

Musculoskeletal Health Research B – Fundamental Concepts in Clinical  
and Health Services Research (MSK 9100)

## COURSE INFORMATION

COURSE: Musculoskeletal Health Research B: Fundamental Concepts in Clinical and Health Services Research (MSK 9100)

COURSE MEETS: Winter Term, Tuesdays and Thursdays 4:00 to 5:30 PM  
Location: Kirkley Conference Room, The Dr. Sandy Kirkley Centre for Musculoskeletal Health Research, 6<sup>th</sup> Floor, University Hospital  
(**Note** lecture times and room changes outside of standard are indicated on schedule)

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COURSE DIRECTORS: Dr. Trevor Birmingham [tbirming@uwo.ca](mailto:tbirming@uwo.ca)  
Dr. David Holdsworth [david.holdsworth@imaging.robarts.ca](mailto:david.holdsworth@imaging.robarts.ca)  
Dr. Joy MacDermid [macderj@mcmaster.ca](mailto:macderj@mcmaster.ca)

OTHER INSTRUCTORS: Dr. Lillian Barra  
Dr. Diane Bryant  
Dr. Ewa Cairns  
Dr. Bert Chesworth  
Dr. Tom Jenkyn  
Dr. Monica Maly  
Dr. Jackie Marsh  
Dr. Terri Paul  
Mr. Michael Pest

Lab Module Instructors:  
Dr. Rebecca Moyer  
Ryan Pinto  
Codie Primeau

## COURSE DESCRIPTION

This is a graduate level half-course developed for the “Joint Motion Program (JuMP)” and the “Collaborative Graduate Program in Musculoskeletal Health Research”. These are transdisciplinary programs involving trainees from diverse realms of musculoskeletal research, including biomedical, clinical, engineering, health services and population health research. The course will be offered in the winter term of 2015 (January to April 2015).

## OBJECTIVES

We have identified specific core concepts with which all MSK trainees should be knowledgeable. These concepts have been integrated into two half-courses:

- *Musculoskeletal Health Research A: Biomedical and Bioengineering Concepts (MSK 9000)*
- *Musculoskeletal Health Research B: Concepts in Clinical and Health Services Research (MSK 9100)*

Material in both courses will be taught at a level so that it is accessible by all participants (i.e. aimed at the non-specialist). For example, concepts in molecular biology will be described at a level understandable by engineering and clinical health sciences graduate students. Similarly, aspects of clinical research will be presented so that they are clear to graduate students in the biological sciences. The goal is to provide trainees from a variety of backgrounds with a common base of knowledge in musculoskeletal research concepts and terminology. By the end of these courses, students will be able to discuss musculoskeletal research with their peers from other disciplines, understand seminars on a broad range of musculoskeletal research topics, and comprehend publications from most realms of musculoskeletal research (eg, biomedical, engineering, health services and population health research).

## Schedule

### Musculoskeletal Health Research B – Fundamental Concepts in Clinical and Health Services Research (MSK 9100) 2015

Winter term 2015 – 12 weeks. Two lectures (90 min each) and typically one session of assigned student paper presentations (90 min) per block (6 blocks in total). Total 28 hours of class time.

#### Quantitative Clinical Research Designs (Week 1)

|                           |   |                   |        |
|---------------------------|---|-------------------|--------|
| Tue Jan 6 (3:00 – 4:30)   | Quantitative Clinical Research Designs    | Bryant/Birmingham | 90 min |
| Thurs Jan 8 (3:00 – 4:30) | Clinical Trials: Issues in Interpretation | Bryant/Birmingham | 90 min |

#### Arthritis and Osteoporosis (Weeks 2, 3, 4)

|                            |   |                   |        |
|----------------------------|---|-------------------|--------|
| Tue Jan 13                 | Rheumatoid Arthritis (Pathogenesis)                   | Cairns            | 45 min |
| Thurs Jan 15               | Osteoarthritis (Pathogenesis)                         | Pest              | 45 min |
| Tuesday Jan 20             | Rheumatoid Arthritis & Osteoarthritis (Clinical Care) | Barra             | 90 min |
| Thurs Jan 22 (4:30 – 6:00) | Osteoporosis (Pathogenesis & Clinical Care)           | Paul              | 90 min |
| Thurs Jan 29               | <u>Student Presentation / Debate 1</u>                | Bryant/Birmingham |        |

#### Gait Analysis (Weeks 5 & 6)

|                           |                               |        |        |
|---------------------------|-------------------------------|--------|--------|
| Tue Feb 3                 | Introduction to Gait Analysis | Jenkyn | 90 min |
| Thurs Feb 5 (4:30 – 6:00) | Motion Capture lab module     | Moyer  | 90 min |

#### Thursday Feb 12

#### Midterm Exam

Course Committee 120min

#### READING WEEK (Week 7)

Feb 16-20

#### Imaging of Musculoskeletal Conditions (Weeks 7 & 8)

|               |   |                       |        |
|---------------|---|-----------------------|--------|
| Tue Feb 24    | Imaging of Musculoskeletal Conditions 1 | Holdsworth            | 90 min |
| Thurs Feb 26  | Imaging of Musculoskeletal Conditions 2 | Holdsworth            | 90 min |
| Thurs March 5 | <u>Student Presentation / Debate 2</u>  | Holdsworth/Birmingham | 90 min |

#### Pain and Disability in Musculoskeletal Health Research (Weeks 9 & 10)

|              |  |                      |        |
|--------------|--|----------------------|--------|
| Tue Mar 10   | Qualitative Research in MSK Health Research    | Maly                 | 90 min |
| Tue Mar 17   | Measuring Pain and Disability in MSK Disorders | MacDermid            | 90 min |
| Thurs Mar 19 | <u>Student Presentation / Debate 3</u>         | MacDermid/Birmingham | 90 min |

#### Principles of Knowledge Translation and Health Services Research (Weeks 11 & 12)

|                |   |                      |        |
|----------------|---|----------------------|--------|
| Tue March 24   | An Introduction to Health Services Research | Chesworth            | 90 min |
| Thurs March 26 | Economic Evaluation in MSK Health Research  | Marsh                | 90 min |
| Thurs April 2  | <u>Student Presentation / Debate 4</u>      | Chesworth/Birmingham | 90 min |

#### Thursday April 9<sup>th</sup> (Week 13)

#### Final Exam

Course Committee 120 min

#### STUDENT EVALUATION

Student Presentations (30%)  
Lab Module (10%)  
Midterm Exam (30%)  
Final Exam (30%)

**Please Note:** The schedule and procedures are subject to change in the event of extenuating circumstances

#### Academic Honesty:

Academic honesty is a cornerstone of conduct at The University of Western Ontario. We cannot have freedom of expression without integrity. Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offences; please refer to the section on "Scholastic Offences" in the current University Academic Calendar, or on the web at [http://www.uwo.ca/grad/section\\_ten.htm](http://www.uwo.ca/grad/section_ten.htm). Such offences include plagiarism, cheating on an examination, submitting false or fraudulent assignments or credentials, impersonating a candidate, or submitting for credit in any course any academic work for which credit has previously been obtained or is being sought in another course in this University or elsewhere (without the knowledge and approval of the instructor to whom the work is submitted).

Revised December 2014