

MERCER COUNTY COMMUNITY COLLEGE
COURSE OUTLINE
Revised Spring 2008
APPLIED EXERCISE PHYSIOLOGY
HPE241

Credits: 3

Instructor: John Kalinowski, MS CSCS

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COURSE DESCRIPTION

Addresses anatomical, biomechanical, and physiological effects of physical activity on the human body through a series of lectures and labs. Students learn methods of assessment, design and implementation of exercise programs for individuals and groups. Lab activities include practical applications of theoretical concepts.

Prerequisites: BIO 103, ENG 101

TEXT: *Title:* Exercise Physiology: Energy, Nutrition, & Human Performance, 6th Ed.

Authors: McArdle, Katch, & Katch

Publisher: Lippincott, Williams, & Wilkins

ISBN: 0-7817-4990-5

ROOM: PE129

COURSE OBJECTIVES

The students will be able to:

- Understand, describe, and perform appropriate protocols for assessing body composition.
- Discuss, distinguish, identify, and design appropriate training protocols for weight management.
- Discuss, distinguish, and identify the roles and sources of dietary macro-nutrients on metabolism and exercise.
- Discuss, distinguish, and identify the roles and sources of dietary micro-nutrients on health and performance.
- Describe, analyze, and recommend appropriate nutrient requirements for optimal performance.
- Describe, distinguish, and identify energy transfer and expenditure within the body for optimal performance.
- Describe, discuss, and identify function and impact that the pulmonary, cardiovascular, endocrine, and skeletal systems have on performance.
- Design, describe, distinguish, and identify appropriate training protocols for developing aerobic and anaerobic power, and muscular strength, as well as for individuals with medical protocol considerations and environmental considerations.

COURSE REQUIREMENTS & EVALUATION CRITERIA

- | | |
|-----------------------------|---------|
| • Class participation - 10% | 40 pts |
| • Laboratory Work - 30% | 120 pts |
| • Tests (4) – 40% | 160 pts |
| • Final Examination – 20% | 80 pts |

TOTAL POSSIBLE POINTS **400 pts**

COURSE REQUIREMENTS & EVALUATION CRITERIA IN DETAIL

Class participation – 10%

- Student attendance to all lectures and laboratory sessions is required.
- Students will be required to participate in individual and group (2-4 panelists/group) discussions that will promote identification, description, interpretation, discovery, and/or justification of their beliefs/findings relevant to class topics.

Laboratory Work – 30%

- The student will be required to complete several practical applications of the lecture material (laboratory activities). The completion of these activities will require research, assessment evaluation, analysis, and results discussion. The designated point values for each lab will vary depending on the difficulty level and the amount of work required.

Tests (4) – 40%

- Four tests will be utilized to evaluate student comprehension of the material. Each test will be an objective and subjective assessment of student learning up to that period of the semester. The tests will entail classification, computation, definition, discussion, identification, listing, naming, and/or contrasting of course appropriate material.

Final Examination – 20%

- The Final will be an objective and subjective assessment of student learning for the entire semester. The Final will entail classification, computation, definition, discussion, identification, listing, naming and/or contrasting of course appropriate material.

GRADING POLICY

A	376-400	C+	307-319
A-	360-375	C	280-306
B+	347-359	D	240-279
B	334-346	F	0-239
B-	320-333		

The lab assignments, tests, and Final are to be completed as scheduled. Exceptions will be made for approved illnesses, religious holidays, and/or personal issues at the discretion of your instructor. **Otherwise, any test/exam (not completed) or assignment (not submitted at the beginning of the class on the due date) will not be accepted.**

Information Resources:

Web Sites:

www.acsm.org – American College of Sports Medicine
www.aahperd.org – American Alliance for Health, Physical Education, recreation & Dance
www.fitnessbusiness-pro.com
www.healthpromotionjournal.com
www.ihrsa.org – International Health, Racquet, and Sports Clubs Association
www.isapa.org – International Society for Aging and Physical Activity
www.jap.physiology.org - Journal of Applied Physiology
www.nasca-lift.org – National Strength and Conditioning Association
www.nasm.org – National Academy for Sports Medicine
www.naspem.org – North American Society for Pediatric Exercise Medicine
www.nata.org – National Athletic Training Association
www.physsportsmed.com – The Physician and Sportsmedicine
www.specialolympics.org – Special Olympics
www.sportsnutritionociety.org – International Society for Sports Nutrition
www.ymca.com

Other Journals (not found on the above web sites):

American Journal of Health Behavior
Clinical Exercise Physiology

Other Organizations/Associations:

American Association for Active Lifestyles & Fitness
American Association for Health Education
American Association for Leisure & Recreation
National Association for Girls & Women in Sport
National Association for Sport & Physical Education
National Dance Association

CLASS SCHEDULE

- 8/28/06 Course Introduction and Course Requirements/Evaluation Criteria
- 8/30/06 CH. 1 (p.7) : Carbohydrates, Lipids, and Proteins
- 9/04/06 CH. 1 (p.7) : Carbohydrates, Lipids, and Proteins
- 9/06/06 LAB #1: Nutrition #1 – Carbohydrates, Lipids, and Proteins
- 9/11/06 CH. 2 (p.43) : Vitamins, Minerals, & Water
- 9/13/06 CH. 3 (p.81) : Optimal Nutrition for Exercise
- 9/18/06 LAB #2: Nutrition – Performance Eating
- 9/20/06 CH. 28 (773) : Body Composition Assessment
CH. 29 (811) : Physique, Performance, and Physical Activity
- 9/25/06 CH. 30 (835) : Overweight, Obesity, and Weight Control
LAB #3 : Body Composition
- 9/27/06 **TEST #1: CH. 1-3, 28-30**
- 10/02/06 CH. 4 (113) : Energy Values of Food
CH. 5 (121) : Intro to Energy Transfer
- 10/04/06 CH. 6 (137) : Energy Transfer in the Body
CH. 7 (165) : Energy Transfer in Exercise
- 10/09/06 CH. 8 (183) : Measurement of Human Energy Expenditure
CH. 9 (195): Human Energy Expenditure During Rest and Physical Activity
- 10/11/06 CH. 10 (209) : Energy Expenditure During Walking, Jogging, Running, & Swimming
CH. 11 (229) : Individual Differences and Measurements of Energy Capacities
- 10/16/06 LAB #4 Energy Expenditure
- 10/18/06 **TEST #2: CH. 4-11**
- 10/23/06 CH. 12 (259) : Pulmonary Structure and Function
CH. 13 (277) : Gas Exchange and Transport
- 10/25/06 CH. 14 (293) : Dynamics of Pulmonary Ventilation
- 10/30/06 CH. 15 (313) : The Cardiovascular System
- 11/01/06 CH.16 (333) : Cardiovascular Regulation and Integration
CH. 17 (351) : Functional Capacity of the Cardiovascular System
- 11/06/06 LAB #5 Pulmonary and Cardiovascular Function

- 11/08/06** **TEST #3: CH.12-17**
- 11/13/06** **CH. 18 (365) : Skeletal Muscle: Structure & Function**
CH. 19 (391) : Neural Control of Human Movement
- 11/15/06** **CH. 20 (417) : The Endocrine System: Organization & Acute & Chronic Responses to Exercise**
- 11/20/06** **TEST #4: CH. 18-20**
- 11/22/06** **NO CLASS!!!**
- 11/27/06** **CH. 21 (469) : Training for Anaerobic and Aerobic Power**
CH. 22 (509) : Muscular Strength: Training Muscles to Become Stronger
- 11/29/06** **CH. 23 (555) : Special Aids to Exercise Training and Performance**
LAB #5: Aerobic and Anaerobic Training
- 12/04/06** **CH. 24 (617) : Exercise at medium and High Altitude**
CH. 25 (637) : Exercise and Thermal Stress
- 12/06/06** **CH. 31 (883) : Physical Activity, Health, and Aging**
CH. 32 (925) : Clinical Exercise Physiology for Cancer, Cardiovascular, and Pulmonary Rehabilitation
- 12/11/06** **STUDY DAY!**
- 12/13/06** **FINAL EXAM: CH. 21-25, and 31-32**