EXSC 485 001 Exercise Physiology II and Lab
Spring 2012
Exercise Physiology II and Laboratory (4 credit hours)
Lecture: Mondays and Fridays, 11:00 a.m. to 12:15 p.m.
Laboratory: Wednesday 11 a.m. to 12:50 p.m..
Lois Rhame West Center Room 221, Room 118 Mary Roland Griffin Laboratory

Instructor:
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Office hours: Office hours: Mon and Wed: 1:00 to 2:00 p.m., Tues: 12:30 to 2:00 p.m., Thurs 10:00 a.m. to 11 a.m., Fri. by appointment. Other times available by appointment.

Catalog Description/Goals:
A study of general principles and causes of disease and resultant abnormal physiological function of organ systems. Included are discussions on stress, cardiovascular, nervous, respiratory, endocrine, and musculoskeletal dysfunction. Prerequisites: BIOL 308, PHED 384/385.

Assessment of Learning Outcomes and Performance Assessments:

Course Objective	Performance Assessment
Investigate causes of disease and resultant abnormal physiological function of organ systems	Quizzes, exams
Examine the impact of exercise on organ systems	Quizzes, exams, laboratory reports, lab skills practical
Explore the interaction of various organ systems in relationship to physiological function	Quizzes, exams, laboratory reports, lab skills practical
Synthesize current research in physiology using APA writing style.	Article review rubric, laboratory reports
Develop research projects to describe exercise and physiological function	Exams, laboratory reports
Gain further practical experience in laboratory-based exercise testing related to abnormal physiology	Laboratory reports, lab skills practical

Teaching Methods:
Lectures, readings, class discussion, laboratory experiences

Course Requirements:

1. **Required Texts**:
Powers, S.K., & Howley, E.T. (2009). *Exercise physiology: Theory and application to fitness and performance* (7th Ed.). Columbus, OH: McGraw-Hill.

American College of Sports Medicine. (2009). *ACSM's guidelines for exercise testing and prescription* (8th Ed.). Philadelphia: Lippincott Williams & Wilkins.

Other readings will be available electronically on Blackboard or as hard-copy handouts.

2. **Required Assignments**

There will be three in-class exams (including final exam), quizzes in class or online in Blackboard, and one final research practical exam. Laboratory reports in abstract form will be due the following MONDAY. Students will write an article critique on an epidemiology study or an exercise program for a clinical or chronic disease. Each day late without an excused absence or other arrangements will result in lowering of the letter grade. Grades will be posted on Blackboard. Assignments may be submitted in hard copy or electronically through Blackboard (preferred).

- 3 exams (100 points each, 50% of final grade) and 3-5 quizzes (5-10 points, lowest quiz grade dropped, 5% of final grade,): 55% of final grade
- Ten Laboratory Sessions Participation (10 points, 10%) and Reports(10 points, 10%): 20% of final grade
- Article Review: 10% of final grade
- Final Laboratory Skills Practical Exam, 40 possible points on checksheet: 15% of final grade

Laboratory Reports

Laboratory write-ups are due the following MONDAY, at the beginning of class, a one page abstract (250 words **maximum**—check word count, double spaced, APA format). Headings such be as follows: **Purpose, Methods, Results, Conclusions.**

Article Critique

Students must write ONE article critique (~3 pages) on an exercise physiology/pathophysiology related topic. The article may be epidemiological or it may be an exercise training program, original research articles only (NOT reviews). APA format must be used. It must be uploaded to turnitin.com using the course ID **4675886** and the password **goeagles.** Similarities higher than 25% will require re-writes with a grade of Incomplete until it meets the standard. Large percentages > 50% or >20% similarity to another student's paper may result in a report to the Dean of Students.

Final Laboratory Skills Practical Exam:

Students will demonstrate practical skills on a test subject at three stations on body composition/anthropometrics, muscular fitness, and cardiorespiratory fitness assessment with blood pressure and heart rate measurement.

Grading (100% scale)

Since the University allows plus/minus grading for undergraduates, the following ranges are used (out of 100%):

A = ≥ 90%	B- = 80-82%	C- = 70-72%	D- = 60-62%
B+ = 87-89%	C+ = 77-79%	D+ = 67-69%	F = <60%
B = 83-86%	C = 73-76%	D = 63-66%	

S/U Option
For students choosing this option, a grade of C or higher must be achieved to receive an S grade. A grade of C- is recorded as a U.

Course Withdrawal
Withdrawing from the course can be completed on-line or by submission of a form to the Registration Office. The official date of withdrawal from a course is the date the withdrawal form is **returned** to the Registration Office or completed on-line. **Wednesday March 7, is the last day to withdraw from a full spring semester course. (Automatic N grade is issued.)** ***Students may not withdraw from a course after this date without documented extenuating circumstances presented to the registrar.***

Class Attendance and Participation
Students are expected to attend all classes and laboratory sessions unless there is illness or other special circumstances (i.e., traveling with an athletic team). For any exercise laboratories, students must be dressed for activity and must follow any pre-testing instructions such as proper rest and intake of food and/or caffeine. The Winthrop attendance policy will be in effect. If more than 25% of classes are missed without documentation, the final grade is an automatic F. Arriving late will count as half an absence. It is your responsibility to contact the instructor regarding any missed material and assignments. This course will utilize Blackboard for content and postings. Our Department is going GREEN, so you will no longer receive a hard copy of the PowerPoint notes. You will receive the laboratory exercises in hard copy. You must use your Winthrop email account to use Blackboard through Wingspan.

Students are expected to be prepared to participate in class discussions. Any materials required for that day should be read prior to class.

Cell Phone/Texting Policy
Students will receive ONE warning for checking cell phone/texting during class time. After that, it is going to be 2 points off your FINAL grade for each incident. Cell phones should be set to vibrate or off, especially if the vibrate ring is loud.

Student Code of Conduct
Infractions of academic discipline are dealt with in accordance with the student Academic Conduct Policy, which is in the Student Conduct Code in the Student Handbook online (http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf). Students must do their own work on their laboratory write-ups.

Students with Disabilities
Winthrop University is dedicated to providing access to education. If you have a disability and require specific accommodations to complete this course, contact Services for Students with Disabilities at 323-3290. Once you have your official notice of accommodations from Services for Students with Disabilities, please inform me as early as possible in the semester.

Syllabus Change Policy:
The syllabus could be subject to change due to special circumstances (inclement weather, campus emergency, etc). Students will be informed of any changes.

LECTURE AND LABORATORY TIMELINE (subject to change)

Date	***Day***	***Lecture Topic***	***Reading***	***Lab***
1/9	M	Class overview, schedule, expectations		
1/11	W			*Pre-Lab: using a heart rate monitor, taking blood pressure*
1/13	F	Class 1: Overview of Basic Homeostasis and Bioenergetics **(Last day to drop/add is Friday, 1/14)**	Powers & Howley, Chapters 2-3	
1/16	M	MLK Jr. Holiday, NO CLASSES		
1/18	W		GETP, pp. 63-71	Lab 1: ACSM circumferences, skinfold sites and equations
1/20	F	Class 2: Metabolism Review1	Powers & Howley, Chapter 4	
1/23	M	Class 3: Metabolism Review2 **(Last day for S/U selection is Tuesday 1/24)**	Powers & Howley, Chapter 4	
1/25	W		GETP, pp. 85-98	Lab 2: ACSM Muscular Fitness Review: 1-RM bench, YMCA bench press, pushups, crunch test
1/27	F	Class 5: Hormonal Responses to Exercise1	Powers & Howley, Chapter 5	
1/30	M	Class 6: Hormonal Responses2	Powers & Howley, Chapter 5	
2/1	W	**(must apply for Aug or Dec 2011 graduation by Feb 1 to avoid a late fee)**	GETP, pp. 71-85	Lab 3: YMCA Submaximal Cycle Test with exercise HR and BP assessment
2/3	F	Class 7: Acid-Base Balance During Exercise	Powers & Howley, Chapter 11	
2/6	M	Class 8: Pathophysiology of heart disease and role of inflammation	Pearson et al. (2003) *Circulation* (Blackboard)	
2/8	W		GETP, Appendix C, pp. 302-309	Lab 4: Resting Electrocardiogram

				(ECG)
2/10	F	*Class 9: SEACSM Annual Meeting, Jacksonville, FL*		
2/13	M	Class 10: Electrocardiography	Powers & Howley, pp. 178-182; GETP, pp. 140-144, Appendix C, pp. 302-309	
2/15	W		GETP, pp. 105-123	Lab 5: Bruce treadmill protocol, exercise HR and BP
2/17	F	Class 11: Health-related and Clinical Exercise Testing1, Cardiac Rehab	Powers & Howley, pp. 433-434; GETP, pp. 71-85, also Chapter 5	
2/20	M	Class 12: Review Exam I, Health-related and Clinical Exercise Testing Cardiac Rehab2, review for Exam I	Powers & Howley, pp. 354-356	
2/22	W			Open Lab Period for practice/review
2/24	F	Class 13: Exam I		
2/27	M	Class 14: Diabetes and Obesity1	Powers & Howley, pp. 348-353; GETP pp. 260-264	
2/29	W		GETP, pp. 105-123	Lab 6: Maximal ramp treadmill protocol with ECG
3/2	F	Class 15: Diabetes and Obesity2	Berggren, Hulver, & Houmard, 2005; Hill & Wyatt, 2005 (Blackboard)	
3/5	M	Class 16: Pulmonary Diseases, Pulmonary Rehab	Powers & Howley, pp. 348-353; GETP pp. 260-264	
3/7	W	**(Last day to withdraw for N grade or S/U rescind is Wed 3/7)**	GETP, pp. 51-53	Lab 7: Spirometry
3/9	F	Class 17: Open Date, catch-up		
3/12	M	SPRING BREAK—NO CLASS		
3/14	W			SPRING BREAK—NO LAB
3/16	F	SPRING BREAK—NO CLASS		

3/19	M	Class 18: Other heart diseases: hypertension, dyslipidemia, metabolic syndrome,	Powers & Howley, pp. 176-178, 297-299-300; GETP 244-253	
3/21	W			Lab 8: Ventilatory Threshold
3/23	F	Class 18: Review of common medications	Powers & Howley, pp. 350-359; GETP, Appendix A	
3/26	M	Class 19: Review for Exam II		
3/28	W			Lab 9: Oxygen Deficit and Debt
3/30	F	Class 20: Exam II		
4/2	M	Class 21: Emotions, stress, and chronic disease	Scales, Bacon, & Blumenthal (2005), Blackboard	
4/4	W			Lab 10: Accelerometry and Pedometry
4/6	F	Class 22: Role of exercise on resting metabolic rate, weight loss/regain	TBA, on Blackboard	
4/9	M	Class 23: Protein, amino acids, and muscle mass	TBA, on Blackboard	
4/11	W			**Practice/review for Final Lab Practical Exam, open lab period**
4/13	F	Class 24: Exercise and immune function	TBA, on Blackboard	
4/16	M	Class 25: Space Physiology		**Last minute questions on lab practical**
4/18	W			**FINAL Lab Practical Exam**
4/20	F	Class 26: Additional Lab Practical Exam Time	TBA, on Blackboard	**FINAL Lab Practical Exam**
4/23	M	Class 26: ACSM Certifications, Review for Final Exam	GETP Appendix D	
4/30	M	FINAL EXAM**, 8:00 a.m.**, Class Room West 221		