HP/W 312 Exercise Physiology – Spring 2017

School of Health Promotion and Human Development
University of Wisconsin – Stevens Point

Lecture: Monday & Wednesday - 9:00 - 9:50 am; Location: CCC 213

Labs: (#1) Mon 10:00-11:50 am, (#2) Wed 10:00-11:50 am, (#3) Mon 1:00-2:50 pm, (#4) Tue 1:00-2:50 pm, (#5) Wed 1:30-3:20 pm. All labs meet in HEC 033.

A. INSTRUCTOR INFORMATION:

Instructors:	Thomas Wetter, Ph.D.	Tiffany Akins, Ph.D.
Office:	CPS 224	CPS 238A
Phone:	346-3659	346- 4414
Email:	twetter@uwsp.edu	takins@uwsp.edu
Office hours:	T 9:00-10:30 & R 10:00-11:30 and by apt	R 1:00-3:00 & F 9:00-10:00 review session and by appt

B. REQUIRED TEXT and MATERIALS:

⇒ Exercise Physiology, Theory and Application to Fitness and Performance, Powers and Howley, 8th ed., 2012. (rental)

⇒ An additional resource which may be helpful for studying is the Online Learning Center www.mhhe.com/powers8e

More resources will be placed into D2L.

C. COURSE DESCRIPTION:

This class will cover the physiological mechanisms involved in the acute response to exercise, in particular, the muscular, circulatory, respiratory, and endocrine systems and chronic **adaptations to training** for each. The health benefits of physical activity, the relationship between exercise and weight loss/maintenance, aerobic and muscular strength prescription, and the role of nutrition, age, gender and environmental factors will also be discussed. It is important for Athletic Trainers, Dieticians, and Health Science and Promotion professionals have a full understanding of the human body and its mechanisms of response to exercise.

D. GRADES:

2 In Class Exams and Final Cumulative Exam	400 points	(120 pts in class/ 160 final)
Lab Attendance and Reports	200 points	(20 pts each lab)
10 D2L Quizzes (outside of class)	100 points	(10 pts each)
	700 points	

A = 651-700 **A-** = 630-650 **B+** = 609-629 **B** = 581-608 **B-** = 560-580 **C+** = 539-559 **C** = 511-538
C- = 490-510 **D+** = 469-489 D = 420-468 **F** = 419 and below

(This works out to cutoffs for A-=90%; B-=80%; C-=70% and D=60%)

Please see us if you are having any difficulties in class. If you are not available during office hours, please set up an appointment time outside of those hours. We are more than happy to meet with students. If you need help, please ask!

E. READING AND PARTICIPATION:

- Participating in lecture and labs is an important aspect of this class! Each student brings a unique personality and life experience, so sharing and quality critical thinking make the class much more enjoyable. Students who participate in class and in lab generally do better than those who do not. At the end of the semester we may award bonus points to the top participators. Ways to participate include asking and answering questions, bringing in news articles or experiences that are relevant to the topic being discussed, and serving as a subject in labs.
- Assigned reading material from the text (or accessory material) is required! Optimally, you should do assigned readings prior to covering the material in class. Some exam questions will be drawn directly from the text. Therefore, reading the text will be essential in obtaining a high grade in the class.

F. ATTENDANCE:

- Attendance for **lecture** is expected and **is strongly recommended. You cannot obtain bonus points for in class work if you are not in class that day. There are no exceptions or make-ups for these points.** Students who attend lecture typically score higher on exams as well. Attendance and participation is **required for laboratory sessions.** Due to the nature of these labs they cannot be made up. If a conflict arises where you know you will miss your lab, you may be able to attend another lab section but only with **prior** permission. If you are absent, you will lose credit for work that is missed.
- What **NOT** to do if you miss lecture: Do not ask us "Did I miss anything important?" Do not come to office hours and expect a private lecture covering missed material.
- What **TO** do if you miss lecture: Make a friend of a classmate early in the semester. Have that person give you the notes and any other important information from the class. If after you have reviewed the notes and read your book to fill you in on the missed material, you still have questions; by all means make an appointment to come and talk to one of us.

G. HANDOUTS:

- Power Point presentations or lecture outlines, handouts, extra reading material, and assignments, will be placed in D2L. Occasionally we may hand out material in class or lab, if you miss that day get the material from another student.

H. DISABILITIES and RELIGIOUS BELIEFS:

- Students with disabilities should contact the Office of Disability Services during the first two weeks of the semester if they wish to receive accommodation.
- Religious beliefs will be accommodated according to UWS 22.03 as long as you notify me within the first three weeks of the beginning of classes of the specific date(s) you request relief from an examination or academic requirement

I. ACADEMIC CONDUCT:

This course is part of the UW-Stevens Point academic community, an academic community that is bound together by the traditions and practice of scholarship. Honest intellectual work – on examinations and on written assignments is essential to the success of this community of scholars. Using classmates' responses to answer exam questions or disguising words written by others as your own undermines the trust and respect on which our course depends. The work in this course is challenging and will demand a good deal from each of you. I have every confidence that each of you can succeed. Doing your own work will enhance your sense of accomplishment when the semester comes to a close.

Additionally, the classroom environment is a unique opportunity for students to share ideas, opinions, discuss classroom and course content. As each student is entitled to contribute in class, specific expectations are necessary to ensure a thriving classroom environment. Expectations include: arriving to class on time, being prepared for class, and keeping cell phones silenced or turned off and put away. Behaviors such as loud shouting, excessive side conversations, arriving to class under the influence of any alcohol or drugs, profane language, and verbal or physical threats, intimidation of any kind, or any other behavior that may be disruptive to the instructor or other students are considered unacceptable. If any of this behavior is exhibited, you may be asked to leave the class for the day. Any continued disruptive behavior may result in a referral to the Dean of Students Office.

For additional information, please refer to the statements on Academic Standards as outlined by the Office of Student Rights and Responsibilities. You can read the full text of Chapter 14 on "Student Academic Standards & Disciplinary Procedures" at http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf

TENTATIVE COURSE SCHEDULE

DATE	TOPIC	BOOK CHAPTER
	(It helps to read the material prior to class lectures)	
Jan 23	Introduction: What are we going to learn about; how and why	--
25	The history and future of the field	0
30	Applying research to exercise and sport **(D2L Quiz #1 Due Feb1)**	--
Feb 1	Control Systems, Energy Metabolism	2, 3
6	Energy Metabolism **(D2L Quiz #2 Due Feb 8)**	3
8	Energy Metabolism	3, 4
13	Energy Metabolism **(D2L Quiz #3 Due Feb 15)**	4
15	Skeletal muscle and nerves	7, 8
20	Skeletal muscle and nerves **(D2L Quiz #4 Feb 22)**	7, 8
22	Muscle fiber type and health	7, 8
27	Exam #1	
Mar 1	Cardiovascular System	9
6	Cardiovascular System	9
8	Cardiovascular System **(D2L Quiz #5 Due Mar 13)**	9
13	Respiratory System	10
15	Respiratory System	10
20, 22	Spring Break	
27	Acid Base Balance/Altitude **(D2L Quiz #6 Due Mar 29)**	11, 24
29	Hormone response to Exercise/immune function and exercise	5, 6
Apr 3	Temperature Regulation: exercise in heat/cold **(D2L Quiz #7 Due Apr 5)**	12, 24
5	Catch up	
10	Exam #2	
12	Adaptations to Exercise Training	13
17	Body Composition and Health/Performance	18, p.535-6
19	Physical Activity and Weight Loss/Gain **(D2L Quiz #8 Due Apr 24)**	18
24	Health Benefits of Physical Activity	14
26	Aerobic Exercise Prescription **(D2L Quiz #9 Due May 1)**	16, 21
May 1	Resistance Training Prescription	16, 21
3	Nutrition and Ergogenic Aids **(D2L Quiz #10 Due May 8)**	23, 25
8	Special Populations: Females, Children, and Older Adults	22, 17
10	Catch up or special topic	
15	Final Exam Monday May 15, 12:30 -2:30	

Tentative Lab Schedule

WEEK	LAB	TOPIC	BOOK CHAPTER
Jan. 23	----------	**No LAB** ----------	
Jan. 30	# 1	Introduction, Reports, Graphing (**bring laptop if have one**)	In Lab
Feb. 6	# 2	Safety, Ergometry	1
Feb. 13	# 3	Metabolism and Fuel Use	4
Feb. 20	# 4	Anaerobic Power	20
Feb. 27	----------	**No LAB** ----------	
Mar. 6	# 5	Electrocardiogram, Circulation, and Blood Pressure	9
Mar. 13	# 6	Resting Lung Volumes and Exercise Ventilation	10
Mar 20	----------	**No LAB- Spring Break** ----------	
Mar. 27	# 7	Predict Maximal Oxygen Consumption	15 & 20
Apr. 3	# 8	Maximal Oxygen Consumption (VO_2max)	15 & 20
Apr. 10	# 9	Body Composition Testing	18 & 23
Apr. 17	----------	**No LAB** ----------	
Apr. 24	#10	Strength and Flexibility Testing	20
May 1	# 11	Measurement of Daily Physical Activity	In Lab
May 8	----------	**No LAB – Time to prepare for finals** ----------	

Labs: Each lab is designed to afford the student hands on experience of observation of techniques used in the discipline of exercise physiology. They will also aid in supplementing the lecture in class. It is advisable to read the appropriate lab handouts and chapters prior to the lab.

Lab Attendance: Attendance Is Mandatory! **If you miss lab you will receive 0 points for that week's lab report.** If a conflict arises with your regular scheduled lab time you are responsible for contacting me (via e-mail) **prior** to missing your lab and arranging your schedule to attend one of the other lab times for the week.

Lab Times: Mondays 10:00-11:50am; and 1:00-2:50pm
Tuesday 1:00-2:50pm
Wednesdays 10:00-11:50am; and 1:30-3:20pm

Lab Participation: Many labs will require that each person be a subject (you will be performing cycling exercises, body composition measurements, strength tests, etc.). By completing these tests yourself, you can better understand the testing limitations and advantages, then simply reading about it. Your own personal fitness is unimportant. You will be sharing personal information such as age, weight, and height with others in the class. If you have any concerns about this, talk to me ahead of time.

Lab Attire: Be dressed for physical activity during each laboratory session. Those not prepared to participate in lab will receive no points for that lab. Those physically unable to participate should notify me at the beginning of the semester, or as soon as possible.

Lab Reports: Due dates are at the beginning of the next lab session or a specified date if lab is not meeting the following week. These will be turned in via D2L. **All reports must be typed, and showing calculations is required for full credit.** Use of Microsoft Excel is required for all graphing. Your lowest lab report grade will be dropped, however a score of a 0 for missing a lab does not qualify for dropping. Thus, your lab contribution for your final grade will be made of your top 10 lab scores.

Lab Rules

* NO food or Drink (except water) allowed in the lab.

*Please leave the room as you found it.

*If you use any lab equipment or supplies, please clean and return them to their appropriate location before you leave.

QUIZZES: Ten, ten-point quizzes will be administered over D2L this semester. Due dates are listed in the syllabus; and quizzes are due **11:59 pm** on that day specified. These are **individual quizzes**, meaning you will submit your own thoughts and work. These are also typically a way for students who tend not to do as well on exams, to raise their grade.

There are several different questions for each quiz. D2L will randomly select which questions you receive; therefore, you will each receive different questions. Once you complete a page of a quiz, you will not be able to go back and change answers.

Any changes to Quiz dates will be announced in class. Late quiz submissions are not available, no exceptions, plan ahead!

EXTRA CREDIT POINTS. There *may* be an opportunity to receive additional points by participating in activities (selectd by us) that will occur outside of class. We will announce these in class and they will be made availiable on a first come first serve basis (one advantage to sitting in the front of class). If your outside of class time is limited and you cannot participate in any of these opportunities, we are sorry but will not make special accomodations. The total number of extra credit points you may receive is limited to **20**.

BONUS POINTS. A small number of bonus points *may* be awarded at the end of the semester to the students who participate in class and in lab the most. These will be awarded at the discretion of the instructors.

LEARNING OBJECTIVES: Upon completion of the course, each student will

1) Demonstrate knowledge of Exercise Physiology. Specific Learning Objectives for the lecture material in class are listed at the beginning of each required chapter in the text.
2) Be aware of current issues in Fitness and Exercise Physiology and critically analyze and discuss them.
3) Be able to distinguish between reputable and suspect sources for information about health and fitness.
4) Be able to graph data accurately using Excel.
5) Demonstrate proficiency and knowledge of specific exercise physiology laboratory techniques including ergometry, muscular strength and anaerobic capacity testing, electrocardiography, blood pressure, lung volumes and exercise ventilation, body composition, submax and maximal VO2 testing, and flexibility.
6) Be able to dispel expel myths surrounding exercise by using knowledge of scientific principles and mechanisms.
7) Demonstrate and ability to work in small groups and present findings and discussion to a larger audience.
8) Be able to develop an individualized, scientifically sound aerobic and resistance training program for sedentary and active people.
9) Diversity learning objective: Discuss how genes, race, culture, gender, environment, socioeconomic status, etc influence exercise performance. Discuss how these factors may impact the ability, access and importance of health behaviors like exercise. Examine the range of physiologic difference (as related to exercise) between groups as

compared to within groups.

CONTRACT:
By enrolling in this course, you agree to the following rules:

1) Be respectful of other people in class. (not carrying on private conversations in class, participating in group discussions, etc)
2) Come dressed and ready for participation in each lab. Many of the labs involve exercise or the making of physical measurements. Each person, unless they notify me ahead of time and have a valid excuse, must come to lab prepared to be a subject. In most labs, everyone will participate. In a few labs, subjects may volunteer or be chosen at random.
3) You also agree to the late policy (-10% of points/day). If you forget to do or bring in a lab, you will turn it in when you can and accept the late policy.
4) Complete the D2L quizzes on your own.
5) Let the professor know when you don't understand something, have a different opinion, have additional material to add to the lectures, or can suggest ways that would improve the learning experience for yourself or others.
6) Take responsibility for your own learning and have fun.