Instructor: Bob Girandola, Ed.D.
Office Hours: T/W 11:00 AM – 12:00 PM, PED 109
Email: girandol@usc.edu
Telephone: (213) 740-6151

Lecture: 9:00-9:50 MWF (38411) WPH B27
9:30-10:50 T TH (38420) THH 102

Laboratory: (All in PED B16)
M: 9:00 AM – 10:50 AM
T: 10:00 AM - 11:50 AM, 12:00 PM - 1:50 PM, 2:00 PM - 3:50 PM,
   4:00 PM - 5:50 PM, 6:00 PM – 7:50 PM
Th,: 12:00 PM - 1:50 PM, 6:00 PM - 7:50 PM
F: 10:00 AM - 11:50 AM, 12:00 PM - 1:50 PM

Course Description:
This course will deal with the physiological and nutritional basis of human performance. It will be a combination of lecture and laboratory exercises to better help students understand the factors that facilitate and limit optimal performance. It is not a course aimed solely at elite students, but also the typical individual who has the desire to exercise and wishes to better understand that factors that are involved in exercise tolerance. Not available for major credit.

Recommended Text (Optional):
1) Physiology of Sport & Exercise by W.L.Kenney, J. Wilmore & D.L. Costill

Required Lab Manual:

I. Objectives:
A. To understand the physiological and nutritional factors that facilitate and limit optimal performance.
B. To gain knowledge in health, exercise and nutrition related issues for healthy life-style decisions.

II. Class Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Metabolism</td>
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<tr>
<td>2</td>
<td>Metabolism</td>
</tr>
<tr>
<td>3</td>
<td>Energy Demand</td>
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<tr>
<td>4</td>
<td>Energy Intake &amp; Weight Control</td>
</tr>
</tbody>
</table>
## Grading and Grading Scale:

1. First mid-term – 25% (after 5 weeks)
2. Second mid-term – 25% (after 10 weeks)
3. Final Exam – 25%
4. Laboratory Grade – 25%

*Exact Dates for first two exams will be announced in class.

**Grading Scale:** Each exam will be curved and assigned a letter grade based upon the following criteria:

- Average score = C
- Average score + 1 Standard Deviation (SD) = B
- Average score + 2 SD = A
- Average score – 1 SD = D
- Average score – 2 SD = F

## Course Make-up Policy:

IF a student has a legitimate excuse for missing one of those exams, a make-up exam in ESSAY format will be given at a mutual date determined by the instructor and student.

## Laboratory Component:

**Lab Director:** Emi Embler Ph.D. (eembler@usc.edu)

**Lab Instructors:**
Bara Floyd (gbfloyd@usc.edu)
# Tentative Lecture Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 13</td>
<td>Metabolism: The production of ATP. How do muscle cells convert Carbohydrates, Fats, and Proteins into useable energy (ATP)? – Glycolysis; Aerobic metabolism: Krebs Cycle and Cytochrome Chain</td>
<td>Intro + Ch 2</td>
</tr>
<tr>
<td>Jan 20</td>
<td>Energy Demands: The caloric cost of both rest and activity. Principles related to resting and basal metabolic rate (RMR and BMR) – Resting metabolic rate; Caloric cost of various activities; Individual variations. <strong>Monday, Jan. 20 is a University Holiday, MLK Day.</strong></td>
<td>Ch. 2,5</td>
</tr>
<tr>
<td>Jan 27</td>
<td>Energy Intake: Caloric cost of foods and beverages. Caloric cost of carbohydrates, fats, proteins, and alcohol; Concepts of caloric balance</td>
<td>Ch. 5,22</td>
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<tr>
<td>Feb 3</td>
<td>Weight Control: How does an individual gain or lose weight? Separating fact from fiction. Concepts of weight loss with dietary restriction and exercise; Myths of weight control, especially weight loss; Drugs and other substances used for weight loss; Concepts of weight gain. How does fat-free mass increase?</td>
<td>Ch. 15,22</td>
</tr>
<tr>
<td>Feb 10</td>
<td>Obesity: The etiology of obesity – How do people get fat?; Genetic verses environment; Trends in the U.S. and the world; Possible solutions</td>
<td>Ch. 22</td>
</tr>
<tr>
<td>Feb 12</td>
<td>Obesity: The etiology of obesity – How do people get fat?; Genetic verses environment; Trends in the U.S. and the world; Possible solutions. <strong>FIRST MIDTERM EXAM will most likely be this week.</strong></td>
<td>Ch. 15,22</td>
</tr>
<tr>
<td>Feb 17</td>
<td>Nutrition: For optimal health and for human performance – What is an ideal diet; The caloric nutrients: Fat, Carbohydrate, Protein; The non-caloric nutrients: Vitamins and Minerals; Dietary programs that effect human athletic performance; Nutrient supplements and ergogenic aids <strong>Monday Feb 17 is Presidents Day, University holiday.</strong></td>
<td>Ch. 15,16</td>
</tr>
<tr>
<td>Feb 24</td>
<td>Nutrition: For optimal health and for human performance – What is an ideal diet; The caloric nutrients: Fat, Carbohydrate, Protein; The non-caloric nutrients: Vitamins and Minerals; Dietary programs that effect human athletic performance; Nutrient supplements and ergogenic aids</td>
<td>Ch. 15,16</td>
</tr>
<tr>
<td>Mar 2</td>
<td>Pulmonary system as it is affected by exercise – Anatomy of the system; Lung volumes; Ventilation; Gas exchange; Hemoglobin</td>
<td>Ch. 7,8</td>
</tr>
<tr>
<td>Mar 9</td>
<td>The Cardiovascular system as it is affected by exercise – Discussion of the heart, blood vessels and blood; Cardiovascular dynamics during rest and exercise; The cardiovascular system as a limiting factor in aerobic exercise; Cardiovascular benefits of exercise: coronary heart disease</td>
<td>Ch. 6,8</td>
</tr>
<tr>
<td>Mar 16</td>
<td><strong>SPRING BREAK Spring break is March 16-20</strong></td>
<td></td>
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<tr>
<td>Mar 23</td>
<td>The Cardiovascular system as it is affected by exercise – Discussion of the heart, blood vessels and blood; Cardiovascular dynamics during rest and exercise; The cardiovascular system as a limiting factor in aerobic exercise; Cardiovascular benefits of exercise: coronary heart disease. <strong>SECOND</strong></td>
<td>Ch. 6,8</td>
</tr>
</tbody>
</table>
### MIDTERM EXAM This week!

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 30</td>
<td>Oxygen consumption during exercise of various intensities – The use of oxygen consumption (VO₂) to determine metabolic cost, intensity, and type of fuel; The concept of VO₂ Max to determine athletic potential and the effects of training; The lactate threshold as an indicator of endurance potential or anaerobic power</td>
<td>Ch. 11</td>
</tr>
<tr>
<td>Apr 6</td>
<td>Oxygen consumption during exercise of various intensities – The use of oxygen consumption (VO₂) to determine metabolic cost, intensity, and type of fuel; The concept of VO₂ Max to determine athletic potential and the effects of training; The lactate threshold as an indicator of endurance potential or anaerobic power</td>
<td>Ch. 11</td>
</tr>
<tr>
<td>Apr 13</td>
<td>Environmental Physiology</td>
<td>Ch 12,13</td>
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<tr>
<td>Apr 20- May 1</td>
<td>The environment and its effect on human performance – Exercise at altitude; Exercise in a hot environment; Exercise in a cold environment; Exercise and air pollution. Classes end May 1</td>
<td>Ch. 12,13</td>
</tr>
<tr>
<td>May 3- 10</td>
<td><strong>FINAL EXAM</strong> dates: Section 38411 (MWF 9:00 AM) – Friday, May 8, 8:00 AM – 10:00 AM Section 38420 (T Th 9:30 AM) – Tuesday, May 12, 8:00 AM – 10:00 AM</td>
<td></td>
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### Statement on Academic Conduct and Support Systems

**Academic Conduct:**

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

**Support Systems:**

* Counseling and Mental Health - (213) 740-9355 – 24/7 on call studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

* National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

* Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

* Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298 equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of
protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

**Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298**
[usc-advocate.symplicity.com/care_report](http://usc-advocate.symplicity.com/care_report)

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

**The Office of Disability Services and Programs - (213) 740-0776**
[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

**USC Campus Support and Intervention - (213) 821-4710**
[campussupport.usc.edu](http://campussupport.usc.edu)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

**Diversity at USC - (213) 740-2101**
[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

**USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call**
[dps.usc.edu, emergency.usc.edu](http://dps.usc.edu, emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

**USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call**
[dps.usc.edu](http://dps.usc.edu)

Non-emergency assistance or information.

**Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)**
[ombuds.usc.edu](http://ombuds.usc.edu)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.