

EXSC 485 Exercise Physiology II and Lab

Exercise Physiology II and Laboratory (4 credit hours)

Lecture: Wednesdays and Fridays, 9:30 to 10:45 a.m.

Laboratory: Mondays 9:30 to 11:30 a.m.

Lois Rhame West Center Room 217, Room 118 Laboratory

Instructor:

Dr. Janet Wojcik

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Office hours: Mon. 1:00 to 2:00 p.m., Wed. 12:30 to 2:00 p.m., Tuesday and Thursday. 2:00 to 3:30 p.m., Fri. by appointment, other times available by appointment.

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 WebCT or as hard-copy handouts.

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 307, BIOL 308, PHED 384/385.

Objectives:

Students will:

- 1) investigate causes of disease and resultant abnormal physiological function of organ systems.
- 2) examine the impact of exercise on various organ systems.
- 3) explore the interaction of various organ systems in relationship to physiological function.
- 4) synthesize current research in physiology using APA writing style.
- 5) develop research projects related to exercise and physiological function.
- 6) gain further practical experience in laboratory-based exercise testing related to abnormal physiology.

Learning Outcomes

Course Objective	Performance Assessment
Cause of disease	Quizzes, exams
Impact of exercise on organ systems	Quizzes, exams, laboratories, lab practical
Explore interaction of organ systems	Quizzes, exams, laboratories, lab practical
Synthesize research	Article review
Develop research projects	Exams, laboratories
Gain further laboratory skills	Laboratories, final lab practical exam

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 WebCT for content and postings. **Our Department is going GREEN, so you will no longer receive a hard copy of the PowerPoint notes.** You must use your Winthrop email account to use WebCT. Info on how to log-in to WebCT can be found from a link on the WU Students homepage, so log-on through <http://online.winthrop.edu>. Your log-in ID and password will be wu_ followed by your Winthrop PID, so as a student I would be wu_wojcikj2. Once you log-in, you can change your password.

Students are expected to be prepared to participate in class discussions. Any materials required for that day should be read prior to class. Laboratory write-ups are due at the beginning of the following class, a one page (250 words, double spaced, APA format) abstract must accompany any documents.

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. APA format must be used.

Cell Phone/Texting Policy

Any student seen making text messages during class or seen with their hands under their desk will receive 5 points off their next exam for each offense.

Grading

There will be three in-class exams (including final exam), online quizzes in WebCT, and one final research practical exam. Laboratory reports and abstract will be turned in the following class day (Wed). 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 WebCT.

- Tests and quizzes: 55%
- Laboratory Sessions Participation and Write-up: 20%
- Article Review 10%
- Final Practical Exam: 15%

Since the University allows plus/minus grading for undergraduates, the following ranges are used:

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.

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 with Disabilities

Winthrop University is dedicated to providing access to education. If you have a disability and need classroom accommodations, please contact Gena Smith, Coordinator, Services for Students with Disabilities, at 323-3290, as soon as possible. Once you have your letter, please get it to me so that I am aware of your accommodations well before the first assignment, test, or paper.

LECTURE AND LABORATORY TIMELINE (subject to change)

<i>Date</i>	<i>Day</i>	<i>Lecture Topic</i>	<i>Reading</i>	<i>Lab</i>
1/11	M			Class overview, schedule, expectations
1/13	W	Class 1: Overview of Basic Homeostasis and Bioenergetics	Powers & Howley, Chapters 2-3	
1/15	F	Class 2: Metabolism Review (Last day to drop/add is Friday, 1/15)	Powers & Howley, Chapter 4	
1/18	M			MLK Jr. Holiday, NO CLASSES/LAB
1/20	W	Class 3: Hormonal Responses to Exercise	Powers & Howley, Chapter 5	
1/22	F	Class 4: Hormonal Responses (con't)	Powers & Howley, Chapter 5	
1/25	M	(Last day for S/U selection is Monday 1/25)	GETP, pp. 63-71	Lab 1: ACSM circumferences, skinfold sites and equations
1/27	W	Class 5: Acid-Base Balance During Exercise	Powers & Howley, Chapter 11	

1/29	F	Class 6: Epidemiology and Disease, ACSM Risk Factors for Heart Disease	Powers & Howley, Chapter 14; GETP Chapter 2	
2/1	M		GETP, pp. 85-98	Lab 2: ACSM Muscular Fitness Review: 1-RM bench, YMCA bench press, pushups, crunch test
2/3	W	Class 7: Pathophysiology of heart disease and role of inflammation (must apply for Aug or Dec 2010 graduation by Feb 1 to avoid a late fee)	Pearson et al. (2003) <i>Circulation</i> (WebCT)	
2/5	F	Class 9: Electrocardiography	Powers & Howley, pp. 178-182; GETP, pp. 140-144, Appendix C, pp. 302-309	
2/8	M		GETP, pp. 71-85	Lab 3: YMCA Submaximal Cycle Test with exercise HR and BP assessment
2/10	W	Class 9: Health-related and Clinical Exercise Testing, Cardiac Rehab	Powers & Howley, pp. 433-434; GETP, pp. 71-85, also Chapter 5	
2/12	F	<i>SEACSM Annual Meeting, Greenville, SC - NO CLASS</i>		
2/15	M		GETP, Appendix C, pp. 302-309	Lab 4: Resting Electrocardiogram (ECG)
2/17	W	Class 10: Health-related and Clinical Exercise Testing, Cardiac Rehab Review for Exam I	Powers & Howley, pp. 354-356	
2/19	F	Class 11: Exam I		
2/22	M		GETP, pp. 105-123	Lab 5: Bruce treadmill protocol, exercise HR and BP

2/24	W	Class 12: Review Exam I, Begin Diabetes	Powers & Howley, pp. 344-348; GETP pp. 232-237	
2/26	F	Class 13: Diabetes and role of obesity, body fat, and exercise	Berggren, Hulver, & Houmard, 2005; Hill & Wyatt, 2005 (WebCT)	
3/1	M		GETP, pp. 105-123	Lab 6: Maximal ramp treadmill protocol with ECG
3/3	W	Class 14: Pulmonary Diseases	Powers & Howley, pp. 348-353; GETP pp. 260-264	
3/5	F	Class 15: Pulmonary Diseases, Pulmonary Rehab	Powers & Howley, pp. 348-353; GETP pp. 260-264	
3/8	M		GETP, pp. 51-53	Lab 7: Spirometry
3/10	W	(Last day to withdraw for N grade or S/U rescind is Wed 3/10)		
3/12	F	Class 16: Open Date, catch-up		
3/15	M			SPRING BREAK—NO LAB
3/17	W	SPRING BREAK—NO CLASS		
3/19	F	SPRING BREAK—NO CLASS		
3/22	M			Lab 8: Ventilatory Threshold
3/24	W	Class 17: Other heart diseases: hypertension, dyslipidemia, metabolic syndrome,	Powers & Howley, pp. 176-178,297-299-300; GETP 244-253	
3/26	F	Class 18: Review of common medications	Powers & Howley, pp. 350-359; GETP, Appendix A	
3/29	M			Lab 9: Oxygen Deficit and Debt
3/31	W	Class 19: Review for Exam II		
4/2	F	Class 20: Exam II		

4/5	M			Lab 10: Accelerometry and Pedometry
4/7	W	Class 21: Emotions, stress, and chronic disease	Scales, Bacon, & Blumenthal (2005), WebCT	
4/9	F	Class 22: Cancer	GETP, 228-232; additional reading on WebCT	
4/12	M			Lab 11: TBA or open
4/14	W	Class 23: Women: Pregnancy, Female Athlete Triad, Eating Disorders	Powers & Howley, pp. 474-479; GETP pp. 183-187, 256-258	
4/16	F	Class 24: Women (con't)	Powers & Howley, pp. 474-479, GETP pp. 183-187, 256-258	
4/19	M			Practice/review for Final Lab Practical Exam, open lab period
4/21	W	Class 25: Children and Youths	Powers & Howley, pp. 479-481; GETP pp. 10-11, 187-189	
4/23	F	Class 26: Review for Final Exam; ACSM Certifications	GETP Appendix D	
4/26	M			FINAL Lab Practical Exam
4/29	TH	FINAL EXAM, 11:30 a.m., Class Room West 217		