SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 24.0101
SEMESTER: Departmental Syllabus
COURSE TITLE: Exercise Physiology
COURSE NUMBER: EXSC0212
CREDIT HOURS: 3
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
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KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: BIOL0141, Human Anatomy and Laboratory, BIOL0271/0272 Physiology and Physiology Laboratory

REQUIRED TEXT AND MATERIALS:
Please check with the KCKCC bookstore, http://www.kckccbookstore.edu/ for the required texts for your particular class.

COURSE DESCRIPTION:
This course is a survey of scientific principles, methodologies, and research as applied to exercise and physical fitness. The emphasis is on physiological responses and adaptation to exercise. Basic elements of exercise physiology, kinesiology, and motor learning are addressed.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, learning experiences, and performances outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. Introduction - Why Study Exercise Physiology?
II. The Energy Systems
III. The Cardiovascular System
IV.  The Neuromuscular System
V.  The Pulmonary System
VI. Nutrition
VII. Training the Body Systems
VIII. Body Composition and Weight Control
IX.  Ergogenic Aids
X.  The Environment

EXPECTED LEARNER OUTCOMES:
A. The student will be able to explain why exercise physiology is important for the student in an allied health field.
B. The student will be able to describe how energy is transferred at rest and during physical activity.
C. The student will be able to list the components of the cardiovascular system and how they are affected by exercise.
D. The student will be able to examine the pulmonary system at rest and during physical activity.
E. The student will be able to list the major nutrients and explain the specific needs of the exercising body.
F. The student will be able to demonstrate training techniques for the muscular and cardiovascular systems.
G. The student will be able to compare lean and fat body mass, and how to control the level of each in the body.
H. The student will be able to discuss illegal uses of ergogenic aids amongst athletes.
I. The student will be able to explain how the body tolerates ranges in temperature.

COURSE COMPETENCIES:
The student will be able to explain why exercise physiology is important for the student in an allied health field.
1. The student will be able to explain why exercise physiology is important for the student in an allied health field.

The student will be able to describe how energy is transferred at rest and during physical activity.
2. The student will be able to examine how cells extract the chemical energy bound within the food nutrients.

The student will be able to list the components of the cardiovascular system and how they are affected by exercise.
3. The student will be able to discuss how energy is transferred to sustain physiological function during light, moderate and strenuous exercise.
4. The student will be able to list the components of the cardiovascular system, including blood pressure, the heart’s blood supply, and regulation of the cardiovascular system at rest and during exercise.
5. The student will be able to describe the acute and long term physiological and preventative effects of mobilization and exercise.
6. The student will be able to analyze normal and abnormal responses of the cardiovascular system to exercise.

The student will be able to examine the pulmonary system at rest and during physical activity.
7. The student will be able to list cardiopulmonary manifestations of systemic conditions.
8. The student will be able to describe pulmonary function tests.
9. The student will be able to discuss the components of multi-system assessment.
10. The student will be able to diagram the neural and muscular systems and how muscles respond to neural impulses.
11. The student will be able to recall the structure of skeletal muscle, the contraction process and fiber types.
12. The student will be able to describe the anatomy and mechanics of the lung and its function during exercise.

13. The student will be able to explain gas exchange and transport, and regulation of pulmonary ventilation.

The student will be able to list the major nutrients and explain the specific needs of the exercising body.

14. The student will be able to list the major nutrients and explain the specific needs of the exercising body.

15. The student will be able to compare how carbohydrates, fats and proteins are used as energy sources.

16. The student will be able to examine how the body during exercise uses vitamins, minerals and water.

17. The student will be able to discuss how athletes prepare themselves nutritionally before, during and after exercise.

The student will be able to demonstrate training techniques for the muscular and cardiovascular systems.

18. The student will be able to demonstrate training techniques for the muscular and cardiovascular systems.

19. The student will be able to recall the training principles.

20. The student will be able to compare the anaerobic and aerobic systems.

21. The student will be able to describe muscle training and adaptations to resistance training.

The student will be able to compare lean and fat body mass, and how to control the level of each in the body.

22. The student will be able to examine the gross composition of the human body and methods to assess body composition.

23. The student will be able to list the health risks of obesity and how to control obesity.

24. The student will be able to discuss how the aging process affects the physiological systems.

The student will be able to discuss illegal uses of ergogenic aids amongst athletes.

25. The student will be able to discuss illegal uses of ergogenic aids amongst athletes.

26. The student will be able to recall the use and effects of different ergogenic aids.

ASSESSMENT OF LEARNER OUTCOMES:
Student progress is evaluated by means that include, but are not limited to exams, written assignments, and class participation.

NOTE:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.
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