

Basic Science of Musculoskeletal System in Clinical Decisions
HPHY 660_Fall 2014
Mon/Wed 8:00-9:20 am, 132 ESL

Instructor: Grace M. Golden, PhD, ATC, CSCS
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Office: 207 Bowerman
Office Hours: Monday 10-11:30am, Thursday 10-11:30am, or by appointment

Note: Best contact is via email. I generally try to respond to email within 24 hrs M-F. Weekend correspondence is dependent upon availability.

Pre-requisite Coursework/Training: None. Enrollment in Graduate Athletic Training Program

Required Resources:

1. Required Textbook: Nordin M., Frankel V. Basic Biomechanics of Musculoskeletal System. 4th Ed. Lippincott Williams and Wilkins. Baltimore, MD. 2001
2. Accessibility to Blackboard for course materials
3. Computer access and software: You will need regular access to a computer in this course. You will also require the following software: a web-browser (e.g. Firefox, Explorer), PowerPoint or the equivalent, and Adobe Reader.

Course Description:

This course provides a literature-based investigation into the basic science and clinical research underlying clinical decisions in athletic medicine.

Course Expectations:

The initial sessions will be interactive and didactic, with an overview of scientific topics chosen to demonstrate various aspects of applications of basic science to clinical situations involving the musculoskeletal system. Several local health professionals will discuss the scientific basis and rationale of their various areas of expertise and how these factors form the bases for clinical practice. Subsequent sessions will be student-led teaching sessions, also didactic and interactive, covering a topic selected by the student with approval of Dr. Golden. This will be followed by the submission of a written paper on the same topic in publishable form and referenced.

Graduate Athletic Training Program Objectives:

At the conclusion of this course you will hopefully be better able to:

1. Critique prior learning experience and develop personal clinical philosophy.
2. Make clinical decisions based upon current evidence.
3. Constructively evaluate scientific literature using critical thinking skills.
4. Produce concise, accurately referenced, scientific writing.
5. Demonstrate integrity in professional communication, clinical decision making and behavior, and scholarly activity.

Course Learning Objectives:

The purpose of this course is to assist the student to:

1. Understand the basic science of the principle musculoskeletal structures and alteration that occur to normal structures during injury and wear processes.
 2. Utilize literature based clinical studies as the framework to evaluate various aspects of musculoskeletal problems in an athletic medicine environment as a framework for understanding the application of basic science principles.
 3. Incorporate information (knowledge) into clinical practice (performance).
 4. Organize and present basic science and clinical materials in both oral and written form.
 5. Gain experience in oral presentation and classroom teaching.
 6. Apply knowledge of basic science to clinical situations.
 7. Incorporate new knowledge into clinical practice.
 8. Learn, organize, and present scientific information in a group setting
 9. Interact with peers and leaders by evaluating and discussing presentations of relevant scientific material.
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Student Presentations:

Purpose:

To afford the student the opportunity to look in detail at a clinical topic in sports medicine and analyze the relationship between the body of basic science knowledge and its application to current clinical treatment paradigms.

Topics:

The research topic is to be selected by the student and approved by Dr. Golden. Drafts consisting of one typewritten page outlining the topic and the basic rationale must be in on or before **October 24, 2014**, and may be submitted in written form or by email to graceg@uoregon.edu.

Class Presentation:

Each student will be given a 40 minute block of time. During that block, the student will identify the topic, why it is of interest, and present the pertinent clinical research that forms the basis for what is known and how it relates to treatment. The research will be evaluated critically, and controversies discussed and analyzed. The time may be used as the student prefers, but a portion of it must be interactive, and a suggested minimum of 15 minutes reserved for class discussion. Audiovisual materials of the students choosing may be used, where appropriate.

Pre-presentation assignments/readings for the class are strongly suggested.

Written Paper:

A written paper on the topic will be due **Thursday December 11, 2014 @ 12pm**, in publishable form, with appropriate citations and documentation, via Blackboard.

Grading Criteria:

Component	Weight
Presentation	20%
Written Paper	20%
Midterm Examination	20%
Final Examination	20%
Discussion and Mini Assignments	20%
Total	100%

*Note: students will need to complete their appraisal of learning related to the program learning objectives (self-assessment) with E*value by Friday of dead-week (12/6/2013)- otherwise you will be issued an 'incomplete' for the course.

COURSE POLICIES:

- Active participation in class facilitates learning for all students. Students are strongly encouraged to come to class prepared by having studied the assigned readings.
- Students are expected to be punctual. Class will begin and end on schedule.
- Advanced notification of absence because of other responsibilities is appreciated. Students are responsible for obtaining and completing assignments on time. No scheduled absences are permitted for exams.
- Any changes in the course outline are at the discretion of the instructor and will be announced in class.
- Food is not allowed in the classroom.
- Cellular telephones must be turned off during class.
- Unannounced or unscheduled brief written quizzes may be given at the discretion of the instructor, and graded; to be included in the class participation segment of the grade.

Students with Disabilities

The University of Oregon is working to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in disability related barriers to your participation, please notify me as soon as possible. You are also encouraged to contact the Accessible Education Center (formerly Disability Services) in 164 Oregon Hall at 346-1155 or uoac@uoregon.edu

Academic Integrity

If plagiarism or cheating is suspected, you will be contacted by the HPHY Conduct Officer who will assess the situation and determine the appropriate consequence which can range from an F on an assignment to an F in the course. The situation will also be reported to the Office of Student Conduct and Community Standards. To protect yourself please carefully read the following quotation from the [Office of the Dean of Student's Academic Dishonesty Policy](#) (<http://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct>)

"Plagiarism is the inclusion of someone else's product, words, ideas, or data as one's own work. When a student submits work for credit that includes the product, words, ideas, or data of others, the source must be acknowledged by the use of complete, accurate, and specific references, such as footnotes. Expectations may vary slightly among disciplines. By placing one's name on work submitted for credit, the student certifies the originality of all work not otherwise identified by appropriate acknowledgements. On written assignments, if verbatim statements are included, the statements must be enclosed by quotation marks or set off from regular text as indented extracts.

Unauthorized collaboration with others on papers or projects can inadvertently lead to a charge of plagiarism. If in doubt, **consult the instructor** or seek assistance from the staff of Teaching and Learning Center (68 PLC, 346-3226). In addition, it is plagiarism to submit as your own any academic exercise (for

example, written work, printing, computer program, art or design work, musical composition, and choreography) prepared totally or in part by another. Plagiarism also includes submitting work in which portions were substantially produced by someone acting as a tutor or editor."

In this course: 1) It is not acceptable to give or receive help on a graded assignment unless explicitly granted in writing by your instructor. 2) It is not acceptable to copy anything word for word from any source without citing the work with quotations and providing the source of the information. 3) Rephrasing, paraphrasing, reordering of words and anything added to a graded assignment that is not entirely the student's own work, without appropriate citations, is considered plagiarism.

Course Calendar: HPHY 660_F2014

Week	Date	Topics & Presenters	Readings & Reminders
1	9/29	Introduction to the Course/Expectations, Overview and Assignments, Foundational Biomechanics Lecture (Golden)	C-1
2	10/1	Muscle Adaptation to Exercise (Dr. Lou Osternig) <i>confirmed</i>	C-6
	10/6	Articular Cartilage (Dr. Ken. Singer) <i>confirmed</i>	C-3
	10/8	Ligament Structure, Function and Response to Injury (Golden)	C-4
3	10/13	Nervous System (Golden)	C-5
	10/15	Neural Influences in Orthopedic Injuries (Golden)	
4	10/20	Literary Scientific Search Tools Revisited (Annie Ziedman-Karpinski)	
	10/22	Scientific writing and presentation (Golden) Assign Presentation Date	Pdfs-Bb
	10/24	<i>Project Topic/Outline Due to Grace via email by 11am (Friday) move to the 31st?</i>	
5	10/27	Biology of Bone, Biomechanics, and Properties of Healing (Dr. Dan Fitzpatrick) <i>confirmed</i>	C-2, 15
	10/29	Open	
6	11/3	Midterm Examination (Bring laptop computer)	
	11/5	Tendon Structure, Function and Tendinopathies (Dr. Stan James) <i>confirmed</i>	C-4
7	11/10	Knee Injuries (Dr. Ken Singer) <i>confirmed</i>	C-7
	11/12	Injuries of the Foot/Ankle (Dr. Don Jones)	C-9
8	11/17	Physiology of Concussion (Golden)	Barkhoudarian (2011), McGrath (2010), McCrory (2013)
	11/19	Concussion Management (Dr. Michael Koester) <i>confirmed</i>	
	11/24	Anatomy, Biomechanics and Throwing Injuries of the Shoulder (Dr. Rudy Hoellrich) <i>confirmed</i>	
10	11/26	Student Presentations (1)	TBA
	12/1	Student Presentations (2)	TBA
	12/3	Student Presentation (2), Final Thoughts	TBA
11	12/8	Final Exam: 10:15am, Monday, (Bring laptop computer) Or take-home? (using safe-assign)	?move to 10:30?
	12/11	Paper Due by Noon (safe-assign, Bb)	