COURSE OUTLINE
Revised Spring 2008
APPLIED EXERCISE PHYSIOLOGY
HPE241

Credits: 3
Instructor: John Kalinowski, MS CSCS
Offices: MS147 & PE108 (Athletics Dept.)
E-mail: kalinowj@mccc.edu
Phone: 609-570-3675

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

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

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<th>Grade</th>
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<td>A</td>
<td>376-400</td>
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<td>A-</td>
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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:**

- [acsm.org](http://www.acsm.org) – American College of Sports Medicine
- [aahperd.org](http://www.aahperd.org) – American Alliance for Health, Physical Education, recreation & Dance
- [fitnessbusiness-pro.com](http://www.fitnessbusiness-pro.com)
- [healthpromotionjournal.com](http://www.healthpromotionjournal.com)
- [ihrsa.org](http://www.ihrsa.org) – International Health, Racquet, and Sports Clubs Association
- [isapa.org](http://www.isapa.org) – International Society for Aging and Physical Activity
- [jap.physiology.org](http://www.jap.physiology.org) – Journal of Applied Physiology
- [nsca-lift.org](http://www.nsca-lift.org) – National Strength and Conditioning Association
- [nasm.org](http://www.nasm.org) – National Academy for Sports Medicine
- [naspem.org](http://www.naspem.org) – North American Society for Pediatric Exercise Medicine
- [nata.org](http://www.nata.org) – National Athletic Training Association
- [physsportsmed.com](http://www.physportsmed.com) – The Physician and Sportsmedicine
- [specialolympics.org](http://www.specialolympics.org) – Special Olympics
- [sportsnutritionsociety.org](http://www.sportsnutritionsociety.org) – International Society for Sports Nutrition
- [ymca.com](http://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
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<tr>
<th>Date</th>
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<tr>
<td>8/28/06</td>
<td>Course Introduction and Course Requirements/Evaluation Criteria</td>
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<tr>
<td>8/30/06</td>
<td>CH. 1 (p.7) : Carbohydrates, Lipids, and Proteins</td>
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<tr>
<td>9/04/06</td>
<td>CH. 1 (p.7) : Carbohydrates, Lipids, and Proteins</td>
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<tr>
<td>9/06/06</td>
<td>LAB #1: Nutrition #1 – Carbohydrates, Lipids, and Proteins</td>
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<td>9/11/06</td>
<td>CH. 2 (p.43) : Vitamins, Minerals, &amp; Water</td>
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<tr>
<td>9/13/06</td>
<td>CH. 3 (p.81) : Optimal Nutrition for Exercise</td>
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<td>9/18/06</td>
<td>LAB #2: Nutrition – Performance Eating</td>
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<td>9/20/06</td>
<td>CH. 28 (773) : Body Composition Assessment</td>
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<td>CH. 29 (811) : Physique, Performance, and Physical Activity</td>
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<td>9/25/06</td>
<td>CH. 30 (835) : Overweight, Obesity, and Weight Control</td>
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<td>LAB #3 : Body Composition</td>
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<td>9/27/06</td>
<td><strong>TEST #1: CH. 1-3, 28-30</strong></td>
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<tr>
<td>10/02/06</td>
<td>CH. 4 (113) : Energy Values of Food</td>
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<td>CH. 5 (121) : Intro to Energy Transfer</td>
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<td>10/04/06</td>
<td>CH. 6 (137) : Energy Transfer in the Body</td>
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<td>CH. 7 (165) : Energy Transfer in Exercise</td>
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<td>10/09/06</td>
<td>CH. 8 (183) : Measurement of Human Energy Expenditure</td>
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<td>CH. 9 (195): Human Energy Expenditure During Rest and Physical Activity</td>
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<td>10/11/06</td>
<td>CH. 10 (209) : Energy Expenditure During Walking, Jogging, Running, &amp; Swimming</td>
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<td>CH. 11 (229) : Individual Differences and Measurements of Energy Capacities</td>
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<td>10/16/06</td>
<td>LAB #4 Energy Expenditure</td>
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<td><strong>10/18/06</strong></td>
<td><strong>TEST #2: CH. 4-11</strong></td>
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<td>10/23/06</td>
<td>CH. 12 (259) : Pulmonary Structure and Function</td>
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<td>CH. 13 (277) : Gas Exchange and Transport</td>
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<td>10/25/06</td>
<td>CH. 14 (293) : Dynamics of Pulmonary Ventilation</td>
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<td>10/30/06</td>
<td>CH. 15 (313) : The Cardiovascular System</td>
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<td>CH.16 (333) : Cardiovascular Regulation and Integration</td>
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<td>CH. 17 (351) : Functional Capacity of the Cardiovascular System</td>
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<tr>
<td>11/06/06</td>
<td>LAB #5 Pulmonary and Cardiovascular Function</td>
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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