Oxford College *of Emory University*
Division of Physical Education & Dance

PE 100 Health/Conditioning
Dr. Richard Shappell
Spring 1998

Course Description:
The course is designed for students interested in learning and engaging in exercise programs which enhance the cardio-respiratory (aerobic) system. Students learn basic exercise physiology, nutrition, medical aspects of exercise, body composition and weight control, and the designing of aerobic exercise regimens. In this class aerobic enhancement is achieved, for the most part, through a variety of activities.

Text: AEROBIC MOVEMENT Dr. Richard Shappell

Dress:

Students are required to wear running shoes and socks. Students are further urged to wear loose fitting shirts and shorts. Shirts are to be worn at all times.

I. **Sequence of Events:**
1. Readings/Lectures
2. On-going exercise program
3. Laboratory Experiences
4. Exams
5. Post test

II. **Reading Assignments/Lectures:**
Students will be assigned specific readings in the text. Students are expected to read these assignments prior to each lecture.

(1) Lecture 1 - Background - Introduction

(1) Lecture 2 - The Cardio-Respiratory System - Chapter 3

(1) Lecture 3 - Training the Cardio-Respiratory System - Chapters 1

(1) Lecture 4 - Types of Exercise - Chapter 2

(2) Lecture 5 - Ventilation - Chapter 4

(2) Lecture 6 - Diffusion - Chapter 5

(2) Lecture 7 - Factors Affecting O_2 - Chapter 6

(3) Lecture 8 - Metabolism - Chapter 7

(3) Lecture 9 - Cardio-Respiratory Changes - Chapter 8.

(4) Lecture 10 - Effects of Training - Chapter 9

(4) Lecture 11 - Sex Differences - Chapter 10

(5) Lecture 12 - Medical Effects - Chapter 11

(5) Lecture 13 - Diet and Ergogenic Aids - Chapter 12

III. **Instructional Objectives:** (Lectures one through seven)

Students should be able to list, understand, identify and explain the following.

1. Components of the Respiratory System
2. Components of the Cardio-Vascular System.
3. The anatomy of the heart.
4. Blood flow through the heart.
5. Oxygenated and deoxygenated blood.
6. Arteries, veins, capillaries (define).
7. Ventilation (define, explain).
8. Diffusion (define, explain).
9. Define, explain heart rate, target heart rate, stroke volume, cardiac output, venous return, shunting, hemoglobin, mitochondria, myoglobin, blood pressure.
10. Define, compare and contrast the ATP-PC Energy System, Glycolysis, and the Aerobic Energy System.
11. Define metabolism.
12. Define, explain cardio respiratory changes before, during and after exercise (changes in ventilation, diffusion, heart rate, stroke volume, cardiac output, blood pressure, venous return, shunting, internal temperature).
13. Define and explain the Principles of Training the Cardio Respiratory System.

(Lectures eight through thirteen)

1. Explain the effect on the body of various types of exercise and the effect of exercise in cold and hot weather on the body.
2. Understand heat acclimatization.
3. List and explain sex differences.
4. List and explain the physiological effects of aerobic training.
5. Explain detraining and how one maintains cardio respiratory training effects.
6. List and explain the medical effects of aerobic training.
7. Explain the Training Diet.
8. Explain Ergogenic Aids.

IV. Laboratory Experiences:

Students shall attend exercise laboratory sessions.

Students will assist in monitoring certain physiological parameters (heart rate, blood pressure, etc.) of a selected subject exercising on a bicycle ergometer. Data will be collected and students will comment on and discuss this data. Individuals will also be assessed as to ECG, body composition, and blood pressure.

V. Post Tests:

Students shall engage in a non-stop exercise bout at the end of the semester.

VI. Evaluation:

A. Announced Written Exams: (40%/400 pts.) There will be five (5) announced written exams during the semester. The lowest test grade will be dropped.

B. Final Exam: (10%/100 pts.)
Administered on the final class day, this exam covers all material.

C. Program:
Completion of the post-test earns the student 500 pts. (50%) The post-test consists of a non-stop 30-minute run/jog/walk.

D. Cut Policy:
Students who miss more than two (2) times during the semester will lost 50 pts. per absence. This deduction will be made from the 500 point program total.

E. Grading:

A = 89-100
B = 79-88
C = 70-78
D = 60-69