

SYLLABUS FOR KINE 7680
ADVANCED PHYSIOLOGY OF EXERCISE I
 Fall, 2010

Course Instructor: L. Bruce Gladden – 844-1466; gladdlb@auburn.edu.

Office Hours: M and W – 8:00 – 9:00 am, Coliseum 2129

Meeting Place and Time: Coliseum 2040 at 2:00-3:15 pm MW.

Textbook: Exercise Physiology: Theory and Application to Fitness and Performance, Sixth Edition, by Scott K. Powers and Edward T. Howley, McGraw-Hill, New York, 2007.

ISBN-10: 0073376477

ISBN-13: 978-0073376479

This is a Graduate School course. Therefore, much material will be taken for granted as baseline knowledge. **If you feel that your background in the sciences and physiology is less than you would prefer, it is your responsibility to work even harder to compensate for any deficiencies you may have.** This course is a graduate survey course in Exercise Physiology. Therefore, we will cover a broad range of the field of Exercise Physiology. The course format will be lecture plus question and answer. Please ask questions! I will ask questions of you.

It is imperative that you come to class prepared to discuss the topic of the day. In order to derive optimal benefits from our discussions, previous knowledge of the topic is required. Therefore, all students are expected to read all assignments prior to class. You will be asked to provide evidence that you are already familiar with the readings.

GRADING

1. There will be two examinations, a Midterm and a Final, each about 2.5 hours in length and each worth 100 points, for a total of 200 points; **these exams will be given outside of scheduled class time.**
2. There will be two quizzes, each about 75 minutes in length. Each quiz is worth 50 points for a total of 100 points.
3. There will be four surprise quizzes, each about 10-15 minutes in length. Each surprise quiz is worth 10 points for a total of 40 points.
4. There will be **at least one** assignment for a total of 30 points.

88.00% or greater	=	A
79.00%-87.99%	=	B
70.00%-78.99%	=	C
60.00%-69.99%	=	D
less than 60.00%	=	F

Curving – DO NOT request that grades be adjusted (curved); the grading scheme above is based on over 30 years of teaching this class.

Extra Credit – There is no scheduled extra credit in this class; there is only credit. Should “extra” credit opportunities arise, they will be offered to all students in the class.

Class Policy Statements:

There will be unannounced quizzes in this class.

Although roll will not be taken specifically, “taking this class” means attending all meetings of the class. Please refer to the current edition of the Tiger Cub (<http://www.auburn.edu/tigercub>) for the definition of excused absences.

Accommodations:

Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with the office hours, an alternate time can be arranged. To set up this meeting, please contact me by E-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with The Program for Students with Disabilities, 1244 Haley Center, 844-2096 (V/TT).

Honesty Code – The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

Professionalism – As faculty, staff, and students interact in educational settings, they are expected to demonstrate professional behaviors as defined in the College of Education’s conceptual framework. These professional commitments or dispositions are as follows: 1) engage in responsible and ethical practices, 2) contribute to collaborative learning communities, 3) demonstrate a commitment to diversity, and 4) model and nurture intellectual vitality.

KINE 7680 Course Outline:

The course outline that follows is a baseline schedule. It is subject to change. This allows flexibility in dealing with different topics. For example, if more discussion arises on a particular subject or set of papers, it may take longer to cover it. In other cases, less time may be required. You will be informed regularly and promptly of any changes.

Please note that research and travel may take me away for several classes. In those cases, I hope to make up the missed classes by meeting for extra time or extra days as agreed upon by the class.

- Week 1: History of exercise physiology, homeostasis and steady state, Chapters 1 and 2.
- Week 2: Biochemistry of Exercise: Overview and glycolytic pathway - Chapter 3
- Week 3: Biochemistry of Exercise: TCA cycle, electron transport chain - Chapter 3
- Week 4: Biochemistry of Exercise: lipid metabolism, control of reactions, and summary.
- Week 4: Metabolic Rate Calculations: VO_2 , VCO_2 , RER, RQ, Appendix A and Hand-outs.
- Week 5: Metabolic Rate Calculations: VO_2 , VCO_2 , RER, RQ, continued. Appendix A and Hand-outs.

- Week 6: Whole Body Exercise Response: O_2 deficit, O_2 Debt. EPOC – Chapter 4.
 Week 7: Whole Body Exercise Response: VO_2 and lactate response to progressive incremental exercise. deficit, lactate threshold – Chapter 4.
 Week 8: Whole Body Exercise Response: Fuel selection and utilization during exercise, effects of intensity and duration – Chapter 4.
 Week 9: Measurement of work and power, estimation of VO_2 for walking, running, cycle ergometry – Chapter 6.
 Week 10: Efficiency and economy – Chapter 6.
 Week 11: VO_{2max} predictions – Chapter 15.
 Week 12: Laboratory tests of performance – Chapter 20.
 Week 13: Skeletal muscle – Chapter 8.
 Week 14: Skeletal muscle – Chapter 8.
 Week 15: Skeletal muscle – Chapter 8.

M Sep 6 **Labor Day Holiday**

W Oct 22 **Gladden away at Integrative Physiology of Exercise meeting.**

MW Nov 22 and 24 - **THANKSGIVING HOLIDAYS.**

TENTATIVE TESTING SCHEDULE

M Sep 13 **QUIZ #1.**

MIDTERM – 2.5 hour time limit. To be scheduled during October 7-8.

M Nov 8 **QUIZ #2.**

M Dec 6 **FINAL EXAM** – 4:00 to 6:30 pm.