



Syllabus

HPE 270 Fitness Assessment and Program Design

General Information

Date

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Author

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Department

Physical Education and Integrated Health Care

Course Prefix

HPE

Course Number

270

Course Title

Fitness Assessment and Program Design

Course Information

Credit Hours

3

Lecture Contact Hours

2

Lab Contact Hours

2

Other Contact Hours

0

Catalog Description

This course will discuss various concepts of exercise training and will provide students with the opportunity to develop and implement exercise programs to a variety of diverse populations. It is a second-year course required of students in the AS Sports Medicine degree. The course will prepare students looking to take the American College of Sports Medicine's Personal Training Certification Exam, but will also provides expanded information for other sports medicine practitioners.

Key Assessment

This course does not contain a Key Assessment for any programs

Prerequisites

None

Co-requisites

None

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course is designated as satisfying the outcomes applicable for status as a Capstone Course

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category
None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Vitality

Inquiry

Perseverance

Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Identify the necessary components of a pre-participation health screening
2. Interpret the results of a pre-participation health screening/fitness assessment
3. Design individualized exercise programs for a client/patient, based on the results of the health screening/fitness assessment.
4. Implement individualized exercise programs for a client/patient, based on the results of the health screening/fitness assessment.

Program Affiliation

This course is required as a core program course in the following program

AS Sports Medicine

Outline of Topics Covered

1. Introduction to the field/profession of personal training
 1. Introduction to fitness industry
 2. Introduction to personal training
 1. Certification requirements
 2. Educational requirements
 3. Roles and responsibilities of personal trainers
 4. Professional work environments/employment settings
 5. Relationship with other sports medicine professionals
 3. American Fitness Index
 4. Ethics and professional conduct
2. Career track for professional personal trainers
 1. Personal characteristics needed in a sports medicine professional
 2. Professional characteristics needed in a sports medicine professional
 3. Eligibility requirements
 4. Continuing education requirements
 5. Developing professional relationships/client bases
3. Anatomy and Kinesiology

1. Describing body position and joint movement
 1. Anatomical position
 2. Planes of motion / axes of rotation
 3. Postural alignment
 4. Definitions of joint movements
2. Musculoskeletal system anatomy
 1. General structures of the muscular system
 2. General structures of the skeletal system
 3. Synovial joints
 4. Joints/muscles of the upper extremity
 5. Joints/muscles of the lower extremity
 6. Joints/muscles of the vertebral column
4. Applied biomechanics
 1. General classifications of lever systems
 2. General overview of mechanical concepts
 1. Work and power
 2. Linear and angular motion
 3. Torque
5. Exercise physiology
 1. Components of the cardiovascular system
 2. Cardiac function
 1. Pulse
 2. Blood pressure
 3. Stroke volume
 4. Cardiac output
 5. Acute response to cardiovascular exercise
 6. Chronic adaptations to cardiovascular exercise
 3. Components of the respiratory system
 4. Respiratory function / maximal oxygen consumption
 5. Energy systems
 1. Aerobic metabolism
 2. Anaerobic metabolism

3. Recovery from exercise
6. Components of the muscular system
 1. Skeletal muscles
 2. Muscle contraction
 3. Muscle fiber types
 4. Motor units
7. Components of the nervous system
 1. Central nervous system
 2. Peripheral nervous system
 3. Autonomic nervous system
8. Flexibility definition
6. Nutrition and human performance
 1. General function of energy nutrients
 2. General function of vitamins, minerals and water
 3. Energy balance
 4. General ideas of nutrient supplementation
 5. Practical issues related to eating for performance
7. Theories of behavior change
 1. Behavior modification theory
 2. Stages of behavior change
 3. Strategies of behavior change
 1. Precontemplation
 2. Contemplation
 3. Preparation
 4. Action
 5. Maintenance
8. Motivational techniques
 1. Appreciative inquiry
 1. 5-D cycle
 2. AI protocol
 2. Motivational interviewing
 1. Internal vs. external motivation

2. Motivational inquiry principles
 1. Empathy
 2. Self-efficacy
 3. Rolling with resistance
 4. Developing discrepancy

9. Preparticipation Health Screening
 1. Purposes of health screening
 2. Health history evaluation form
 3. Informed consent
 4. Medical clearance form
 5. Client goals
 6. Health and fitness assessment
 1. Risk factors
 1. Signs/symptoms of cardiovascular disease
 2. Signs/symptoms of pulmonary disease
 3. Signs/symptoms of metabolic disease
 2. Medical history
 3. Medications
 4. Exercise history
 5. Nutrition
 6. Resting heart rate and blood pressure
 7. Body composition, height, weight
 8. Cardiovascular fitness
 1. 1-mile walk test
 2. 1.5-mile run test
 3. Queens College Step Test
 4. Cycle ergometer test
 5. Exercise heart rate
 6. Recovery heart rate
 9. Muscular fitness
 1. Muscular strength
 2. Muscular endurance

3. Flexibility

10. Interpretation of fitness assessment results

1. Cardiovascular assessment results
2. Muscular strength assessment results
3. Muscular endurance assessment results
4. Flexibility assessment results

11. Basics of exercise program design

1. General training principles
 1. Specificity
 2. Overload
 3. Progression
 4. Exercise intensity
2. Rationale, indications, and contraindications of exercise training
 1. Cardiorespiratory training
 1. Review of the cardiovascular system
 2. Review of the respiratory system
 3. Factors for choosing/types of cardiovascular exercise
 1. Exercise intensity
 2. Heart rate
 3. Stroke volume
 4. Cardiac output
 5. Blood pressure
 6. Maximum oxygen consumption
 4. Warm-up/cool down
 5. Implementation of cardiovascular program
2. Resistance training
 1. Review of the musculoskeletal system
 2. Principles of resistance training
 3. Muscle actions
 4. Order of exercises
 5. Resistance/repetitions/sets used
 6. Muscular strength

7. Muscular endurance
 8. Muscular power
 9. Balance/stability training
 10. Resistance training modalities
 11. Implementation of resistance training program
 12. Progression of resistance training activities
3. Flexibility training
 1. Benefits of increased flexibility
 2. Types of stretching
 1. Static
 2. Passive
 3. Active/dynamic
 4. Active assistive
 5. Proprioceptive neuromuscular facilitation
 6. Dynamic/ballistic
 3. Guidelines for proper stretching
 4. Implementation of flexibility program
3. Exercise in special populations
 1. Older adults
 2. Clients with cardiovascular disease
 3. Women who are pregnant
 4. Clients with Type 1 or Type 2 diabetes
 5. Clients that are obese
 6. Clients with thyroid/metabolic disorders
 7. Clients with cerebrovascular disease
 8. Modifying exercise prescriptions based on environmental considerations