

Basic Clinical Skills II - Applied Exercise Science 2014
PHT 6207C
Year 1, Spring Semester
Department of Physical Therapy, College of PHHP, University of Florida

Credit Hours: 2

Course Location: HPNP 1109

Course Dates and Times: Mondays (10:40AM – 11:30AM and 12:50PM – 4:55PM)

Course Instructors: To be determined for 2014

Past instructors providing syllabus content: Barbara Smith PT, PhD, Barbara Bour, MS, PT and Dominique Dubose, MS

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Office Hours: By appointment, Room 2222, CTB

Course Description

This course is designed to prepare the student for hands-on patient instruction. The student will obtain an overview of basic exercise evaluation and training techniques applicable to prevention and wellness services as well as to those populations requiring rehabilitation or restoration of function due to illness, injury, or chronic disability.

Course Prerequisites

Course participation is limited to entry-level DPT students who have successfully completed PHT 6206C, Basic Clinical Skills I.

Course requirements

- **Attendance** at classes and laboratory sessions.
- **Preparation** by completing the readings and assignments for class.
- **Participation** in class discussions, homework assignments, and question/answer sessions.

Course Objectives

By the end of this course, students will be able to

1. Advance knowledge base of skeletal muscle function from Human Physiology (PHT 6935C) to differentiate between detraining, deconditioning and debility.
2. Identify the effects of detraining, deconditioning and debility and potential measures to counteract them.
3. Identify patients at high-risk for exercise-related complications and conduct a safety assessment.
4. Discuss basic procedures for handling non-emergent and potentially life-threatening emergencies that may occur in the gym or clinic.
5. Expand assessment of resting vital signs mastered in Basic Skills I (PHT 6206C) to include cardiovascular and pulmonary assessment of postural changes and exercise.
6. Identify the basic components of an exercise prescription.
7. Differentiate an exercise prescription designed to improve health from one designed to improve athletic performance.

8. Determine the indications, contra-indications, and purposes for conducting a maximal or submaximal aerobic fitness test.
9. Detect and record the cardiovascular and pulmonary responses to steady-state aerobic exercise and graded aerobic exercise.
10. Select physiologically relevant parameters of an exercise prescription designed to increase cardiopulmonary fitness, strength, muscle endurance, or power.
11. Identify contraindications for aerobic or resistance exercise.
12. Classify the components of and indications for a chest exam.
13. Observe, palpate, percuss, and auscultate respiratory function.
14. Distinguish abnormal findings on the chest exam and relate these to the physiology of the pulmonary tree.
15. Discuss and select the appropriate modalities for testing muscular strength, power, and endurance.
16. Detail the cardiovascular and pulmonary responses that occur with resistance exercise and training.
17. Differentiate between resistance training techniques to improve muscular endurance, strength, hypertrophy or power.
18. Conduct skinfold caliper and girth assessment of body composition, and interpret the findings based upon age, race, gender, and ethnicity.
19. Distinguish between measurements of obesity from body composition techniques.
20. Identify special considerations for exercise in patient populations, including those with severe obesity, diabetes or neurovascular disorders, and stroke.
21. Analyze and interpret the influence of chronic disease on exercise performance of patients, and appreciate the effects of performance limitations on functional independence.
22. Modify an exercise prescription to accommodate skills, capacity, and safety across the lifespan.
23. Identify and apply strategies for progressing an exercise prescription.
24. Discriminate the sources of fatigue and how fatigue can influence your exercise prescription for patients with neuromuscular disease.

Reference Texts (REQUIRED)

1. **ACSM's Guidelines for Exercise Testing and Prescription, Eighth Edition (2010)**
2. Exercise Physiology: Theory and Application to Performance, Seventh Edition (Powers and Howley, 2008)
3. Therapeutic Exercise: Foundations and Techniques, Fifth Edition (Kisner & Colby, 2007)

Grading

Performance in this class will be assessed by performance in weekly lecture and laboratory assignments; examinations; group laboratory assignments; participation and professionalism.

Midterm Examination	February 25	25%
Laboratory Assignments:		
VO _{2max} and ex prescription	Due February 4	5%
Sub-maximal aerobic testing	Due February 18	5%
Resistance testing and training	Due March 25	5%

Pop quizzes	Unannounced	10%
Skills Checks		
Midterm	February 25 and 27	10%
Final	April 22 and 24	10%
Cumulative Final Examination	Date Assigned by UF	30%
<i>Total</i>		<i>100%</i>

It is expected that examinations will be held on the dates scheduled and assignments will be submitted on time. Special exceptions may be made for emergency situations, with advanced notice.

Dress Code

Lecture or laboratory attire as per student handbook is acceptable for this class. Lecture or interview attire is expected for any guest lecturers announced in advance.

Availability of Instructor

Dr. Smith will be available during regularly scheduled class time, or by appointment for individual meetings in person or by phone. Although Dr. Smith will try to keep Monday afternoons and evenings free for student meetings, it is recommended that you schedule individual meetings in advance to guarantee we have ample time.

Special Needs

If you have a special learning need or a disability and you are or may be requesting an accommodation, please contact both your instructor and the Office of Disability Resources and Services (DRS). DRS will verify your special need and determine the reasonable accommodations for this course. DRS requires you to meet individually with each instructor, so that we can review and understand the accommodations you need to succeed. If you intend to seek assistance from DRS, please do this as early as possible.

Counseling and Student Health Care

Students may occasionally have personal issues that arise or that may interfere with their academic performance. If you find yourself facing problems that affect your studies, you are encouraged to talk with an instructor and to seek confidential assistance at the University of Florida Counseling and Wellness Center, (352) 392-1575. Their web site provides more information: <http://www.counseling.ufl.edu/cwc/>

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center. Student Health at Shands offers a variety of services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at (352) 392-0627 or visit the web site: <http://www.shcc.ufl.edu/shands/>

Crisis intervention is also available 24/7 from: Alachua County Crisis Center: (352) 264-6789.

Academic Honesty

In this professional program we are particularly sensitive to students submitting independent work and to using complete and accurate referencing in complying with the University of Florida Rules - 6C1-4.017 Student Affairs: Academic Honesty Guidelines. Further details regarding the University of Florida honesty policy are available at:

<http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>

Unless otherwise noted, each student is expected to **individually** complete the work assigned.

All students are required to abide by the Academic Honesty Guidelines; the following pledge has been accepted by the University and is expected of all students:

"I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University."

Professionalism

Professional behavior is critical for a successful transition from the classroom to the clinic. All students must demonstrate appropriate levels of professionalism in their behaviors in the classroom and laboratory, and during communication with instructors and guest lecturers by phone, email, and in person. Professional behavior is demonstrated by:

1. Attendance to all classes and labs
2. Timeliness
3. Attentiveness
4. Respectful and polite interaction with peers, guests and instructors
5. Active learning as demonstrated by questions and discussion

Personal electronics policy

Students are permitted to use laptop computers to take notes or use posted lecture slides during class. Every attempt will be made to post a draft of the weekly lecture and lab to Sakai by 11pm Sunday night. However, the instructor may need to make changes prior to class, and she is not required to guarantee slides will be available prior to the lecture.

Phones and music devices are **never** permitted while class or lab is convened, and use must be restricted to during break times. The instructor will use her discretion to permit limited exceptions to the telephone policy, in the event of a family emergency and with advance notice.

Personal internet use is not permitted during class – this is a **zero tolerance rule**. Laptop computers will be entirely banned from class and lab on the **FIRST** instance of email, personal internet, or any other unauthorized computer use observed during lecture or laboratory time.

Math is a basic skill needed during clinical care. Unless specified otherwise by your instructor, you are not permitted to use a calculator or to use phones or other personal electronic devices (iPad etc) as calculators during class and on exams. You are permitted to use a **calculator** (NOT the calculator app on a mobile device,) during lab time.

Laboratory Sessions

Partners: In order to provide you with more 1:1 time with equipment and instructors, we may divide some laboratory sessions into groups, and will provide ample notice if your presence is not required for laboratory. We will assign you to a different lab partner each week.

Health Considerations: In this class, our laboratory will consist of various aerobic and muscular performance tests and exercises. These exercises may make you feel warm, tired, short of breath, or fatigued. It is expected that you will dress appropriately in your lab attire to stay cool during exercise and bring covers to stay warm when not exercising. If you have a physical condition that limits your ability to engage in cardiovascular conditioning or muscle strengthening exercises, it is strongly suggested that you consult the Office of Disability Resources and Services as soon as possible, to make accommodations for laboratory sessions and assignments. In addition, be certain to bring any medications or devices (i.e. inhaler, medication, orthotics) to each class, if prescribed by your physician for exercise.

Study Aids: To complete your lab assignments, you may at times need to make some calculations or look something up. The instructors are present to help guide you but cannot provide you with the answers. For this reason, you will be permitted to use your calculators in lab, to complete your assignments. However, phones and internet shall not be used for personal reasons inside the laboratory. The lab privilege will be taken away on the first infraction.

Equipment: You are the stewards of this laboratory and the equipment, and the University has limited funding to replace broken or missing equipment. Every student has been assigned to help the teaching assistants with lab setup and cleanup on weeks where larger amounts of equipment and furniture repositioning will be needed. Please refer to the posted assignment sheet in Sakai. It is requested that everyone please be considerate of the teaching assistants and your peers by helping to clean up the equipment and re-order the room after lab. If you would like to practice your skills outside of the scheduled laboratory time, please schedule this with one of the Teaching Assistants.

General Grading Rubric for Lab Assignments: You may submit one lab assignment with your assigned partner for the week. Please clear with the instructor in advance if there is an extra person in your group. *Each lab group should submit their own assignment.*

1. Did the student work with their partner? Did the lab team share or copy their work with another team? (25%)
2. Is the form complete? (25%)
3. Was the form turned in on time? (25%)
4. Were the answers accurate? (25%)

Laboratory Competencies

Students must achieve a score of 90% or higher, in order to pass a competency. If the score is lower than 90%, the student must repeat the competency. If the student passes the competency on the second attempt, the student will receive a grade equal to 90% of the score obtained on the repeat test. If the student fails the second attempt, the student is subject to failing the course. Per the Student Handbook, a student may then petition the academic progression committee (APC) for a third attempt. The petition will be considered by the APC and a recommendation made on whether the student will be allowed a third attempt or fail the course.

Week One: January 6

Review syllabus and expectations; Introductory lecture: Systemic Effects of Inactivity

Reading Assignment: Assigned readings posted on Sakai

Laboratory: All groups –Patient monitoring: cold pressor response, postural shifts and preload, sustained static exercise

****Basic Lab Skill –Vital Signs****

Week Two: January 13

Risk-Benefit of Exercise, Pre-exercise Screening; Basics of Emergency Management

Reading Assignment: ACSM- CH 1-3

Laboratory: All groups –Monitoring acute responses to aerobic exercise

****Basic Skill – Orthostatic Vital Signs****

Week Three: January 20**University Holiday****Week Four: January 27**

Fundamentals of the Exercise Prescription

Reading Assignment: P&H- CH 16, ACSM- CH 4, 7

Laboratory: **Online learning:** Video demonstration of maximal graded exercise test and formula calculations; Target HR and Karvonen Formula

****Basic Skill – Target HR and Karvonen Formula****

Written reflection on exercise interpretation and METS – due by 2/4

Week Five: February 3

Health-Related Cardiopulmonary Fitness Evaluation

Reading Assignment: P&H: CH 15, 20; ACSM: CH 4-6

Laboratory: **Groups A1 and B1-** Sub-maximal Fitness Testing

****Basic Skill – Exercise Vital Signs****

Week Six: February 10

Aerobic Exercise Prescription and Effects of Aerobic Training

Reading Assignment: P&H: CH 13, 15; ACSM: CH 4-6

Laboratory: **Groups A2 and B2-** Sub-maximal Fitness Testing

****Basic Skill – Exercise Vital Signs****

Week Seven: February 17

Chest and Respiratory Examination

Reading Assignment: K&C: CH 24

Laboratory: Basic Chest Exam, Part 1

****Basic Skills: auscultation, tactile fremitus, egophony/pectoriloquy, diaphragm descent****

Sub-maximal exercise testing laboratory assignments due in Sakai by 5pm

Week Eight: February 24

Exam 1

Lab Competencies Feb 24 and 26: auscultation, tactile fremitus, egophony, whispered pectoriloquy, assessment of diaphragm descent with percussion, orthostatic vital signs, exercise vital signs.

Formulas: Target HR and Karvonen formulas

Week Nine: March 3– Spring Break

Week Ten: March 10

Exercise Prescription for Muscular Fitness

Reading Assignment: P&H: CH 13, 20; K&C: CH6; ACSM: CH 7

Laboratory: Groups A1 and B1– Clinical Resistance Training - OSMI 6-8 pm

Week Eleven: March 17

*Resistance Exercise: Chronic Adaptations **Lecture may need to be scheduled for March 20, due to instructor commitment***

Reading Assignment: P&H: CH 13, 21; K&C: CH6; ACSM: CH 7

Laboratory: Groups A2 and B2 – Clinical Resistance Training - OSMI 6-8 pm

Week Twelve: March 24

Body Composition

Reading Assignment: P&H: CH 18 K&C: CH7; ACSM: CH7

Laboratory: All groups – Case Example, Body Composition; Health Promotion

*****Basic Skills – ABI, circumferential testing, skinfold calipers*****

OSMI laboratory assignments due in Sakai by 5pm

Week Thirteen: March 31

Special Considerations for Patients with Diabetes – Invited Speaker Donovan Lott, PhD, PT

Reading Assignment: Assigned by Dr. Lott, ACSM: portion of CH10

Laboratory: Exercise prescriptions for patients with diabetes and neurovascular disease

*****Basic Skills – monofilament testing, peripheral pulses*****

Week Fourteen: April 7

Aerobic Exercise and CVA

*****Guest Lecturer – Craig Fox, PT, DPT, CSCS, Shands Rehab, Magnolia Park*****

Reading Assignment: Assigned by Dr. Fox

*Laboratory: Isokinetic dynamometer demonstration. Each lab group will be sub-divided and scheduled for a one-hour appointment for lab in DG-114. **Rest of time will be open lab and study for competencies with Dominique and Ms. Bour, DG-130.***

Week Fifteen: April 14

Exercise Considerations Across the Age Continuum- Invited Speaker Barbara Bour, MS, PT

Reading Assignment: Assigned by Ms. Bour. Also: ACSM position statement:

http://journals.lww.com/acsm-msse/Fulltext/2009/07000/Exercise_and_Physical_Activity_for_Older_Adults.20.aspx

Laboratory: Senior Fitness Test; Exercise with acute care equipment (O2 tank, IV pole, foley)

Week Sixteen: April 21

Muscle Performance Testing and Training in Neuromuscular Disease – Invited Speaker

Reading Assignment: Assigned Journal Articles

Basic Skills Competencies April 22 and 24: Peripheral pulses, monofilament testing, ABI, circumferential testing, skinfold calipers

Formulas: Karvonen formula, BMI

Final Written Exam – Per UF Policy/Schedule