Queen's University
School of Kinesiology and Health Studies

Course Name: **KNPE 254/3.0** Biomechanical Analysis of Human Movement	**Course Instructors:** Dr. Jessica Selinger	**Contact Hours:** Lectures: 2 x 1.5 hr / 12 weeks Tutorials: 1 x 1.5 hr / 12 weeks
		Prerequisites: KNPE 153/3.0 Level 2 or above in a KINE plan. **Recommended:** ANAT 315/3.0
		Exclusion: KNPE 353/3.0

Course Description:

The purpose of this course is to learn how to reason about and use biomechanical principles to solve problems in human movement. You will learn about fundamental mechanical principles that describe how forces cause movement, spanning from whole-body motions to tissue level processes. Biomechanical techniques and tools will be discussed, with a focus on applications in clinical movement disorders and performance in sport and exercise.

Course Texts:

There is no required textbook for this course. All content will be covered through lecture, tutorials, labs, and content posted to the course webpage.

Learning Outcomes:

- Understand the fundamental mechanical principles and theories that govern human movement.
- Use mechanical principles and equations to solve biomechanical problems.
- Learn how biomechanical tools and techniques are used to measure human movement.
- Learn to think critically and quantitively
- Understand how biomechanics links to other disciplines and how it can be applied to real-world problems.

Course Evaluation:

Lab Assignments (4 x 5%)	20%
Term Test 1	20%
Term Test 2	20%
Final Exam	40%

Course Outline

Torques and Moments of Force	Muscle Mechanics
Angular Kinetics	Biomechanical Technology and Modelling
Tissue Mechanics	