

UNIVERSITY OF EDUCATION, WINNEBA
DEPARTMENT OF HPERS



2007/2008 ACADEMIC YEAR - SEMESTER II

COURSE CODE : PES 241
COURSE TITLE : EXERCISE PHYSIOLOGY
NO. OF CREDITS : TWO (2)
INSTRUCTOR : EMMANUEL OSEI SARPONG

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MENTOR : DR. J. O. A. AMMAH

RATIONALE AND DESCRIPTION

A study of the physiological responses and adaptations to exercise as related to human performance limitations, training effects and health related benefits. Emphasis is given to the cardiovascular basis of such phenomena, interrelating topics such as circulatory physiology, energy production (athletic nutrition), fatigue, and aids that are impediments to athletic performance.

COURSE OBJECTIVES

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

1. Explain the meaning of Exercise Physiology and tell its importance
2. Define the terms HEMOSTASIS and STEADY STATE and explain NEGATIVE FEEDBACK.
3. Give the physiological explanation for the observation that the oxygen debt is greater following intense exercise when compared to the oxygen debt following light exercise.
4. Define the terms CONCENTRIC and ISOMETRIC contractions and their effectiveness in movement
5. Give an overview of the design and function of the circulatory system
6. Outline the circulatory responses to various types of exercise
7. Discuss the regulation of cardiac output during exercise
8. Define the four processes of heat loss during exercise
9. Describe the effects of carbohydrate diets on muscle glycogen and on endurance performance during heavy exercise
10. Describe the process of adaptation to altitude, and the degree to which this adaptation can be complete.
11. Define ergogenic aid, and describe blood doping and its potential for improving endurance performance
12. Describe the physiological and psychological effects of different types of warm-ups.

INTSTRUCTIONAL STRATEGIES

Lectures, discussions, and class activities to be employed to achieve the stated objectives.

EXAMINATION

Students will be assessed periodically in the course of the semester. The instructor shall inform students of any impending assessment. In addition to the continuous assessment there will be an end of semester examination. Students who fail to do their assignment or show up for examination will not be allowed to make up, except on medical grounds with a medical report from a recognized physician.

ATTENDANCE

Attendance will be checked before the start of each session. Students are expected to attend all class sessions. Students will be allowed only two absences during the period. Subsequent absences shall attract a point deduction from total points made in course work.

TARDINESS

Lateness to lectures will not be tolerated. Students who are late twice for lectures will be counted as one absence.

EVALUATION PROCEDURES

Continuous Assessment (quizzes, assignments, etc)	40%
End of semester Examination	60%

ACADEMIC DISHONESTY

Academic dishonesty will not be allowed. Any form of academic misconduct (cheating, etc) will not be tolerated. All cases of confirmed or suspected dishonesty will be referred to the Departmental Academic Board and eventually to the University’s Academic board.

GRADING

A	=	80 - 100
B+	=	75 - 70
B	=	70 - 74
C+	=	65 - 69
C	=	60 - 64
D+	=	55 - 59
D	=	50 - 54
E	=	49 and BELOW

TOPICAL OUTLINE

1. What is Exercise Physiology? What is the importance of exercise physiology?
2. Control of the internal environment
3. Skeletal muscle: Structure and function
4. Respiration during exercise
5. The nervous system - structure and control of movement
6. Exercise metabolism
7. Temperature Regulation
8. The circulatory system and exercise
9. Factors affecting performance
10. Training for performance
11. Nutrition, body composition and performance
12. Fuels for exercise
13. The physiology of training
14. Environmental and exercise
15. Ergogenic Aids

REFERENCE

Arnould-Taylor, W.E. (1988), A textbook of Anatomy and Physiology (2nd ed.) Cheltenham, UK, Stanley Thomas (Publishers) Ltd.

Fox, E, Bowers & Foss M, (1995), The Physiological Basis for Exercise and Sport (5th ed.) Madison; Brown and Benchmark Publishers

Gensemer, R. E. (1995) Physical Education (Perspective inquiry, application) (3rd ed.) Madison: Brown and Benchmark Publishers.

Lamb, D (1984), Physiology of exercise (Responses and Adaptations) (2nd ed) New York N. Y.; Mac Millan Publishing Company.

Powers, S.K. & Howley E.T. (2001), Exercise Physiology (Theory and Application to fitness and Performance (4th ed.). New York N.Y.; Mc Graw-Hill

Thompson, P.J.I.; (1991), Introduction to coaching theory; IAAF Coaches Education and Certification System, West Sussex UK, I & S Printing Company Ltd.