

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Chapter 1: A Foundation for Exercise Leadership

Objective I: Defining the leadership role

Sub-objectives:

- Identify the 3 levels of leadership and how they relate to the role of the exercise leader
- State the 3 practices of exemplary leadership as they relate to exercise leadership
- Describe the components of the professional profile of exercise leadership
- List roles and responsibilities associated with the exercise leader's professional profile

Objective II: Identify values, qualities, strategies and skills of leadership

Sub-objectives:

- Identify your personal values for exercise leadership
- State some qualities and skill sets that the leader can expect to develop over the course of their career
- Describe how the 3 practices of leadership are integral to the leader's role as health educator and promoter of wellness
- Identify one's leadership skills

Objective III: Examining skills and styles of leadership

- Indicate the leadership styles associated with situational leadership
- Explain how the instructional leadership styles apply to situations in exercise leadership
- Define leadership presence
- Describe your leadership presence

Chapter 2: Leadership and Communication

Objective I: Effective and efficient communication

Sub-objectives:

- State the role of effective communication within the class environment
- State methods to create and maintain interest when two people are communicating
- Describe the 4 key components of verbal & non verbal cues (timely, concise, informative, clear)
- List key indicators of leaders implementing effective communication

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Objective II: Verbal and non-verbal communication

Sub-objectives:

- Distinguish between verbal and non-verbal communication
- State the impact of non-verbal communication techniques

Objective III: Questions and feedback

Sub-objectives:

- List reasons for asking questions
- Describe different types of question styles
- List and describe hints for giving and receiving feedback
- List strategies that exercise leaders may use when providing feedback to participants in a fitness class
- Identify uses and types of need assessments and the reasons for goal setting

Objective IV: Knowing your Audience

Sub-objectives:

- Describe the profile of the adult learner

Chapter 3: Understanding and Motivating Health Behaviour

Objective I: Creating a positive environment

Sub-objectives:

- Understand the physical activity/exercise motivation and adherence problem in Canada
- Review reasons for lack of participation and adherence to physical activity and fitness programs
- Understand principles underlying a participant centered approach to learning

Objective II: The personal image

Sub-objectives:

- Describe the importance of inclusiveness in the exercise class environment, and give examples of how it can be achieved.

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- List methods an exercise leader could use to be a positive example of health related fitness

Objective III: Impact of the leader

Sub-objectives:

- Indicate techniques leaders can use to externally motivate class participants
- Identify the reasons for goal setting and the difference between "away from" and "toward" goals
- Explain the SMART acronym in relation to setting goals

Objective IV: Promotion of attitude and behaviour change

Sub-objectives:

- List the six stages of change in the stages of behavioural change model and the processes associated with movement between stages
- State action strategies at each stage of the change model to promote health behaviour

Chapter 4: Defining Physical Activity, Active Living, Exercise and More

Objective I: Defining health, physical activity, quality of life and active living

Sub-objectives:

- Describe the term physical activity
- Identify characteristics associated with the term quality of life
- Describe what is meant by the term active living

Objective II: Define the variables of the FITT principle

Objective III: Health and fitness related benefits of physical activity

Sub-objectives:

- Identify the benefits of daily physical activity
- Define the term physical fitness
- Indicate the relationship between the terms health and physical fitness

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Chapter 5: Health, Wellness, and Healthy Lifestyle Concepts

Objective I: Defining wellness

Sub-objectives:

- Define the term wellness
- Explain the term healthy lifestyle
- Identify and define the dimensions of wellness

Objective II: Connections: relating wellness and health

Sub-objectives:

- Indicate interconnection of physical health and other areas of wellness
- Demonstrate the interaction of dimensions of wellness
- List and describe 5 factors related to single bouts of exercise that help to reduce stress
- Describe lifestyle behaviours that can and cannot be modified and how they increase or decrease the risk of health related problems

Objective III: Promoting wellness

Sub-objectives:

- Describe the role of the fitness leader in promoting wellness to class participants

Chapter 6: Components of Physical Fitness

Objective I: Defining fitness related terms

Sub-objectives:

- Differentiate between performance related fitness and health related fitness
- Define the terms cardiorespiratory fitness, aerobic, maximum oxygen consumption, muscular strength, muscular endurance, flexibility and body composition

Objective II: Aerobic system and responses to training

Sub-objectives:

- Identify exercise related changes in the cardiovascular system which lead to increased cardiovascular efficiency

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Objective III: Importance of muscular strength and muscular endurance

Sub-objectives:

- Describe the importance of muscular fitness across the life span
- Describe the role of muscular endurance in posture and injury prevention

Objective IV: Stretching and flexibility

Sub-objectives:

- State the benefits of having good flexibility
- List factors that limit flexibility
- Differentiate between stretching and flexibility
- Describe static flexibility, ballistic stretching and PNF stretching
- Describe neuromuscular efficiency and the role of Golgi tendon organs and muscle spindles in stretching
- Differentiate between passive and active stretching

Objective V: Health risks and body fat

Sub-objective:

- Identify elevated health risks associated with excess body fat

Chapter Seven: Basics of Anatomy

Objective I: Define the terms - anatomy and biomechanics

Objective II: The skeletal system

Sub-objectives:

- State the five important functions of the skeletal system
- Identify the bones of the axial and appendicular skeleton
- Identify factors contributing to bone density and bone loss with aging
- Differentiate between the long, short, flat, irregular and sesamoid bones

Objective III: Defining anatomical, directional and regional terms

Sub-objectives:

- Define terms associated with anatomical position

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Objective IV: Joints and their actions

Sub-objectives:

- State the function of cartilage
- Describe the three planes of motion
- Indicate the characteristics of fibrous, cartilaginous and synovial joints
- Identify causes of joint stiffness
- Describe the following synovial joints: hinge, condyloid, ball and socket, sliding, saddle and pivot
- Describe the following terms: flexion, extension, abduction, adduction, rotation, circumduction, hyperextension, lateral flexion, dorsiflexion, plantar flexion, eversion, inversion, supination, pronation, horizontal abduction, horizontal adduction, elevation, depression, retraction, protraction, upward rotation (of the shoulder girdle) and how they relate to specific joint actions of the: neck and spine, knee, ankle, elbow and shoulder

Objective V: Ligaments, muscles and their functions

Sub-objectives:

- State the functions of ligaments and their attachments
- Describe the role of bursae and fascia in body structures
- Describe the fleshy and fibrous attachment of muscle to bone
- State three types of muscles found in the human body
- State the four functional properties of muscle tissue
- Describe the four roles of muscle
- State the difference and give an example of a one joint muscle and a two joint muscle
- Describe the general structure of a muscle and its role in muscle contraction
- Explain how musculoskeletal structure impacts your exercise selection

Objective VI: The muscular system

Sub-objective:

- Identify the major muscle groups and their functions: quadriceps (rectus femoris, vastus medialis, vastus intermedialis, vastus lateralis), hamstrings (biceps femoris, semitendinosus, semimembranosus), abductors (gluteus minimus & gluteus medius), gluteus maximus, sartorius, iliopsoas, biceps, brachialis, brachioradialis, triceps, trapezius, rhomboids, serratus anterior, latissimus dorsi, pectoralis major, pectoralis minor, deltoids, rotator cuff (teres minor, infraspinatus, supraspinatus, subscapularis), gastrocnemius, soleus, tibialis anterior, adductors (gracilis, pectineus, adductor longus, adductor magnus, adductor brevis), transverse abdominals,

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

internal obliques, external obliques, rectus abdominus, erector spinae, multifidus, quadratus lumborum

- Identify the agonist or antagonist of a muscle pair (quadriceps/hamstrings, gluteus maximus/iliopsoas, biceps/triceps, trapezius, rhomboids/serratus anterior, latissimus dorsi/ pectoralis major, medial rotators/lateral rotators of the rotator cuff, gastrocnemius, soleus/ tibialis anterior, adductors/ abductors, abdominals/erector spinae)
- In a given exercise identify the joint action and the prime mover during the concentric, eccentric and isometric phases of the movement

Objective VII: Lever systems

Sub-objectives:

- Define the terms lever and fulcrum
- Demonstrate ways to increase stability considering: center of mass and base of support
- Explain one way in which inertia affects movement
- Describe the three classes of levers
- Indicate how resistance force, length of lever and the angle of pull can alter forces on a muscle

Chapter 8: Exercise Analysis

Objective I: Safe and effective physical activity practices and exercise selections

Sub-objectives:

- Identify and describe the five components of exercise analysis
- Identify potential risks to joint structures (knee, shoulder, spine, etc.) associated with various exercise movements
- Explain the functionality criteria of exercise analysis
- Compare and contrast functional versus contraindicated exercise selections

Chapter 9: The Cardiovascular and Respiratory Systems

Objective I: The heart: structure and circulation

Sub-objectives:

- Identify the structure of the heart
- Differentiate between the systemic and pulmonary circulation
- Indicate the flow of blood through systemic and pulmonary circulation
- Describe the exchange of oxygen and carbon dioxide in the lungs and at the utilization sites

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

- Describe the flow of gases and nutrients between blood and tissue as it flows through capillaries
- Indicate how the blood is “pushed” and “milked” through the veins
- Describe what happens when blood pooling occurs

Objective II: Blood pressure

Sub-objectives:

- Define blood pressure - systolic and diastolic pressure
- Identify normal blood pressure range and factors affecting blood pressure
- Indicate what “hypertension” means
- State how blood pressure responds to exercise

Objective III: Performance parameters of the heart

Sub-objectives:

- Define cardiac output
- Describe the short term and long-term impact of exercise on stroke volume and cardiac output

Objective IV: State the role of iron in carrying oxygen

Sub-objectives:

- State the role of iron in carrying oxygen
- Describe iron deficiency anemia

Objective V: Respiratory responses to exercise

Sub-Objectives:

- Identify responses of the respiratory system to exercise
- Describe guidelines for breathing during muscular conditioning exercise

Chapter 10: Energy and Metabolism

Objective I: Energy production in the body

Sub-objectives:

- Identify the body’s sources of food for energy production
- State the function of ATP
- Describe the immediate, short term and long term energy pathways

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

- Identify the symptoms of high lactic acid levels in the body

Objective II: Interaction of energy systems during work

Sub-objectives:

- Describe the energy continuum Explain steady state exercise

Objective III: Assessing body composition

Sub-objectives:

- Differentiate between overweight and overfat
- Discuss the methods utilized to determine body weight and body composition

Objective IV: Energy balance and weight control

Sub-objectives:

- Define and explain the energy balance equation
- Differentiate between metabolism and metabolic rate relative to rest and exercise
- Identify means of promoting weight loss
- Discuss the importance of aerobic exercise and muscle conditioning for “fat loss”
- Summarize the findings regarding diet as a method of losing weight

Chapter 11: Basic Training Principles

Objective I: Physical training principles

Sub-objectives:

- Explain the physical training goal of adaptability
- Describe the variables to be considered when selecting the intensity of an exercise
- Identify the method for monitoring the level of intensity of muscular conditioning exercise
- Indicate the time or duration of exercise and the factors to consider
- Identify the criteria to consider when determining the frequency of exercise
- Identify the criteria for selecting type of exercise
- Indicate the relationship between the training variables of duration, intensity and frequency
- Define the principles of specificity and progressive overload
- Explain the terms - training threshold, ceiling effect, rest and recovery - as used in training and overtraining and as they apply to the principle of overload
- Define the principle of reversibility

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

- Understand principles underlying a participant centered approach to learning a new motor skill

Objective II: Defining overtraining

Sub-objectives:

- Indicate how a fitness participant can avoid overtraining and chronic fatigue

Chapter 12: Components of Workout Design

Sub-objectives:

- Identify and describe the different components of a workout or fitness class
- Explain the physiological responses to each component
- Identify considerations to prevent injury and increase safety for the warm-up and cool-down

Chapter 13: Monitoring Exercise Intensity

Objective I: Physiological responses to exercise

Sub-objectives:

- Compare and contrast the normal signs of the acute effects of exercise to the chronic effects of exercise

Objective II: Monitoring heart rate during exercise

Sub-objectives:

- Indicate why heart rate is useful for monitoring the intensity of aerobic exercise or the amount of physiological stress
- Explain the term target heart rate
- Demonstrate how to take a carotid and radial pulse
- Calculate the target heart rate using the Karvonen and the Max target heart rate zone methods

Objective III: Perception of effort

Sub-objectives:

- State what is meant by Ratings of Perceived Exertion
- Describe the use of the Dyspnea scale and talk test in monitoring exercise intensity

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Chapter 14: Designing, Planning and Delivering

Objective I: The program planning cycle

Sub-objectives:

- State the 5 steps in the program planning cycle
- Discuss the importance of careful planning
- Identify the benefits of planning and consequences of failing to plan

Objective II: Evaluation

Sub-objectives:

- Discuss the importance of evaluation

Chapter 15: Health Screening

Objective I: Health screening instruments and procedures

Sub-objectives:

- Explain the importance of screening for health status in previously sedentary participants
- State the purpose of health screening prior to adopting physical activity
- Describe the PAR-Q+ and its use with apparently healthy clients
- Explain how to deal with noncompliance with PAR-Q+ requirements

Chapter 16: Understanding Nutrition

Objective I: Nutrients and their functions

Sub-objectives:

- List the six major classes of nutrients and their functions

Objective II: Hydration and dehydration

Sub-objectives:

- Describe the role of water in the body and the factors that cause dehydration
- Identify the impact of dehydration on performance
- Identify steps to prevent dehydration during exercise

Objective III: Promotion of healthy nutrition

LEARNING OBJECTIVES: FOUNDATIONS IN PHYSICAL ACTIVITY AND EXERCISE

Sub-objectives:

- State some steps that all adults should take to promote nutritional health
- List the directional statements within Canada's Food Guide