GROSSMONT COLLEGE

COURSE OUTLINE OF RECORD

Curriculum Committee Approval: 11/30/2021

GCCCD Governing Board Approval: 12/14/2021

ES 005A – BEGINNING Cardio Fitness and Resistance Training

1. Course Number Course Title Semester Units

ES 005A Beginning Cardio Fitness and Resistance Training 1.5

Semester Hours

1 hour lecture: 16-18 hours 32-36 outside-of-class hours for lecture 2 hours laboratory: 32-36 hours

80-90 total hours

2. Prerequisites

None

Corequisites

None

Recommended Preparation

None

3. Catalog Description

This course is designed to provide a beginning level fitness experience to develop the key components of health-related physical fitness: cardiorespiratory endurance, muscular strength and muscle endurance, body composition, and flexibility. Emphasis will be placed on the latest scientific theories for cardiorespiratory exercises and correct lifting techniques of resistance training. The students will develop a personalized cardiorespiratory endurance, muscular strength, muscular endurance, and flexibility program. Students will also learn the fundamental principles of physical fitness and their impact on a life-long health and wellness.

4. Course Objectives

The student will:

1. Recognize and define beginning level cardiorespiratory and resistance training principles and programs.
2. Identify and locate the major muscle groups and basic resistance exercises and stretches.
3. Evaluate muscle strength, muscle endurance, cardiorespiratory endurance, and body composition through pre & post assessments.
4. Demonstrate knowledge of and implement cardiorespiratory and resistance training principles and systems.
5. Design, monitor, and evaluate a personalized cardiorespiratory and resistance training program.
6. Identify and interpret the Core Curriculum concepts that lead to an active and healthy lifestyle.
7. Discuss physical literacy and identify personal habits that prevent disease and promote health.

5. Instructional Facilities

1. Cardiorespiratory and resistance training facility that is ADA compliant
2. Resistance training equipment and supplies: Barbells, dumbbells, variable resistance machines, plate loaded weight machines, physio balls, equipment accessories, stability training equipment, medicine ball, kettle bells, and any other current industry-approved equipment.
3. Cardiorespiratory training equipment and supplies: stationary bikes, ellipticals, treadmills jump ropes, and plyometric boxes and other current industry-approved equipment.
4. Floor Mats for each student
5. Physical fitness assessment equipment
6. Projector, screen, and audio and visual equipment

6. Special Materials Required of Student

a. Appropriate fitness attire (appropriate exercise attire for both indoor and outdoor activities).

b. Water bottle, hat, and sunscreen.

c Towel

7. Course Content

1. Physiological assessment of current fitness and health levels (muscle strength, muscle endurance, cardiorespiratory endurance, flexibility, body composition, body mass index, girth measurements, and blood pressure)
2. Resistance training modalities and activities:
3. Modalities: body weight, dumbbells, barbells, plate-loaded machines, isotonic resistance machines, cable/pulley equipment, suspension training, kettle bells, and medicine balls.
4. Introduction of stability equipment and activities: physio ball, Bosu trainer and unilateral exercises
5. Selection of resistance training exercises and stretches for the major muscle groups
6. Resistance training principles
7. Resistance training concepts:
8. Individual training goals: muscle strength, muscle endurance, and general muscle fitness
9. Types of muscle contraction: concentric, eccentric, isometric, isotonic, and isokinetic
10. Phases of a lifting session (dynamic warm-up, resistance training exercises, static stretches, and recovery)
11. Development of a beginning level personalized fitness training program
12. Personal goals and needs
13. Resistance training program design variables:
    * + - 1. Selection of exercises
          2. Sequence
          3. Tempo/cadence
          4. Volume: resistance, repetitions, and sets
          5. Rest periods
          6. Frequency of training sessions
          7. Range of motion
14. Resistance training systems (i.e., pyramid, single set, multiple set, super set, and compound)
15. Resistance training techniques
16. Basic lifting mechanics (starting position and movement technique)
17. Grips (i.e., supinate/underhand and pronate/overhand, neutral, and alternating/reverse)
18. Grip widths (i.e., shoulder-width, narrow, and wide)
19. Breathing (patterns and Valsalva maneuver)
20. Spotting
21. Cardiorespiratory modalities and activities
    1. Modalities: stationary bikes, ellipticals and treadmills equipment, plyometric boxes, jump ropes, and industry standard track-and-field facilities.
    2. Introduction of spin concepts and routines, proper use of and routines for ellipticals and treadmills equipment, and proper biomechanics for walking and running exercises.
    3. Selection of cardiorespiratory training exercises and stretches for the major muscle groups
22. Cardiorespiratory training principles
23. Cardiorespiratory training concepts:
24. Individual training goals: cardiorespiratory fitness and general fitness
25. Types of cardiorespiratory exercises: aerobic and anaerobic
26. Phases of a cardiorespiratory session (dynamic warm-up, cardiorespiratory exercises, static stretches, and recovery)
27. Flexibility and recovery
28. Types of flexibility: dynamic and static
29. Types of stretching exercises for each muscle group
30. Self-myofascial release (i.e., foam rolling)
31. Injury prevention and treatment (RICE)
32. Resistance and cardiorespiratory training adaptations
    1. Benefits of resistance training
    2. Basic muscle physiology (motor unit recruitment, neuromuscular adaptation, and hypertrophy)
33. Correct technique for using cardiorespiratory and resistance training equipment and activities
34. Cardiorespiratory development activities: stationary bikes, ellipticals, and treadmills, and industry standards track.
35. Muscle development activities: proper technique for body weight, weight training machines, and resistance training equipment (i.e., tubing, dumbbells)
36. Flexibility activities: stretching exercises

j. Core Curriculum Concepts

1. Increasing physical literacy
   1. Self-efficacy, motivation, adherence strategies
   2. Benefits of leading a physically active lifestyle
2. Fitness training principles: progressive overload, specificity, reversibility, individuality, FITT
3. Name and location of major muscle groups
4. Healthy eating principles
5. Six essential nutrients
6. Healthy eating patterns based on current guidelines
7. Body composition and weight management: assessment, strategies to improve, and role of exercise and healthy eating)
8. Impact of an active and healthy lifestyle on disease prevention: heart disease, obesity, metabolic conditions, stress management, and mental health
   * 1. Modes to increase physical literacy
   1. Self-confidence, motivation, adherence strategies
   2. Benefits of leading a physically active lifestyle

8. Method of Instruction

* 1. Group and individual lecture

1. Visual and online instructional materials (DVD, video, fitness apps and software, and Canvas)
2. Student demonstration and performance
3. Instructor-led demonstration and activities
4. One-on-one instruction and consultation
5. Physiological assessments and monitoring

9. Methods of Evaluating Student Performance

1. Observation of correct form of movement mechanics, resistance training principles, cardiorespiratory routines, and program design variables.
2. Written final exam (knowledge and Core Curriculum Concepts)
3. Written self-assessments (i.e., resistance training and cardiorespiratory log)
4. Pre and post fitness assessment~~s~~
5. Cardiorespiratory endurance (i.e., 1.5-mile run, 1.0-mile walk)
6. Muscle strength (i.e., weight training machine)
7. Muscle endurance (i.e., push-ups, plank)
8. Flexibility (i.e., back saver sits and reach)
9. Body Composition (i.e., bioelectrical impedance, skinfold calipers, girth measurements)
10. Health Measurements (i.e., resting heart rate, resting blood pressure, height/weight)
11. Evaluation of outside class assignments utilizing the course text.
12. Practical exams (biomechanical skills for resistance and cardiorespiratory exercise)

10. Outside Class Assignments

1. Perform at least one additional day of prescribed exercises to meet minimum frequency standards needed to improve muscle strength, muscle endurance, cardiorespiratory endurance, and flexibility.
2. Weekly assignments (i.e., reading, discussion forum on class concepts, video analysis, self-reflection)
3. Assignments based on course text (i.e., healthy eating, risk of heart disease)

11. Representative Texts

1. Representative Text(s):

Exercise Science and Wellness Department. *The Way to a Long and Healthy Life*. El Cajon, CA: Grossmont College, 6th edition, 2017.

b. Supplementary texts and workbooks:

Instructor materials: ACSM exercise guidelines; Dietary Guidelines for Americans

Student Learning Outcomes

Upon completion of the course, the student will:

1. Demonstrate knowledge, skills, and appreciation of cardiorespiratory fitness and resistance training at a beginning level.
2. Identify basic principles for maintaining an active and healthy life.