aid

NASM-Certified Personal Trainer

Chapter 1 The Scientific Rationale for Integrated Thinking

- Explain the history of the profession of personal training.
- Identify common characteristics of personal training clients.
- Demonstrate an understanding of the principles of integrated exercise program design.
- Describe the Optimum Performance Training (OPT™) model.

Task Number 73

Explain the scope and limitations of the secondary school student aide (SA) when assessing injury/illness.

Definition

Explanation should emphasize that SAs must function under the direct supervision of a certified athletic trainer or other health professional; SAs do not diagnose, provide treatment, or render judgments independently.

It is imperative for the student to demonstrate the understanding that the role of the SA is *not* to practice the skills and competencies of a certified or licensed healthcare professional but to assist that professional in his or her daily duties.

See [Secondary School Student Aides](#) on NATA website.

Process/Skill Questions

- Why is it important for SAs to work under the direct supervision of a certified athletic trainer or other professional?
- Why aren't SAs able to diagnose, provide treatment, or render judgments independently?
- What consequences may result when care is provided by unqualified individuals?
- What is the role of an SA when traveling with a team?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

- Describe the qualities and characteristics of uncompromising customer service.
- Describe strategies for finding an ideal workplace.
- Understand the process for writing a resume.
- Understand the four Ps of marketing.
- Understand basic membership sales techniques, including strategies for solicitation of new sales and how to close sales.

Treating and Managing Injuries and Conditions

Task Number 74

Explain the purpose of goal setting in the treatment of injuries.

Definition

Explanation should distinguish between short-term and long-term goals, and goals should be written using the SMART goals format:

- Specific
- Measurable
- Attainable
- Realistic
- Time-bound

Process/Skill Questions

- What is goal setting?
- Why is goal setting important in the treatment of injuries?
- What is the difference between a long-term and short-term goal in injury treatment?
- How does the allied healthcare professional determine a realistic goal for injury treatment?
- How will the criteria for reaching the goal be determined?
- How will progress toward and completion of the goal be measured?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

NASM-Certified Personal Trainer

Chapter 19 Lifestyle Modification and Behavioral Coaching

- Describe the characteristics of a positive client experience.
- Understand the stages of change model.
- Describe characteristics of what effective communication skills are.
- Describe the elements of effective SMART goal-setting techniques.

Task Number 75

Manage an injury within the scope of first aid.

Definition

Management should include recognizing an injury, defining the scope of first aid, and using appropriate actions to respond to the injury.

Process/Skill Questions

- What is the definition of first aid?
- What constitutes an injury requiring first aid?
- What are the components of recognizing and providing first aid?
- What is included in the scope of first aid?
- What is the correct and appropriate manner to respond to a variety of injuries?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

Emergency Preparedness Events

- CPR/First Aid
-

Task Number 76

Explain factors to consider in creating a progressive return-to-activity programs following injury/illness.

Definition

Explanation should highlight the importance of ensuring that the program:

- reflects nature of the injury
- reflects any physical or functional limitations currently affecting the individual
- follows clearance from a healthcare provider
- reflects the goal/nature of the activity.

It is imperative for the student to demonstrate the understanding that the role of the sports medicine student is not to practice the skills and competencies of a certified or licensed allied healthcare professional but to assist that professional in his or her daily duties.

See [consensus statement on concussion in sport](#), from the International Conference on Concussion in Sport, Berlin, 2016.

Process/Skill Questions

- What are the five steps suggested in the Return to Play process for concussions, according to the Berlin Consensus Statement?
- When can an athlete begin the Return to Play process when recovering from a concussion?
- What trained professionals must evaluate and monitor concussed athletes?

NASM-Certified Personal Trainer

Chapter 16 Chronic Health Conditions and Physical or Functional Limitations

- Define and describe the cause and symptoms of selected chronic health conditions.
- Describe the characteristics of selected health and age-related physical and functional limitations to exercise.
- Recognize how the conditions discussed in this chapter affect exercise training variables within the OPT™ model.
- Recognize how acute and chronic responses to exercise vary in clients with chronic health conditions or physical or functional limitations compared with apparently healthy clients.
- Describe how to modify program design for clients with chronic health and physical or functional limitations.

Chapter 14 Integrated Program Design and the Optimum Performance Training™ (OPT™) Model

- Define and describe the acute training variables within the Optimum Performance Training (OPT™) model.
- Describe the phases within the OPT model.
- Design programs for each phase of training.

Chapter 19 Lifestyle Modification and Behavioral Coaching

- Describe the characteristics of a positive client experience.
- Understand the stages of change model.
- Describe characteristics of what effective communication skills are.
- Describe the elements of effective SMART goal-setting techniques.

Task Number 77

Identify appropriate referral sources based on scope of practice of healthcare professionals.

Definition

Identification of referral sources includes recognizing the scope of practice of healthcare professionals, determining who is the appropriate health care professional to treat and manage a variety of injuries and conditions, and explaining the consequences of acting outside the scope of practice.

Process/Skill Questions

- Why must allied healthcare professionals treat and manage injuries and conditions within their scope of practice?
- What individuals make up a sports medicine team? What is the hierarchy of responsibility/supervision?
- What are the consequences related to noncompliance with these parameters both to the sports medicine aide and to the allied healthcare professional?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine
-

Task Number 78

Explain the theory and application of common therapeutic interventions to treat and manage injuries and conditions based on professional scope of practice.

Definition

Explanation should include common therapeutic interventions used to treat and manage injuries and conditions, including exercise, thermal (heat and cold), electrical, and manual modalities.

Process/Skill Questions

- When and why should heat be used in an injury situation? When and why should cold be used?
- What is the purpose of using various modalities?

- What are examples of thermal modalities?
- What are modalities used to provide heat? What are heat modalities used for?
- What are modalities used to provide cold? What are cold modalities used for?
- What are electrical modalities? What are they used for?
- What are manual modalities? What are they used for?
- Why is exercise considered the most effective modality?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

Preparing for a Career

Task Number 79

Research various sports medicine-related professions.

Definition

Research should include

- exploration of a variety of healthcare professions related to sports medicine
- defining duties, specialties, educational requirements, prerequisites, salaries, career ladder, personal qualities needed, licensing/certification, work environment
- ways to increase one's marketability.

Example professions might include athletic trainer, personal fitness trainer, physician assistant, physical therapist, physician, exercise physiologist, nutritionist, massage therapist, and chiropractor.

Process/Skill Questions

- How do duties, scope of practice, and specialties vary among different sports medicine professions?
- How do salaries vary among different sports medicine professions?
- How do educational requirements vary among different sports medicine professions?
- How do licensure and certification requirements vary among different sports medicine professions?

- How do personal qualities needed vary among different sports medicine professions?
- How do work environment and career potential vary among different sports medicine professions?
- How does employment marketability vary among different sports medicine professions?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

Leadership Events

- Medical Photography

Teamwork Events

- Health Career Display

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

- Describe the qualities and characteristics of uncompromising customer service.
- Describe strategies for finding an ideal workplace.
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Task Number 80

Draft a résumé reflecting the student's career objective.

Definition

Draft résumé should include information such as the student's education, appropriate related experience, and career aspirations, and should list references.

See [Virginia Education Wizard](#).

Process/Skill Questions

- What are appropriate formatting options for résumés?
- What components are appropriate to include in a résumé?
- How can a student incorporate school and community activities into a résumé?
- Why is it important to contact a person before listing his or her name as a reference on a résumé?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

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Task Number 81

Practice interviewing skills.

Definition

Practice should include role-play opportunities in a classroom environment with a review of typical questions commonly included in an interview consistent with specific sports, fitness, and medical-related jobs.

Process/Skill Questions

- Prior to the interview, why is it useful to research the organization where one is applying to work?
- What types of information about the organization should the job candidate look for?
- What sources can be useful in this research?
- What are common questions to expect in an interview for a sports, fitness, and medical-related job?
- What role does nonverbal communication play in a job interview?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

NASM-Certified Personal Trainer

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-

Task Number 82

Explain the basic legalities related to employment hiring practices in the sports medicine field.

Definition

Explanation should include general U.S. Equal Employment Opportunity Commission (EEOC) practices and how they influence employment in various sports medicine fields. Explanation should include the recent interpretations of the Fourth Amendment regarding drug testing and how the amendment relates to employment in the various fields of sports medicine.

Process/Skill Questions

- What are the regulatory restrictions for volunteerism and employment in the various fields related to sports medicine (volunteer, nonprofessional, paraprofessional, professional)?
- What is the impact of the Fair Labor Standards Act on employment in various professions related to sports medicine (volunteer, nonprofessional, paraprofessional, professional)?
- What is the rationale behind requiring background checks for employment in various professions related to sports medicine?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

Teamwork Events

- Biomedical Debate
-

Task Number 83

Explain the relationship between ethics and employment skills.

Definition

Explanation should include a description of common employment skills required by typical employers associated with sports medicine facilities (e.g., time management, dependability, teamwork, attitude, problem solving) and the role ethics plays with each skill. Explanation should also include special ethical considerations common to various employment environments related to sports medicine (e.g., fitness centers, clinics, hospitals, physicians' offices, educational institutions, athletic teams).

Process/Skill Questions

- What role does workplace ethics play in time management? In dependability? In teamwork? In attitude? In problem solving?
- What special ethical considerations might arise in a fitness center? In a hospital? In an educational setting?

HOSA Competitive Events (High School)

Leadership Events

- Job-Seeking Skills

Teamwork Events

- Biomedical Debate

NASM-Certified Personal Trainer

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 - Understand the four Ps of marketing.
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-

Task Number 84

Complete an internship in a sports medicine-related field.

Definition

Completion of a clinical experience (minimum 10 hours) should include obtaining practical experience through observation and active participation in a pre-approved internship under the direct supervision of a licensed/certified professional in the sports medicine field. The student should prepare a written report on information obtained during the internship.

(Note: For dual enrollment courses, the minimum is 60 hours of clinical experience.)

Process/Skill Questions

- Why is a clinical observation experience an important part of a student's education?
- Why is it important to obtain practical observation experience at multiple sites?
- What should a sports medicine student look for when observing allied health care professionals in the workplace?
- Why is a clinical affiliation, such as an internship, an important part of a student's education in the allied health field?
- Why is it important to complete clinical affiliation at multiple sites?
- What types of skills and insights should a sports medicine student gain through clinical affiliation?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

- Describe the qualities and characteristics of uncompromising customer service.

- Describe strategies for finding an ideal workplace.
 - Understand the process for writing a resume.
 - Understand the four Ps of marketing.
 - Understand basic membership sales techniques, including strategies for solicitation of new sales and how to close sales.
-

Task Number 85

Describe educational opportunities for advancement in various sports medicine professions.

Definition

Description should detail educational opportunities and continuing education requirements in various sports medicine professions.

See [HOSA-Future Health Professionals](#).

See [Workplace Readiness Skills for Virginia](#).

Process/Skill Questions

- What are the different types of educational degrees in sports medicine? What types of occupations and responsibilities are associated with each degree?
- What specialty certifications exist in various sports medicine professions?
- What educational pathways offer opportunities for career advancement?

HOSA Competitive Events (High School)

Teamwork Events

- Health Career Display

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

- Describe the qualities and characteristics of uncompromising customer service.
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- Understand the four Ps of marketing.
- Understand basic membership sales techniques, including strategies for solicitation of new sales and how to close sales.

Task Number 86

Describe the impact of technology in various fields of sports medicine.

Definition

Description should include the impact and implications of technology on various practices/techniques and in various fields of sports medicine. It should include a commentary on how technology has changed practices in sports medicine over time.

Process/Skill Questions

- What changes in technology have taken place in sports medicine over the past 20 years?
- How has technology influenced various sports medicine-related professions?
- How has technology impacted record-keeping practices?
- How has technology impacted evaluation (e.g., pre-exercise, injury, physical evaluation)?
- How has technology impacted diagnosis?
- How has technology impacted treatment/rehabilitation?

HOSA Competitive Events (High School)

Health Professions Events

- Sports Medicine

NASM-Certified Personal Trainer

Chapter 20 Developing a Successful Personal Training Business

- Describe the qualities and characteristics of uncompromising customer service.
- Describe strategies for finding an ideal workplace.
- Understand the process for writing a resume.
- Understand the four Ps of marketing.
- Understand basic membership sales techniques, including strategies for solicitation of new sales and how to close sales.

Task Number 87

Explain the NASM-CPT credential.

Definition

Explanation should include

- CPT examination
- registration for examination
- age requirement
- cost of the exam
- study guides
- practice test
- scoring
- continuing education credits

See [National Academy of Sports Medicine](#).

Process/Skill Questions

- How many questions are on the CPT examination?
- How many times can you take the exam?
- How soon can you retake the exam if you do not pass it?
- What must be done to maintain certification?
- In what industries can you obtain employment?

Describing the Opioid Crisis

Task Number 88

Describe the history and current state of the opioid crisis in the United States.

Definition

Description should include

- the relationship between opioid prescribing and illicit opioid use to overall opioid overdose deaths
- the prevalence of co-occurring mental health disorders
- the shift in attitudes in the 1990s toward pain management and use of opioids, including the role of pharmaceutical marketing

- the stigma associated with addiction and the changing view of addiction from a moral failing to a chronic, relapsing disease
- statistics, trends, and demographics surrounding the crisis
- population health and other public health aspects of the crisis, including its effects on family and neonates, as well as overall health costs.

Process/Skill Questions

- How are opioids created?
- Can opioids be safely prescribed to patients taking psychotropic drugs?
- How does society stereotype individuals with a history of drug addiction?
- What are the current trends that have contributed to the nationwide opioid crisis?
- How has the opioid epidemic affected emergency rooms and the first responder system?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- Creative Problem Solving
- Public Service Announcement

Task Number 89

Describe the history and current state of the opioid crisis in Virginia.

Definition

Description should include

- the relationship between opioid prescribing and illicit opioid use to overall opioid overdose deaths
- the prevalence of co-occurring mental health disorders
- the shift in attitudes in the 1990s toward pain management and use of opioids, including the role of pharmaceutical marketing
- the stigma associated with addiction and the changing view of addiction from a moral failing to a chronic, relapsing disease

- statistics, trends, and demographics surrounding the crisis
- population health and other public health aspects of the crisis, including its effects on family and neonates, as well as overall health costs
- the Virginia Department of Health’s [Declaration of a Public Health Emergency](#) on November 21, 2016
- proposed legislation to address the crisis in Virginia (i.e., [House Bill 2161](#) and [Senate Bill 1179](#), which require the secretary of health and human resources to convene a workgroup to establish educational guidelines for training healthcare providers in the safe prescribing and appropriate use of opioids)
- the development of curricula and educational standards regarding opioid addiction.

Resource: [The Opioid Crisis Among Virginia Medicaid Beneficiaries](#)

Process/Skill Questions

- What agencies participated in the governor’s task meeting on the opioid crisis?
- What educational organizations will be tasked with providing opioid training to their students?
- What is the benefit of educating future medical professionals about opioid addiction?
- What is the current attitude in society about opioid use and addiction?
- How is the local community affected by the opioid epidemic?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- Creative Problem Solving
- Public Service Announcement

Task Number 90

Define the pharmacological components and common uses of opioids.

Definition

Definition should include

- plant-based opioids (e.g., opium from poppy seeds)
- names of legal and illegal opioids
- [heroin](#)
- names of the most common opioids
- [fentanyl](#)
- medical diagnoses and injuries associated with opioid prescriptions
- [commonly used terms](#).

Resource: [Prescription Pain Medications](#), National Institute on Drug Abuse for Teens

Process/Skill Questions

- For what illnesses are opioids commonly prescribed?
- What is the current medical protocol when opioids are prescribed?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology
- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing

Examining the Key Factors of Drug Addiction

Task Number 91

Examine the science of addiction.

Definition

Examination should include

- biopsychosocial aspects of addiction

- the role of endorphins and dopamine
- the role of religious beliefs
- behavioral aspects of addiction
- life cycle of addiction
- misuse of opioids.

Process/Skill Questions

- How will understanding the physiological absorption of opioids in the body provide a holistic assessment?
 - What spiritual characteristics might be observed in the science of addiction?
 - What are some genetic explanations for some family members being more prone to addiction?
-

Task Number 92

Explain prevention and early intervention strategies.

Definition

Explanation should include

- risk and protective factors in opioid addiction
- specific populations at risk of addiction
- motivational interviewing and other communication strategies
- naloxone co-prescribing
- roles of family and social institutions in prevention and early intervention.

Resources:

- [Prevention Tip Card](#), Office of the Attorney General of Virginia
- [Prescription Opioids: Even When Prescribed by a Doctor](#) (video), Centers for Disease Control and Prevention (CDC)

Process/Skill Questions

- What are the physiological characteristics of opioid addiction?
- What demographic is most affected by the opioid epidemic? What are some explanations for this?
- How can provision of naloxone and training in its use be sustained financially?
- What obligations do families and society as a whole have in preventing and providing early intervention related to drug addiction?

Task Number 93

Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

Definition

Identification should include

- DSM-5 Criteria for Substance Use Disorders
- American Society of Addiction Medicine (ASAM) Criteria (i.e., The Six Dimensions of Multidimensional Assessment)
- CONTINUUM, The ASAM Criteria Decision Engine
- clinical and behavioral aspects of addiction
- practice-appropriate screening tools, including co-morbidity screening.

Process/Skill Questions

- What are DSM-5 and ASAM and what information do they provide to healthcare professionals?
- What are clinical and behavioral elements of addiction that should be recognized by healthcare professionals?
- Who is responsible for providing the necessary screening tools and training?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Behavioral Health
- Knowledge Test: Medical Law and Ethics

Health Professions Events

- Clinical Nursing

Task Number 94

Describe the treatment models of addiction therapy.

Definition

Description should include

- a recognition that addiction is a chronic disease
- evidence-based treatment models for addiction in general and opioid addiction in particular
- medication-assisted treatment
- the continuum of care in opioid addiction treatment
- how and when to make a referral for treatment
- the roles in an interdisciplinary addiction team
- the role of peers in the treatment of addiction
- the difference between a drug culture and recovery culture
- the management of patients in recovery, including factors contributing to relapse.

Process/Skill Questions

- How many treatment models exist for addiction therapy? Why is one model better than the other?
- What are the advantages of evidence-based treatments and models?
- What medication-assisted treatment programs are available? Who provides them?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Behavioral Health
- Knowledge Test: Medical Law and Ethics

Health Professions Events

- Clinical Nursing

Task Number 95

Describe the medication management antidote used to prevent fatal opioid overdoses.

Definition

Description should include

- availability and use of naloxone
- naloxone training (e.g., [REVIVE!](#))
- naloxone training agencies
- monitoring of concurrent prescriptions.

Resources:

- [Frequently Asked Questions about Naloxone](#), Virginia Department of Health
- [How to prepare naloxone for administration](#), Virginia Department of Behavioral Health and Developmental Services

Process/Skill Questions

- What is naloxone?
- How much does naloxone cost with health insurance? How much does naloxone cost without health insurance?
- Who should receive naloxone training?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology
- Knowledge Test: Pharmacology

Understanding Pain Management Protocols

Task Number 96

Explain the science of physiological and mental pain.

Definition

Explanation should include

- definition of pain from the International Association for the Study of Pain (IASP)
- neurobiological basis of pain
- biopsychosocial model of pain
- types of pain (e.g., neuropathic)

- acute, sub-acute, and chronic pain, including pain generation
- spinal and brain modulation, behavioral adaptation and maladaptation, and the continuum from acute to chronic disabling pain
- the underlying science of pain relief.

Process/Skill Questions

- What is the IASP definition of pain?
- How can a medical professional get a patient to describe physiological pain?
- What assessment tools can be used to help patients describe physiological pain? How do tools differ for describing mental pain?
- How are pain and levels of pain categorized?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
- Creative Problem Solving
- HOSA Bowl

Task Number 97

Describe the diagnostic tools used in developing pain management plans.

Definition

Description should include

- pain-related health history and examination
- understanding the role of family in supporting individuals in need of pain management
- practice-appropriate screening tools that include aspects such as mood and function
- the use and limitations of pain scales
- differential diagnosis of pain and its placement on the pain continuum.

Resource: [Promoting Safer and More Effective Pain Management](#), CDC

Process/Skill Questions

- What are the Wong-Baker, LEGO, and Hospice assessment tools?
- How do pain assessment tools vary across the life span?
- When completing an assessment, is pain considered subjective or objective?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
- Creative Problem Solving
- HOSA Bowl

Task Number 98

Describe pain treatment options available to various populations of patients.

Definition

Description should include

- special populations in pain management, such as palliative/end-of-life care patients, patients with cancer, pediatric patients, and geriatric populations
- non-pharmacologic treatment of pain, including active care and self-care, evidence- and non-evidence-based approaches, and multimodal pain management
- non-opioid pharmacologic management of pain
- the challenges in discussing the psychological aspects of pain and the role of the central nervous system
- adverse drug event prevention for all pain medications
- the roles in an interdisciplinary pain management team
- the significance of issues such as anxiety, depression, and sleep deprivation in pain management
- the placebo effect
- goals and expectations in the treatment of pain, based on diagnosis and pain continuum
- when to make a pain referral and to whom.

Resources:

- [CDC Fact Sheet for Prescribing Opioids for Chronic Pain](#)
- [CDC Guidelines for Prescribing Opioids for Chronic Pain](#)

Process/Skill Questions

- What pain management resources are available for special populations?
- What are alternative forms of pain management?
- What role does the mind play in pain management?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
 - Creative Problem Solving
 - HOSA Bowl
-

Task Number 99

Describe the effects of opioid dependency on the human body systems.

Definition

Description should include the short- and long-term effects of opioids on the following:

- Nervous system
- Respiratory system
- Circulatory system
- Digestive system
- Skeletal system

Resource: [Drugs and Your Body](#), Scholastic

Process/Skill Questions

- How does the misuse of opioids affect nutrition and weight loss?
- How might opioid misuse be evident in a person's vital signs?
- How do opioids affect the brain as the control center for homeostasis?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- HOSA Bowl
-

Task Number 100

Explain the mechanism and physical effects of opioids on the human body.

Definition

Explanation should include the following:

- Mechanism of action and metabolism of opioids
- Development of tolerance, dependence, and addiction
- Health consequences of drug misuse
 - HIV, hepatitis, and other infectious diseases
 - Cancer
 - Cardiovascular effects
 - Respiratory effects
 - Gastrointestinal effects
 - Musculoskeletal effects
 - Kidney damage
 - Liver damage
 - Neurological effects
 - Hormonal effects
 - Prenatal effects
 - Other health effects
 - Mental health effects
 - Death
- Withdrawal
 - Causes

- Timeframe (i.e., peaks of withdrawal symptoms)
- Physical signs (e.g., nausea, diarrhea, vomiting, cold flashes)

Process/Skill Questions

- What are the short- and long-term effects of withdrawal dependence symptoms?
- How long can the human body function while exhibiting the symptoms of withdrawal?
- What are other medical conditions that may arise because of the symptoms of physical dependence?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- HOSA Bowl

Task Number 101

Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.

Definition

Explanation should include

- appropriate use of different opioids in various practice settings
- the interactions, risks, and intolerance of prescription opioids
- the role and effectiveness of opioids in acute, sub-acute, and chronic pain
- a reassessment of opioid use based on stage of pain
- contemporary treatment guidelines, best practices, health policies, and government regulations related to opioid use
- use of opioids in pain management of patients with substance abuse disorders, in recovery, and in palliative/end-of-life care.

Process/Skill Questions

- When should risk factors regarding opioids be reviewed with the patient?
- What are the options when treating patients with a history of substance abuse?
- What government regulations and policies are in place to improve the safe administration of opioids?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology
- Knowledge Test: Pharmacology

Teamwork Events

- Creative Problem Solving
- HOSA Bowl

Task Number 102

Describe the withdrawal and tapering side effects of opioid use.

Definition

Description should include

- characteristics of acute and protracted withdrawal from opioid dependence or addiction
- tapering
- pain contracts or agreements.

Process/Skill Questions

- What are the stages of withdrawal in opioid abuse transition?
- What medications might be needed in the withdrawal stage?
- What information should be included in the pain management contract?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing
-

Task Number 103

Describe storage and disposal options for opioids.

Definition

Description should include

- medicine take-back options (e.g., [National Drug Take Back Day](#))
- disposal in the household trash and flushing certain potentially dangerous medicines down the toilet.

Resources:

- [Disposal of Unused Medicines: What You Should Know](#), Food and Drug Administration (FDA)
- [Prescription Drug Abuse and Tips for Proper Disposal](#), Office of the Attorney General of Virginia

Process/Skill Questions

- How should medications be stored in the house?
- What is National Prescription Drug Take Back Initiative?
- What is the *black box*?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing
-

Task Number 104

Explain community resources for education about opioid use.

Definition

Explanation should include key components of and resources for patient education in the use of opioids, including

- risks
- benefits
- side effects
- tolerance
- signs of sedation or overdose
- naloxone, including its storage and disposal.

Process/Skill Questions

- What resources for opioid education are available locally, statewide, and nationally?
- Where should the patient first be informed about the resources available?
- How does social media aid in patient education on opioid addiction?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing

Working with Patients and Caregivers

Task Number 105

Describe key communication topics involving opioids for patients.

Definition

Description should include

- benefits and risks of opioids
- opioid risk screening (i.e., taking a social, medical, and financial history)
- risk mitigation (e.g., naloxone, safe storage, pain contracts)
- medication tapers and/or discontinuation of therapy.

Process/Skill Questions

- What are the benefits of using opioids in medicine?
- What is the relationship between demographics and risk of opioid addiction?
- How does culture influence risk factors in opioid abuse?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Health Professions Events

- Clinical Nursing
-

Task Number 106

Describe communication topics for caregivers and family members.

Definition

Description should include

- basic knowledge about opioids
- signs of addiction
- treatment options for addiction
- naloxone training for caregivers
- legal issues related to misuse.

Process/Skill Questions

- What rights do caregivers have in regard to medical information of the abuser?
- What legal steps might the caregiver or family have to take for treatment?
- Where can the caregiver or family members receive naloxone training? Are children of opioid abusers eligible for training?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Health Professions Events

- Clinical Nursing

SOL Correlation by Task

Identify the components of fitness.	
Explain the metabolic energy systems.	English: 12.5 Science: BIO.4
Explain various methods to analyze body composition.	English: 12.5 Science: BIO.4
Perform body composition analysis using a variety of methods, including anthropometric measurements.	English: 12.5
Assess vital signs.	
Differentiate between acute and chronic adaptations to exercise.	English: 12.5
Explain the body's response to exercise throughout the lifespan.	English: 12.5
Explain lever systems associated with the human body.	English: 12.5
Demonstrate movement in the planes of motion and related to the axes of human movement.	English: 12.5
Explain how force, mass, and gravity relate to human body mechanics.	English: 12.3, 12.5 Science: PH.1, PH.5
Describe acute training variables and phases within exercise program design.	English: 12.5
Explain the health-related fitness factors.	
Design programs for each phase of training.	
Describe the relationship between pre-existing conditions and injury prevention.	English: 12.3, 12.5
Explain the criteria used to determine readiness to participate in physical activities.	English: 12.5
Perform a fitness assessment.	

Demonstrate safe exercise progression for healthy individuals, explaining when progression is appropriate.	English: 12.5
Explain safe training principles to include frequency, intensity, duration, and mode.	English: 12.5
Apply the principles of strength training to various case study scenarios.	English: 12.5
Explain safe techniques to enhance strength of major muscle groups.	English: 12.5
Demonstrate safe lifting and spotting techniques as it relates to strengthening.	
Develop a safe strengthening program for healthy individuals.	
Explain the basic principles and importance of flexibility training.	English: 12.5
Explain safe techniques to enhance joint range of motion of major muscle groups.	English: 12.5
Develop a safe flexibility program for healthy individuals.	
Explain the basic principles and importance of proprioception.	English: 12.5
Demonstrate safe techniques to enhance proprioception for self and others, explaining each technique.	
Implement a safe proprioception program for healthy individuals, assessing for effectiveness over time.	
Identify environmental factors related to injury prevention.	
Identify procedures for reporting potential environmental hazards to appropriate personnel.	
Identify factors related to equipment safety.	
Identify procedures for reporting potential equipment safety hazards to appropriate personnel.	
Explain the role of the secondary school student aide (SA) in recognizing an injury.	English: 12.5
Explain the scope and limitations of the secondary school student aide (SA) when providing first aid.	English: 12.5, 12.8
Explain the scope and limitations of the secondary school student aide (SA) when assessing injury/illness.	English: 12.5
Explain the purpose of goal setting in the treatment of injuries.	English: 12.5, 12.8
Manage an injury within the scope of first aid.	
Explain factors to consider in creating a progressive return-to-activity programs following injury/illness.	English: 12.1
Identify appropriate referral sources based on scope of practice of healthcare professionals.	
Explain the theory and application of common therapeutic interventions to treat and manage injuries and conditions based on professional scope of practice.	English: 12.5
Research various sports medicine-related professions.	English: 12.5, 12.8
Draft a résumé reflecting the student's career objective.	English: 12.6, 12.7
Practice interviewing skills.	English: 12.1

Explain the basic legalities related to employment hiring practices in the sports medicine field.	English: 12.5 History and Social Science: GOVT.8, GOVT.9, GOVT.11
Explain the relationship between ethics and employment skills.	English: 12.5 History and Social Science: GOVT.16
Complete an internship in a sports medicine-related field.	English: 12.6, 12.7
Describe educational opportunities for advancement in various sports medicine professions.	English: 12.5
Describe the impact of technology in various fields of sports medicine.	English: 12.5
Explain the NASM-CPT credential.	English: 12.8
Describe the history and current state of the opioid crisis in the United States.	English: 12.5
Describe the history and current state of the opioid crisis in Virginia.	English: 12.5, 12.8
Define the pharmacological components and common uses of opioids.	English: 12.3, 12.8
Examine the science of addiction.	English: 12.5
Explain prevention and early intervention strategies.	English: 12.5, 12.8
Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).	English: 12.5
Describe the treatment models of addiction therapy.	English: 12.5
Describe the medication management antidote used to prevent fatal opioid overdoses.	English: 12.5, 12.8
Explain the science of physiological and mental pain.	English: 12.3, 12.5
Describe the diagnostic tools used in developing pain management plans.	English: 12.5
Describe pain treatment options available to various populations of patients.	English: 12.5, 12.8
Describe the effects of opioid dependency on the human body systems.	English: 12.5
Explain the mechanism and physical effects of opioids on the human body.	English: 12.5
Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.	English: 12.5
Describe the withdrawal and tapering side effects of opioid use.	English: 12.5
Describe storage and disposal options for opioids.	English: 12.5, 12.8
Explain community resources for education about opioid use.	English: 12.5
Describe key communication topics involving opioids for patients.	English: 12.5

Teacher Resources

The resources listed below may be helpful to teachers as they plan and teach this course. Items with a call number in parentheses are available from the CTE Resource Center Library. Virginia public educators are eligible to borrow up to four library items at a time.

- American Academy of Orthopedic Surgeons (AAOS). <http://www.aaos.org/>. Careers, professional development.
- American Academy of Pediatrics (AAP). <http://www.AAP.org/>. Careers, professional development.
- American College of Sports Medicine (ACSM). <http://www.acsm.org/>. Careers, professional development.
- American Council on Exercise (ACE). <http://www.acefitness.org/>. Careers, professional development.
- American Heart Association (AHA). <http://www.americanheart.org/>. First aid and CPR/AED.
- American Medical Association (AMA). <http://www.ama-assn.org/>. Legal and ethical issues, professional development.
- American Physical Therapy Association (APTA). <http://www.apta.org>. Careers, professional development.
- American Red Cross. <http://www.redcross.org/>. First aid and CPR/AED.
- Badasch, Chesebro. *Introduction to Health Occupations: Today's Health Care Worker*. Upper Saddle River, NJ: Pearson Prentice Hall, 2004. Medical terminology, careers.
- Becker, Joanne, et al. *Medical Terminology: Language for Health Care*. New York: Glencoe/McGraw-Hill, 2002. Medical terminology. (HO301.041)
- Board of Certification for the Athletic Trainer. <http://www.bocatc.org/>. Careers, professional development.
- Clover, Jim. *Sports Medicine Essentials*. Clifton Park, NY: Delmar Learning, 2001. Prevention, nutrition, assessment, treatment, human anatomy and physiology, exercise physiology, legal and ethical issues, careers, professional development. (HO302.015)
- Dennerll, Jean Tannis. *Medical Terminology Made Easy*. Clifton Park, NY: Thomson Delmar Learning, 2003. Medical terminology. (HO301.047)
- Duyff, Roberta Larson. *Nutrition and Wellness*. New York: Glencoe/McGraw-Hill, 2004. Nutrition. (HE655.169)
- Ehrlich, Ann, and Carol L. Schroeder. *Introduction to Medical Terminology*. Clifton Park, NY: Thomson Delmar Learning, 2004. Medical terminology. (HO301.045)
- Ehrlich, Ann, and Carol L. Schroeder. *Medical Terminology for Health Professions*. Clifton Park, NY: Thomson Delmar Learning, 2005. Medical terminology. (HO301.138)
- France, Robert C. *Introduction to Sports Medicine and Athletic Training*. Clifton Park, NY: Thomson Delmar Learning, 2004. Prevention, nutrition, assessment, treatment, human anatomy and physiology, exercise physiology, legal and ethical issues, careers, professional development. (HO302.016)

- Health Occupations Students of America (HOSA). <http://www.hosa.org/>. Student organization.
- International Fitness Professional Association. <http://nsca-cc.org/>. Careers, professional development.
- Kowtaluk, Helen, and Alice Orphanos Kopan. *Food for Today*. New York: Glencoe/McGraw-Hill, 2004. Nutrition. (HE655.171)
- Largen, Velda L., and Deborah L. Bence. *Guide to Good Food*. Tinley Park, IL: Goodheart-Willcox, 2004. Nutrition. (HE655.168)
- Lewandowski, Jeffrey. *Assessment of Unorthopedic Sports Injuries: A Sideline Reference Manual*. Thorofare, NJ: Slack, Inc. Assessment. (HO302.012)
- National Strength and Conditioning Association. NSCA Certification Commission. <http://nsca-cc.org/>. Careers, professional development.
- Rice University. Physical Activity Readiness Questionnaire (PAR-Q). <http://www.ruf.rice.edu/~ricerec/pages/PAR-Q.pdf>. Prevention.
- Rybski, Melinda. *Kinesiology for Occupational Therapy*. Thorofare, NJ: Slack, Inc., 2004. Prevention, assessment, biomechanics. (HO310.128)
- Scott, Ann Senisi, and Elizabeth Fong. *Body Structures and Functions*. Clifton Park, NY: Thomson Delmar Learning, 2004. Human anatomy and physiology, nutrition. (HO315.042)
- Sormunen, Carolee. *Terminology for Allied Health Professionals*. Clifton Park, NY: Thomson Delmar Learning, 2003. Medical terminology. (HO301.046)
- Starkey, Chad. *Therapeutic Modalities for Athletic Trainers*. Philadelphia: F.A. Davis, 2004. Treatment, exercise physiology.
- Tenpenny, Kevin. *Physical Therapist Assistant Exam Review*. Clifton Park, NY: Thomson Delmar Learning, 2004. Assessment, biomechanics, legal and ethical issues. (HO310.137)
- U.S. Department of Education. Family Policy Compliance Office. Family Educational Rights and Privacy Act (FERPA). <http://www.ed.gov/policy/gen/guid/fpco/index.html>. Legal and ethical issues.
- U.S. Department of Health and Human Services. Office for Civil Rights--HIPAA. <http://www.hhs.gov/ocr/hipaa/>. Legal and ethical issues.
- U.S. Department of Justice. Americans with Disabilities Act. *ADA Home Page*. <http://www.usdoj.gov/crt/ada/adahom1.htm>. Legal and ethical issues.
- U.S. Department of Labor. Occupational Safety and Health Administration. *OSHA Home Page*. <http://www.osha.gov/>. Legal and ethical issues.
- U.S. Equal Employment Opportunity Commission. <http://www.eeoc.gov/>. Legal and ethical issues.
- Virginia Board of Medicine. *Regulations Governing the Licensure of Athletic Trainers*. <http://www.dhp.state.va.us/medicine/leg/EthicsRegsAT.doc>. Legal and ethical issues.
- Virginia Career View. "Athletic Trainers." <http://www.vaview.vt.edu/career/indexOcc.cfm?id=35&searchLevel=912>. Careers.
- "Virginia Good Samaritan Act." *Code of Virginia* §8.01-225. <http://www.arlingtonva.us/Departments/EmergencyManagement/pdf/goodsam00.vaoems.pdf>. Legal and ethical issues.
- Virginia HOSA. <http://www.vahosa.org/>. Student organization.
- Winterstein, Andrew P. *Athletic Training Student Primer: A Foundation for Success*. Thorofare, NJ: Slack, Inc., 2003. Prevention, assessment, careers. (HO302.014)

Opioid Abuse Prevention Education

This [Opioid Abuse Prevention](#) document includes resources for opioid abuse prevention education from kindergarten to 12th grade.

Other Opioid Resources

Virginia Department of Behavioral Health and Developmental Services. Revive! Opioid Overdose and Naloxone Education for Virginia. [Naloxone Fact Sheet](#) (PDF).

Virginia Department of Behavioral Health and Developmental Services. [Revive! Opioid Overdose and Naloxone Education for Virginia](#) (website).

Office of National Drug Control Policy, White House. [Fentanyl: Safety Recommendations for First Responders](#) (PDF).

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Alcohol](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Bath Salts](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Cocaine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: E-Cigarette](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Heroin](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Marijuana](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: MDMA](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Meth](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Pain Medicine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Spice \(K2\)](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Tobacco and Nicotine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Other Drugs People Use and Misuse](#) (website; PDF available)

Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- Certified Group Fitness Instructor Examination
- Certified Personal Trainer Examination
- College and Work Readiness Assessment (CWRA+)
- National Career Readiness Certificate Assessment
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: *A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.*

- Introduction to Health and Medical Sciences (8302/36 weeks)
- Introduction to Health and Medical Sciences (8301/18 weeks)
- Sports Medicine I (7660/36 weeks, 280 hours)

Career Cluster: Health Science	
Pathway	Occupations
Diagnostics Services	Radiologic Technologist, Radiographer
Therapeutic Services	Athletic Trainer Exercise Physiologist Massage Therapist Occupational Therapist Occupational Therapist Aide Physical Therapist Physical Therapist Assistant