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

- Identify the goals of sport biomechanics and the common tools used to achieve these goals
- Distinguish between linear, angular, and general forms of motion
- Describe the relationships among kinematic and kinetic variables
- Understand and apply the steps of quantitative reasoning
- Solve quantitative problems involving kinematic and kinetic quantities and the relationships between linear and angular variables
- Identify Newton’s Laws of Motion and describe practical examples of the Laws
- Explain how forces create and affect movement
- List the steps involved in both qualitative and quantitative biomechanics analysis of human movement

Welcome to the Biomechanics course! My name is Dr. Paul Kennedy and it is my pleasure to work with you this term. This is an introductory course in biomechanics. Some that have taken physics recently will find that concepts are reviewed throughout. Others that haven’t taken those courses may be overwhelmed at the thought of taking a course about the principles of mechanics. It doesn’t matter what your background is coming into this course. My job, as the instructor, is to provide every student with the foundational knowledge necessary to understand the application of mechanics.

STUDY TIPS..... And other helpful suggestions

- Make a Study Plan
  Schedule so many hours per day or week to keep on top of your coursework. Create goals that are clear and reasonable (achievable).

- Manage Your Time
  Make time for schooling. Estimate how much time you need for studying, working on assignments. But, make sure to set aside some time to unwind.

- Work with Others
  Find a study buddy. Join a study group. Share notes, work on problems together, or create your own tests. Working with others can make learning more enjoyable (and help address any questions you might have).

- Be an Active Learner
  Put your phone away and focus on what is being discussed. Take notes. Try to apply what you learn in the classroom, to something outside the classroom.

- Ask questions
  If you need help, ask for it. If you don’t understand something, please reach out to your instructor.
## CLASS EXPECTATIONS
Summary of some of the key expectations for this course:

### DOWNLOAD
Go to the course website and gather the materials you will need for each lecture. Read ahead, complete any tasks so that you are ready for class.

### ATTEND
It is important to come to class regularly. Synchronous meetings give you another perspective on the material.

### PARTICIPATE
A course is much more rewarding if you fully participate. Get involved in the learning process and participate in activities and discussions.

### RESPECT
Everyone must be treated with respect. Please be mindful of your interactions with others, either on discussion boards or during (virtual) meetings.

### FOCUS
Avoid using electronic devices for anything other than taking notes, or following the lecture. If you need to use your phone, pause the video and return shortly (if it can’t wait).

### CHECK IN
You are responsible for all material covered in class and any information given whether in attendance or not. Contact your instructor if you lose track of what’s been covered.

## COURSE FORMAT
Here is what to expect (look forward to) this term

- Term will be broken down into 5 unit. A test will be held at the end of each unit.
- On-line lectures (videos) will be available to view at your discretion, Synchronous meetings will be made available to discuss and review material from each video.
- Students will be put into small groups (which will provide you with a support system).
- It is important to be prepared for these activities. So, you will be asked to attend synchronous meetings, complete homework assignments, and prepare for discussions by reading the relevant chapter(s).

## READINGS.....
and other useful resources

<table>
<thead>
<tr>
<th>Basic Biomechanics, 9th Edition</th>
<th>Susan Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publisher</td>
<td>McGraw Hill</td>
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http://canvas.ubc.ca
- Find helpful handouts and other classroom materials

http://www.library.ubc.ca
- Find texts and other materials dealing with biomechanics at the Library
EVALUATION

Your final grade will be determined based on your marks from the following assessments. There are NO OPPORTUNITIES TO EARN EXTRA CREDITS. So, please pay attention to the dates and deadlines so that you are prepared to complete the following. And if something arises, please talk to your instructor as soon as possible.

1. **End of Unit Tests**
   Units 1-4 (17.5% each)
   There will be 4 tests during this term, one at the end of each unit. The tests will consist of multiple-choice, short, answer, and problem-solving questions. Each test will ONLY cover material contained within each unit.

2. **End of Unit Test**
   Unit 5 (20%)
   The final unit test will be held during the formal examination period. This test will be similar to the other unit tests. This test will ONLY cover material discussed during the last unit.

3. **Problem-Solving Portfolio**
   (10%)
   There will be 4 problem sets to complete, one at the end of each unit. Each problem set will be worth 2.5%. Marks will be given for showing the work, calculating the correct answer, and explaining the processes used to solve the problem.

COMMUNICATION

When in doubt……ask!!!

**EMAIL**

Questions through email are welcome. I check my email regularly during the week. I will do my best to respond within 24 hours (but not on weekends). Please include your first and last name and course code (KIN 216) in the subject line. Thanks!

**MEETINGS**

Some questions may have to be discussed in a one-on-one meeting. Setting up a time to meet is also a great way to get to know your instructor. Just send me an email and we can always arrange a time to chat that works for both of us.

**WEBSITE**

Announcements, handouts, and other materials are regularly posted on your course website. Please make sure that you are checking the Canvas site regularly and keeping up with the material.
UNIVERSITY POLICIES

Academic Honesty and Standards
Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Breach of those expectations or failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

It is the student's obligation to inform himself or herself of the applicable standards for academic honesty. Students must be aware that standards at the University of British Columbia may be different from those in secondary schools or at other institutions. If a student is in any doubt as to the standard of academic honesty in a particular course or assignment, then the student must consult with the instructor as soon as possible, and in no case should a student submit an assignment if the student is not clear on the relevant standard of academic honesty.

If an allegation is made against a student, the Registrar may place the student on academic hold until the President has made his or her final decision. When a student is placed on academic hold, the student is blocked from all activity in the Student Service Centre.

Resources to Support Student Success
UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on the UBC Senate website.

Academic Accommodation for Students with Disabilities
The University of British Columbia recognizes its moral and legal duty to provide academic accommodation. The University must remove barriers and provide opportunities to students with a disability, enabling them to access university services, programs, and facilities and to be welcomed as participating members of the University community. The University's goal is to ensure fair and consistent treatment of all students, including students with a disability, in accordance with their distinct needs and in a manner consistent with academic principles.

Students with a disability who wish to have an academic accommodation should contact Centre for Accessibility without delay.

Copyright
All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.
SCHEDULE
Topics and assigned readings for each class are listed below, although, this may be subject to change. If you have any questions about what was covered in class please don’t hesitate to contact your instructor.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Th</td>
<td>Sept 9</td>
<td>Course Introduction</td>
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<td>T</td>
<td>Sept 14</td>
<td>Module 1: Introduction to Biomechanics</td>
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<td>Th</td>
<td>Sept 16</td>
<td>Module 2: Defining Force (Lecture)</td>
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<td>Sept 21</td>
<td>Module 2: Defining Force (Problems)</td>
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<td>Module 3: Linear Kinematics (Lecture)</td>
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<td>Module 3: Linear Kinematics (Problems)</td>
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<td>No Class</td>
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<td>Oct 5</td>
<td>Module 3: Linear Kinematics (Group Review)</td>
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<td>Oct 7</td>
<td>Test 1: Linear Kinematics</td>
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<td>Oct 12</td>
<td>Module 4: Linear Kinetics (Lecture)</td>
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<td>Oct 14</td>
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<td>Oct 21</td>
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<td>Module 5: Defining Torque (Lecture)</td>
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<td>Module 6: Angular Kinematics (Lecture)</td>
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<td>Test 3: Angular Kinematics</td>
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<td>Module 7: Angular Kinetics (Group Review)</td>
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<td>Nov 25</td>
<td>Test 4: Angular Kinetics</td>
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<td>Nov 30</td>
<td>Module 8: Biomechanical Analysis (Lecture)</td>
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<td>Dec 2</td>
<td>Module 9: Biomechanics of the Body (Lecture)</td>
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<td>Dec 7</td>
<td>Module 10: Biomechanical Tools (Lecture)</td>
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<tr>
<td>Exam Period (TBD)</td>
<td>Test 5: Applications of Biomechanics</td>
<td>Test on Chapters 1, 2, 3, 4, 6</td>
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