

Common Course Outline

HFMJ 200

Applied Exercise Science

3 Semester Hours

The Community College of Baltimore County

Description

Applied Exercise Science

Focuses on the physiological and biomechanical principles of human performance and conditioning; explores these principles from a variety of perspectives, including injury prevention and treatment, rehabilitation, special population considerations, and specific disease states.

Corequisite: BIOL 202 and (ENGL 051 or LVE 1)

Overall Course Objectives

Upon completion of this course the student will be able to:

1. Explain the biomechanical principles of movement and exercise.
2. Identify the major muscle groups used in various exercises and describe their functions.
3. Identify both safe and contraindicated exercises from a biomechanical perspective.
4. Identify causes, symptoms, and treatments for specific training injuries.
5. Implement a therapeutic exercise program for specific injuries.
6. Compare and contrast various rehabilitative programs.
7. Identify the physiological changes from childhood to old age and develop an exercise program appropriate for different age groups.
8. Develop exercise alternatives for special populations, including pregnant women and the physically disabled.
9. Develop exercise alternatives for various disease specific states, including arthritis, diabetes, hypertension, asthma, obesity, and orthopedic impairment.
10. Identify the physiological effects of different medications on physical performance and conditioning.

Major Topics

- I. Nutrition for Exercises
- II. Energy Value/Transfer (Krebs Cycle)
- III. O₂ Deficit / O₂ Debt / Max VO₂
- IV. Calorimetry / RQ
- V. BMR / MET
- VI. Pulmonary Ventilation
- VII. Treadmill Testing
- VIII. Circulation and B/P
- IX. Biomechanics
- X. Kinesiology

Course Requirements

Grading: Grading procedure will be determined by the individual faculty member, but will include the following:

1. Attendance and participation
2. Two written exams: mid-term and final
3. A minimum of four classwork/lab assignments
4. A minimum of two quizzes
5. A minimum of two classroom presentation projects.

Individual faculty members may include additional course objectives, major topics, and other course requirements to the minimum expectations stated in the Common Course Outline.

Date Revised: 09/29/00