College of Charleston

FYSE 119: Run for the Roses: Sport Physiology and the Kentucky Derby Festival Marathon

Spring 2015

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Welcome. This is the 8th year I will be teaching the Sports Physiology and Marathon Training course. I taught the class five times while a professor at Purdue and this is the third version of the class at the College of Charleston. This is the first time the course is being offered as a freshman seminar.

The class has been the most interesting, unique, and exciting course I have ever taught, but I owe most of that to the students who have participated. I feel quite fortunate to be able to teach this course and I am thrilled that there is so much interest and enthusiasm from you the students. I hope that my enthusiasm is transferred to my demeanor in the classroom.

This course allows me to combine my expertise in sport physiology with my enthusiasm for fitness and for distance running. This will be a fun and exciting course, but you need to understand that it is a “real” class with evaluations and expectations (beyond those of training for a marathon). The primary goals of the course are to teach sport physiology and help you fulfill your dream of running a marathon. I should also point out that this has traditionally been a great course because of the quality students who enroll and the dedication and enthusiasm they bring to the class. People run for different reasons. People want to run a marathon for different reasons…

Course meeting: T 3:05-4:20. Lecture then lab. Training or lab sessions on T-R; Training homework required each week, e.g., long run and three other training sessions.

Prerequisite: Willingness to learn the exercise physiology concepts and to do what it takes to prepare for the Derby Festival marathon.

Course Objectives: The purpose of this course is to provide students with a working knowledge of sports physiology topics that will include: muscle physiology, energy systems, physiological responses and adaptations to training and overtraining, sports nutrition, psychology of marathon running, environmental adaptations to training, efficacy of ergogenic aids and training principles. The class will also provide the unique
opportunity to apply these principles in a laboratory setting by performing standard physiological tests and by training for a competitive marathon.

**Textbook**

Required Text: none

Several readings will be provided on OAKS. You are expected to read the available material prior to coming to class. Announced and unannounced quizzes will be used to check your understanding of the reading material.

Recommended Text:


(Other readings as assigned)

**Equipment**

Required:

Quality running shoes
Cold weather gear—including hat or ear-band, gloves or mittens, wind pants/tights and jacket. Must be worn when appropriate. Be prepared to run in any weather conditions. You will not be excused for being unprepared.

Optional gear: optional face shield; reflective material on outer wear—for night running outside of class time.

**Evaluation and course Requirements**

The Marathon-15%

Exam 1- 20% (February 17)

Exam 2- 20% (April 9)

Problem-Based Learning 15%

Lab 20%

Quizzes/bonus/extra credit 10%

Optional Activity—Fundraiser

Optional Activity—T-Shirt Design
FYSE Objectives

Campus Resources

- Identify and use the appropriate academic resources and student support services at College of Charleston. These would include the Addleston library, information technology, the Center for Student Learning, the Career Center, and other appropriate academic resources, student support services, and cultural resources.

Information Literacy

- Use appropriate tools and search strategies for identifying particular types of information specific to the discipline
- Evaluate the relevance, quality, and appropriateness of different sources of information
- Recognize and classify the information contained within a bibliographic citation
- Access and use information ethically and legally

Integrative Learning

- Use appropriate critical thinking skills and problem-solving techniques in appropriate disciplinary contexts
- Make connections across disciplines and/or relevant experiences

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93+</td>
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<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89%</td>
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<tr>
<td>B</td>
<td>84-86</td>
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<tr>
<td>B-</td>
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<tr>
<td>D-</td>
<td>60-63</td>
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<tr>
<td>F</td>
<td>&lt;60</td>
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Make up policy

Quizzes cannot be made up for any reason. If you are late for class, you will not receive extra time for the quiz. Quizzes may be announced one week in advance or could be unannounced.

Exams- Make up exams will be allowed for students with university-approved excuses, but make-up exams will be more difficult than the regular exam.

If you miss a class you are responsible for getting the material from another student. The instructor will not provide handouts or lecture information for those who are absent.

Attendance- Attendance will be taken daily. If you are late, you will be marked absent.
Students are expected to attend class. If you miss more than four classes you will be assigned a WA. **No excuses will be accepted for absences;** however, if you have a documented illness or death in the family you should meet with me to discuss.

**Policies**

**College of Charleston Student Handbook:** This is a guide to your responsibilities and rights as a student. If you are not familiar with this document, please take the time to review the information contained within the handbook. [www.cofc.edu/studentaffairs/general_info/studenthandbook.html](http://www.cofc.edu/studentaffairs/general_info/studenthandbook.html).

**Academic Honesty** - Please refer to the current College of Charleston Student Handbook for the definition of academic dishonesty and the subsequent penalties. Faculty members are required to report violations of the Honor Code to the Office of Student Affairs. If you are found guilty of an honor code violation your grade in the class will be XF and will be so indicated on your transcript. Students at College of Charleston are expected to be at all times in compliance with the Honor Code. Scholastic dishonesty will not be tolerated in this course. Examples of cheating include giving or receiving aid during examinations, using any type of crib sheet, copying from or looking to another exam, or submitting another’s work as your own.

**Classroom Behavior** - Students at the College of Charleston are expected to be at all times in compliance with the Honor Code. Failure to abide with this code will not be tolerated in this course. Examples of inappropriate classroom behavior include behaviors that disrupt instruction by the professor and/or learning of classmates and behaviors that threaten, harass, or discriminate against others. Students who engage in inappropriate classroom behavior will be asked to leave the classroom, will receive no credit for attendance and in-class activities for that day, and must meet with the instructor prior to returning to the next class meeting. Severe cases of inappropriate behavior will be referred to the Dean of Students for appropriate disciplinary action.

**Electronic Device Policy** - Laptops are not allowed during lecture. Laptops and phones may be allowed at selected times to search for pertinent information. Please set phones to silent and switch off all other electronic devices during class. Calculators will be allowed during class and tests, but only **non-programmable calculators** will be allowed during tests (please purchase an inexpensive calculator for this purpose). You may not use your cell phone as a calculator.

**Disability** - In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to “reasonable accommodations.” Please notify the instructor during the first week of class of any accommodations needed for the course.

**Exams** - The exams will test content knowledge from the lectures and will be multiple choice and short answer format. A short quiz will be given prior to the first exam to provide an example of the information that is deemed pertinent and the types of questions that may be asked on the exams.

**Problem Based Learning** - Students will be assigned a problem that involves an issue or controversy surrounding marathon running. Students will be given time in class to
conduct research on the problem, required to devote some time in the library, and will write a short paper that specifically addresses the nature of the problem. The paper must include references and other source material. A detailed rubric will be posted on OAKS well in advance of the due date (April 16). The **assignment should be posted as a pdf in the OAKS drop box before midnight on the due date.**

**Labs**- Students will be responsible for maintaining a detailed training log, records of injury and illness, and indices of training stress. Successful completion of these forms will count for 8 (out of 20) points of the lab grade.

There will also be physiological tests conducted during the semester. There will be at least two lab demonstrations and write up. The write ups will count toward the other 12 points of the lab grade. Details for each report will be provided when the lab is assigned, but generally speaking the lab reports will involve the manipulation/interpretation of the data gathered, application of the data to training/performance, and answering questions related to the lab experience. There will be several other lab experiences that do not require “write ups” and lab days will frequently allow students time to train. Your grade for this portion of the lab will be as follows:

**Marathon**- You will NOT be graded on how fast you run the marathon. You will be “graded” for doing the things required to get you to the starting line, e.g., registering for the race (**must provide proof of registration for the Derby Festival marathon by February 17, 2015**), completing requisite training, traveling to Louisville, KY, etc. Your instructor understands that there are several things that could prevent you from running the full marathon, but poor scheduling or other commitments will not be a valid excuse for not being in Louisville.

YOU ARE EXPECTED TO BE IN Louisville EVEN IF YOU CANNOT RUN THE RACE (0 points for the “marathon grade” if you are not in attendance). You can provide support for your classmates and get some of the marathon experience even if you are unable to run. If you cannot be in Louisville, you will be asked to drop or withdraw from the course. There may be some students who “drop back” to the ½ marathon. Once again, permission to drop back to a ½ marathon will not be granted because you are unable to dedicate the time to your training. An example of a valid reason to drop back to the ½ marathon would be a documented injury. In short, I am asking each student in class to commit to preparing for a full marathon. **If you are unable to make this commitment, I suggest that you drop the course.**


If you are unable to keep up with the training schedule (miss 4 training sessions), fail to attend the required number of long run sessions, your attendance is poor, or your are unable or unwilling to complete or comply with any of the required aspects of the course (e.g., race registration, wearing appropriate cold weather gear) you will be asked to drop or withdraw from the course.

**Fundraiser**- Details to follow.
T-shirt design—Details to follow.

“Team building events”—FYSE will provide funds for social events. Attendance is optional.

Training Days—There will be an opportunity for you to meet up and train with a group each week for the “long” runs. Training can be easier when done with a speed-compatible training partner. You are not required to attend all of these sessions. You are required to document at least four long training runs: one each in January, February, March, and April. This will be part of the marathon grade. There will be opportunities each week (TBA) for you to document a long run with your instructor or a squad leader. You do not have to run at the same pace as your instructor or squad leader, simply arrive at the designated time, agree on a route, and complete your required distance.

In addition, each student is required to complete at least one road race during the semester. There will be optional group opportunities to help you accomplish this. Please turn in a copy of your registration and your finish time for a 5 km, 10 km, or 13.1 km race completed between Jan 8 and April 15.

Tentative Class Schedule

<table>
<thead>
<tr>
<th>Date/week</th>
<th>Topic(s)</th>
<th>Reading (Chapter)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/13</td>
<td>Intro</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lab: Ratings of Perceived Exertion/Training Run</td>
<td></td>
</tr>
<tr>
<td>1/15</td>
<td>Intro (cont.) and the Training Program</td>
<td></td>
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**Week 2**

1/20 Sports Nutrition for the Marathon
| Lab: Medical History, Runner Info Form, Pre-test | |

1/22 Sports Nutrition
| Lab: Training Run | |

**Week 3**

1/27 Sports Nutrition Admin Day, Q and A
| Lab: Training Run | |
1/29  Marathon Panel  
Lab: Lactate Run

**Week 4**

2/3  Sports Performance Testing  
Lab: Training Run

2/5  Muscle Physiology  
Lab: Training Run

**Week 5**

2/10  Muscle Physiology  
Lab: Measurement of $\text{VO}_2\text{max}$

2/12 Muscle Fiber Types and Performance/Muscle Adaptation to Training  
Lab: Measurement of $\text{VO}_2\text{max}$

**Week 6**

2/17  Exam 1  
Lab: Body Composition

2/19  Energy Systems for Distance Running-Carbohydrates and Fats as Fuels  
Lab: Training Run

**Week 7**

2/24  Cardiorespiratory System  
Lab: Exam 1

2/26  Cardiorespiratory Adaptations to Training  
Lab: Training Run

**Week 8**

3/3  Spring Break-Need to do at least two training runs

3/5  Spring Break

**Week 9**

3/10  Monitoring Training and Physiological Tests/ Training and periodization  
Lab: Lactate Threshold
3/12  Overtraining Syndrome  
Lab: Training Run

**Week 10**

3/17  Cross Training and Distance Running  
Lab: Training Run

3/19  Distance Running and Immune System  
Lab: Training Run

**Week 11**

3/24  Marathon History  
Lab: Training run

3/26  Marathon History  
Lab: Training run

**Week 12**

3/31  Preparing to Run in Environmental Extremes  
Lab: Training Run

4/2  Problem Based Learning: In class research  
Lab: Thermal responses to exercise in the heat

**Week 13**

4/7  Getting More From Less—Reduced Training and Tapering.  
Lab: Training Run

4/9  **Exam 2**  
Lab: Training Run

**Week 14**

4/14  Guest Lecture  
Lab: Training Run with guests

4/16  Nutrition Specifics  
Lab: CHO and H₂O loading Tips

**Week 15**

4/21  The crowning touch—getting the most out of your marathon training.  
Lab: Training run
4/23  Nutrition Specifics, Last Minute planning
     Lab: Training

4/24 Travel to Louisville, KY
4/25 Derby Festival Marathon
4/26 Return to Charleston

**Other important dates:**
2/17: Proof of registration for Derby Festival Marathon*  

3/26: Fund Raiser complete

**Due to circumstances that may arise during the semester, this schedule is subject to change at the discretion of the instructor.**