

The University of Western Ontario  
School of Health Studies  
Health Sciences 3360b  
Musculoskeletal Disorders in Rehabilitation Science

Instructor: Dr. Burkhart, PhD, RegKin, EIT

January, 2015

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Office Room Number: Thompson Engineering Building Rm. 327

Office Hours: TBD

Time and Location of Lectures: Wednesday 6:00pm-9:00pm; HSB-35

TA contact information and availability will be posted on OWL.

### **Prerequisite Checking**

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Antirequisite(s): Health Sciences 3091A if taken in 2008-2009 or 3091B section 001 if taken in 2011.

Prerequisite(s): Health Sciences 2300A/B or 2330A/B or Kinesiology 2222A/B or Anatomy & Cell Biology 2221 ([www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca)).

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### **Course Information**

An introductory course in the area of musculoskeletal disorders as encountered in sport, the workplace and activities of daily living. Materials covered include the mechanisms of injury, tissue biomechanics, physiology of injury and healing, epidemiology, assessment, treatment, prevention and rehabilitation of acute and chronic trauma. Problem solving and critical inquiry will be addressed through case studies and journal reviews.

### **Course Objectives**

At the end of this class students should be able to:

1. Demonstrate a working clinical knowledge of the anatomy, biomechanics and physiology musculoskeletal system as they relate to injury.
2. Interpret the risks and mechanisms associated with musculoskeletal disorders and assess various conditions seen in the health and rehabilitation setting.
3. Apply current evidence based musculoskeletal diagnostic tests and assessments, including, but not limited to imaging, EMG, and physical assessment.
4. Assess common workplace injuries and develop strategies in rehabilitation.

## Course Materials and Schedule

There is no required textbook for this course. However, topic specific supplementary materials (e.g., textbooks, journal articles) may be suggested and resources will be provided prior to class.

Week	Date	Topic*
1	January 7th	Course introduction Overview of musculoskeletal tissues and organization
2	January 14th	Epidemiology Biomechanical concepts
3	January 21th	Tissue and injury mechanics
4	January 28th	Musculoskeletal disorder risk assessment Musculoskeletal disorder assessment techniques
5	February 4th	Physiological basis of injury and healing
6	February 11th	Mid-term
7	February 18th	Reading Week
8	February 25th	Workplace injuries and Ergonomics
9	March 4th	Treatment of Musculoskeletal disorders
10	March 11th	Sport Medicine and Orthopaedics
11	March 18th	Modelling and simulation in injury and orthopaedics
12	March 25th	Special Topics (TBD)
13	April 1st	Presentations
14	April 8th	Presentations
15	April	TBD

\*Lecture topics are subject to change, however changes will be communicated via OWL prior to class.

## Evaluation (Subject to change)

Assessment	Percentage of Final Grade	Due Date	Description
<b>Journal Club</b>			Students (in groups) will critically analyse a journal article related to the previous weeks topic
Written (Individual)	5	Weeks 3-12	1 page
Presentation (group)	5	One group will present each week (at the end of class) between weeks 3-12	10 min
<b>Pop quizzes (5)</b>	5	randomly assigned throughout semester	
<b>Group Project</b>			Groups will select a specific musculoskeletal disorder and perform an assessment on the injury mechanisms, treatment, rehabilitation and prevention
Proposal	5	February 4th	1 page maximum

Written	15	March 25th	6 page maximum
Presentation	15	March 25th	20 minute presentation Presentation dates and order will be randomly assigned, however, presentation slides from all groups are due at the beginning of class on March 25th
<b>Midterm</b>	20	February 11th	
<b>Final Exam</b>	30	TBD	

All written assignments are due, in hard copy, at the beginning of the class as indicated above. You will also be required to submit an electronic version of the group project written component that is to be received prior to the beginning of class on March 25<sup>th</sup>. Electronic versions will be submitted, by the instructor, to turnitin.com to check for plagiarism. Group project presentation slides are due at the beginning of class on March 25<sup>th</sup> regardless of your actual presentation day. Unless accommodations have been with the instructor, late assignments, up to 24 hrs after the due date, will only be marked out of half the allotted marks; after 24hrs the assignment will not be accepted and it will receive a grade of zero.

A make-up exam or other accommodations will be available for valid non-medical absences, provided you have received permission from the instructor in advance of the exam.

A student seeking academic accommodation for any work worth less than 10% must contact the instructor or follow the appropriate Department or course specific instructions provided on the course outline. In arranging accommodation, instructors will use good judgment and ensure fair treatment for all students. Instructors must indicate on the course outline how they will be dealing with work worth less than 10% of the total course grade. In particular, instructors must indicate whether medical documentation will be required for absences, late assignments or essays, missed tests, laboratory experiments or tutorials, etc. Where medical documentation is required, such documentation must be submitted by the student directly to the appropriate Faculty Dean's office, and it will be the Dean's office that will make the determination whether accommodation is warranted. Given the University's Official Student Record Information Privacy Policy, instructors may not collect medical documentation. Should accommodation be denied, the student may appeal to the Academic Counselling Office of their Faculty for consideration.

**Statement on Use of Electronic Devices**

For mid-term and final exams, a non-programmable calculator will be allowed. However, use of communication equipment (e.g., cell phones, laptops) is prohibited and students will be required to leave these at the front of the room.

Laptops and cellphones are permitted during lectures, provided they do not create a distraction to the instructor or other students. **This is subject to change at any point throughout the semester.**

## **ADDITIONAL STATEMENTS**

### **Student Code of Conduct**

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at The University of Western Ontario, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit <http://www.uwo.ca/univsec/board/code.pdf>.

### **English Proficiency for the Assignment of Grades**

Visit the website <http://www.uwo.ca/univsec/handbook/exam/english.pdf>.

### **Accommodation for Medical Illness or Non-Medical Absences**

[http://www.uwo.ca/univsec/handbook/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf)

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Illness may be acute (short term), or it may be chronic (long term), or chronic with acute episodes. The University further recognizes that medical situations are deeply personal and respects the need for privacy and confidentiality in these matters. However, in order to ensure fairness and consistency for all students, academic accommodation for work representing 10% or more of the student's overall grade in the course shall be granted only in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities.

A UWO Student Medical Certificate (SMC) is required where a student is seeking academic accommodation. This documentation should be obtained at the time of the initial consultation with the physician or walk-in clinic. An SMC can be downloaded under the Medical Documentation heading of the following website: <https://studentservices.uwo.ca/secure/index.cfm>.

Documentation is required for non-medical absences where the course work missed is more than 10% of the overall grade. Students may contact their Faculty Academic Counselling Office for what documentation is needed.

Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, examinations, etc. Students must follow up with their professors and their Academic Counselling office in a timely manner. Documentation for any request for accommodation shall be submitted, as soon as possible, to the appropriate Academic Counselling Office of the student's Faculty of registration. For BHSc students, you may go to the School of Health Studies Office in HSB room 222.

### **Scholastic Offences**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: [http://www.uwo.ca/univsec/handbook/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf).

Additionally,

1. All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).
2. Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

### **Support Services**

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>
2. Student Health -- <http://www.shs.uwo.ca/student/studenthealthservices.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>