


Course Syllabus

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 <p>POINT LOMA NAZARENE UNIVERSITY</p>	<p>Department of Kinesiology</p> <p>KIN 3027 - Applied Biomechanics</p> <p>Number of Units: 2</p>
<p>Spring 2021</p>	

Meeting days: Asynchronous + Synced Meetings	Instructor: Arnel Aguinaldo, PhD, ATC ("Dr. A")
Meeting times: Asynchronous + Synced Meetings	Phone: 619-849-3007
Meeting location: Zoom (https://pointloma.zoom.us/j/99969516935)	Email: aaguinal@pointloma.edu _(https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=aaguinal@pointloma.edu)
Final Exam: Narrative Review (due 6/10/2021)	Virtual Office Hours _(https://calendar.google.com/calendar/selfsclsstoken=UU04Y2t1MjdITEtPfGRIZmF1bHR8Y2JINzQ0MjVhOTRmYzdIM) (remote or outdoor only)
TA: Tina Stefanovic _(https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=tinastefanovic777@pointloma.edu)	Virtual Office Hours _(https://calendar.google.com/calendar/selfschsstoken=UUhKbXlzNWZGQ2NufGRIZmF1bHR8NjQ3MjZlYmYxMjg1NTI)

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

COURSE DESCRIPTION

This class is designed to provide students with a mix of theoretical concepts and applied problem-solving in various biomechanical applications in human movement. Through the core math, physics, kinesiology, and anatomy classes students have taken to this point, you have been provided a breadth of information that will serve you in learning the basic concepts of kinematics and kinetics of whole body and joint movement.

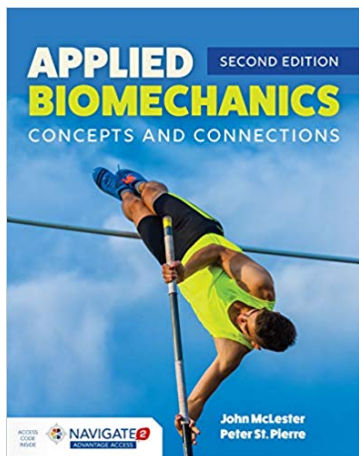
COURSE LEARNING OUTCOMES

At the end of this course, students will be able to:

1. **Explain** the vocabulary, principles, and relationships unique to the disciplines of applied biomechanics.
2. **Articulate** the basic principles of kinematics in quantifying and describing joint movement

2. **Analyze** the basic principles of kinematics in quantifying and describing joint movement.
3. **Identify** the concepts of linear and angular kinetics and their effects on human movement.
4. **Describe** various technology and methods employed to quantitatively measure joint kinematics and kinetics
5. **Apply** biomechanical techniques to evaluate joint movement in clinical-decision making and analyzing human performance
6. **Interpret** movement patterns in basic clinical applications using qualitative biomechanical analyses.
7. **Compare** the kinematic and kinetic patterns between conditions of walking and jumping.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES



McLester, J., St. Pierre, P. (2019). *Applied Biomechanics. Concepts and Connections*. (2nd Edition). Burlington, MA: Jones & Bartlett Learning. [Available on Amazon here](https://www.amazon.com/dp/1284170047/ref=cm_sw_em_r_mt_dp_U_OdwIDbY93H9SJ%20) (https://www.amazon.com/dp/1284170047/ref=cm_sw_em_r_mt_dp_U_OdwIDbY93H9SJ%20)

NOTE: Students are responsible to have the required textbooks prior to the first day of class. Students are also encouraged to begin reading the books in preparation for the class as soon as possible.

This course also utilizes the following online tools (free of charge for students) to facilitate student engagement and enhance your learning experience:

- **Zoom** - Zoom video conferencing will be used for synced meetings and virtual office hours
- **PlayPosit** (<https://knowledge.playposit.com/article/260-the-student-experience-without-an-lms>) - **PlayPosit** (<https://knowledge.playposit.com/article/260-the-student-experience-without-an-lms>) will be used for in-video quizzes and interactive video lectures/tutorials

COURSE CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 2 unit class delivered over 15 weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

Distribution of Student Learning Hours

Category	Time Expectation in Hours
Online Participation in Discussions, Groups, etc.	15
Reading Assignments	10
Written Assignments	15
Other Assignments & Learning Activities	15
Quizzes, Surveys	20
Total Hours	75

ASSESSMENT AND GRADING

ASSESSMENT AND GRADING

- **Assignments:** There will be six assignments worth 10 points each to be scheduled throughout the semester. These assignments will vary in difficulty depending on the module covered that week. Problems from each assignment will be discussed in class or in office hours. (60 pts total)
- **Mid-Term Exam:** A mid-term exam will be administered via Canvas on the date noted below in the course schedule. It will consist of multiple choice and T/F questions, covering the material from the first unit (5 modules). (60 pts total)
- **Lab Report:** Students will have the opportunity to perform a basic gait analysis using kinematic and kinetic data previously collected in the biomechanics lab. A lab guide on how to write this report will be posted on Canvas in Module 10. (30 pts total)
- **Narrative Review:** As part of an effort to gain experience in biomechanics scientific research, each student will be required to complete a literature review on a topic within the fields of sports biomechanics, physical therapy, or gait analysis. This project involves searching and reviewing six biomechanical research articles from peer-reviewed journals relevant to their selected topic and writing up a three-page abstract summarizing their analysis of the topic. (90 pts total)
- **In-Video Quizzes:** The *PlayPosit* web-based tool will be used for in-video quizzes (bulbs), which are interactive videos each embedded with 3-5 questions relevant to the content. At the end of the semester, points are normalized to the maximum of 40 points. For example, if the total points for bulbs at the end of the semester is 100, a student who earns 90 PlayPosit points will receive 36 participation points ($.90 \times 40 = 36$ points). If you do not complete any PlayPosit bulbs, you receive 0 points for that module. (40 pts total)
- **Participation:** In addition to the live synced meetings and syllabus quiz, participation will be measured using module discussions that require you to post a response to the prompt and replies to at least two of your peers. Your posts should be substantive in nature and foster a healthy dialogue between peers about the material. Your initial post should be at least 250 words while replies to peers should be at least 100 words. In some cases, video responses will be welcomed. (20 points total)

ASSESSMENT	POINTS	COURSE OBJECTIVES
Mid-Term Exam	60	1,2,3
Assignments	60	1,2,3,5,6
Lab Report	30	1-7
Narrative Review	90	1-6
In-Video Quizzes (bulbs)	40	1-7
Participation	20	1,2,3,4,6,7
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Total	300	

POINTS	GRADE	POINTS	GRADE
279-300	A	219-227	C
270-278	A-	210-228	C-
258-269	B+	198-209	D+
249-257	B	189-197	D
240-248	B-	180-188	D-

STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization \(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures\)](https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures) to view which states allow online (distance education) outside of California.

INCOMPLETES AND LATE ASSIGNMENTS

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Late submissions of assignments will be accepted for 50% credit. Incompletes will only be assigned in extremely unusual circumstances.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies \(http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278\)](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu (<https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=DRC@pointloma.edu>) or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their

professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all synchronous class sessions is considered essential to optimum academic achievement. If <https://canvas.pointloma.edu/courses/55189/assignments/syllabus>

Regular and punctual attendance at all synchronous class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. In some courses, a portion of the credit hour content will be delivered asynchronously and attendance will be determined by submitting the assignments by the posted due dates. See [Academic Policies](https://catalog.pointloma.edu/content.php?catoid=46&navoid=2650#Class_Attendance) (https://catalog.pointloma.edu/content.php?catoid=46&navoid=2650#Class_Attendance) in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

Asynchronous Attendance/Participation Definition

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](https://www.pointloma.edu/offices/spiritual-development) (<https://www.pointloma.edu/offices/spiritual-development>)

DIVERSITY AND INCLUSION STATEMENT

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: disability, age, socioeconomic status, ethnicity, race, nationality, religion, gender, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups. To help accomplish this:

- If you have a name and/or set of pronouns that differ from those that appear in your official PLNU records, please let me know!
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it.

USE OF TECHNOLOGY

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](https://help.pointloma.edu/TDCClient/1808/Portal/KB/ArticleDet?ID=108349) (<https://help.pointloma.edu/TDCClient/1808/Portal/KB/ArticleDet?ID=108349>) information.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

















ASSIGNMENTS AT-A-GLANCE

















The table below lists our assignments and their due dates. Click on any assignment to review it.






Course Summary:






Date	Details	Due
Mon Mar 1, 2021	 Module 1 Overview	to do: 11:59pm

Date	Details	Due
	 COVID-19 Preparedness https://canvas.pointloma.edu/courses/55189/assignments/621277	due by 11:59pm
	 Live Class Webinar https://canvas.pointloma.edu/calendar?event_id=87637&include_contexts=course_55189	10am to 11:30am
	 Live Kick-Off Session (Module 1) https://canvas.pointloma.edu/courses/55189/assignments/627213	due by 11:59pm
Thu Mar 4, 2021	 Meet & Greet https://canvas.pointloma.edu/courses/55189/assignments/627217	due by 11:59pm
	 Module 1 Discussion Initial Post Due https://canvas.pointloma.edu/calendar?event_id=82203&include_contexts=course_55189	11:59pm
	 Syllabus Quiz https://canvas.pointloma.edu/courses/55189/assignments/627202	due by 11:59pm
	 In-Video Quiz: Biomechanics Overview https://canvas.pointloma.edu/courses/55189/assignments/627223	due by 11:59pm
	 In-Video Quiz: System and Motion Description I https://canvas.pointloma.edu/courses/55189/assignments/627235	due by 11:59pm
Sun Mar 7, 2021	 In-Video Quiz: System and Motion Description II https://canvas.pointloma.edu/courses/55189/assignments/627236	due by 11:59pm
	 Module 1 Discussion https://canvas.pointloma.edu/courses/55189/assignments/627214	due by 11:59pm
Mon Mar 8, 2021	 Module 2 Overview	to do: 11:59pm
Thu Mar 11, 2021	 Module 2 Discussion Initial Post Due https://canvas.pointloma.edu/calendar?event_id=82204&include_contexts=course_55189	11:59pm
	 In-Video Quiz: Functional Movement Screen https://canvas.pointloma.edu/courses/55189/assignments/627224	due by 11:59pm
Sun Mar 14, 2021	 In-Video Quiz: Qualitative Analysis https://canvas.pointloma.edu/courses/55189/assignments/627234	due by 11:59pm
	 Module 2 Discussion https://canvas.pointloma.edu/courses/55189/assignments/627215	due by 11:59pm
Mon Mar 15, 2021	 Module 3 Overview	to do: 11:59pm

Date	Details	Due
Thu Mar 18, 2021	 Live Class Webinar https://canvas.pointloma.edu/calendar?event_id=87638&include_contexts=course_55189	10am to 11:30am
	 Live Class Webinar (Module 3) https://canvas.pointloma.edu/courses/55189/assignments/627207	due by 11:59pm
	 Assignment 1 https://canvas.pointloma.edu/courses/55189/assignments/627197	due by 11:59pm
Sun Mar 21, 2021	 In-Video Quiz: Linear Motion I https://canvas.pointloma.edu/courses/55189/assignments/627229	due by 11:59pm
	 In-Video Quiz: Linear Motion II https://canvas.pointloma.edu/courses/55189/assignments/627230	due by 11:59pm
Mon Mar 22, 2021	 Module 4 Overview	to do: 11:59pm
Thu Mar 25, 2021	 Module 4 Discussion Initial Post Due https://canvas.pointloma.edu/calendar?event_id=82216&include_contexts=course_55189	11:59pm
	 Assignment 2 https://canvas.pointloma.edu/courses/55189/assignments/627203	due by 11:59pm
	 In-Video Quiz: Biceps Curl Kinetics https://canvas.pointloma.edu/courses/55189/assignments/627222	due by 11:59pm
Sun Mar 28, 2021	 In-Video Quiz: Torque and Center of Gravity https://canvas.pointloma.edu/courses/55189/assignments/627237	due by 11:59pm
	 Module 4 Discussion https://canvas.pointloma.edu/courses/55189/assignments/627212	due by 11:59pm
Mon Mar 29, 2021	 Module 5 Overview	to do: 11:59pm
Thu Apr 1, 2021	 Live Class Webinar https://canvas.pointloma.edu/calendar?event_id=87639&include_contexts=course_55189	10am to 11:30am
	 Live Class Webinar (Module 5) https://canvas.pointloma.edu/courses/55189/assignments/627206	due by 11:59pm
	 In-Video Quiz: Angular Motion I https://canvas.pointloma.edu/courses/55189/assignments/627219	due by 11:59pm
Sun Apr 4, 2021	 In-Video Quiz: Bat Swing Analysis https://canvas.pointloma.edu/courses/55189/assignments/627221	due by 11:59pm

Date	Details	Due
Thu Apr 8, 2021	 Module 5 Discussion Initial Post (https://canvas.pointloma.edu/calendar?event_id=82213&include_contexts=course_55189)	11:59pm
Sun Apr 11, 2021	 Assignment 3 (https://canvas.pointloma.edu/courses/55189/assignments/627198)	due by 11:59pm
Sun Apr 11, 2021	 In-Video Quiz: Angular Motion II (https://canvas.pointloma.edu/courses/55189/assignments/627220)	due by 11:59pm
Sun Apr 11, 2021	 Module 5 Discussion (https://canvas.pointloma.edu/courses/55189/assignments/627204)	due by 11:59pm
Thu Apr 15, 2021	 Live Class Webinar (https://canvas.pointloma.edu/calendar?event_id=87640&include_contexts=course_55189)	10am to 11:30am
Thu Apr 15, 2021	 Live Class Webinar (Review Session) (https://canvas.pointloma.edu/courses/55189/assignments/627205)	due by 11:59pm
Thu Apr 22, 2021	 Exam 1 (https://canvas.pointloma.edu/courses/55189/assignments/627199)	due by 11:59pm
Mon Apr 26, 2021	 Module 6 Overview	to do: 11:59pm
Thu Apr 29, 2021	 Live Class Webinar (https://canvas.pointloma.edu/calendar?event_id=87641&include_contexts=course_55189)	10am to 11:30am
Thu Apr 29, 2021	 Live Class Webinar (Module 6) (https://canvas.pointloma.edu/courses/55189/assignments/627211)	due by 11:59pm
Sun May 2, 2021	 Assignment 4 (https://canvas.pointloma.edu/courses/55189/assignments/627196)	due by 11:59pm
Sun May 2, 2021	 In-Video Quiz: Projectiles I (https://canvas.pointloma.edu/courses/55189/assignments/627232)	due by 11:59pm
Sun May 2, 2021	 In-Video Quiz: Projectiles II (https://canvas.pointloma.edu/courses/55189/assignments/627233)	due by 11:59pm
Mon May 3, 2021	 Module 7 Overview	to do: 11:59pm
Thu May 6, 2021	 Module 7 Discussion Initial Post Due (https://canvas.pointloma.edu/calendar?event_id=82214&include_contexts=course_55189)	11:59pm
Sun May 9, 2021	 Assignment 5 (https://canvas.pointloma.edu/courses/55189/assignments/627200)	due by 11:59pm
Sun May 9, 2021	 In-Video Quiz: Work I (https://canvas.pointloma.edu/courses/55189/assignments/627238)	due by 11:59pm

Date	Details	Due
	 In-Video Quiz: Work II https://canvas.pointloma.edu/courses/55189/assignments/627239	due by 11:59pm
	 Module 7 Discussion https://canvas.pointloma.edu/courses/55189/assignments/627216	due by 11:59pm
Mon May 10, 2021	 Module 8 Overview	to do: 11:59pm
Thu May 13, 2021	 Live Class Webinar https://canvas.pointloma.edu/calendar?event_id=87642&include_contexts=course_55189	10am to 11:30am
	 Live Class Webinar (Module 8) https://canvas.pointloma.edu/courses/55189/assignments/627210	due by 11:59pm
Sun May 16, 2021	 In-Video Quiz: Gait Analysis I https://canvas.pointloma.edu/courses/55189/assignments/627225	due by 11:59pm
	 In-Video Quiz: Gait Analysis II https://canvas.pointloma.edu/courses/55189/assignments/627226	due by 11:59pm
Mon May 17, 2021	 Module 9 Overview	to do: 11:59pm
Thu May 20, 2021	 Module 9 Discussion Initial Post Due https://canvas.pointloma.edu/calendar?event_id=82215&include_contexts=course_55189	11:59pm
	 Assignment 6 https://canvas.pointloma.edu/courses/55189/assignments/627201	due by 11:59pm
Sun May 23, 2021	 In-Video Quiz: Jumping Analysis I https://canvas.pointloma.edu/courses/55189/assignments/627227	due by 11:59pm
	 In-Video Quiz: Jumping Analysis II https://canvas.pointloma.edu/courses/55189/assignments/627228	due by 11:59pm
	 Module 9 Discussion https://canvas.pointloma.edu/courses/55189/assignments/627209	due by 11:59pm
Mon May 24, 2021	 Module 10 Overview	to do: 11:59pm
Thu May 27, 2021	 Live Class Webinar https://canvas.pointloma.edu/calendar?event_id=87643&include_contexts=course_55189	10am to 11:30am
	 Live Class Webinar (Module 10) https://canvas.pointloma.edu/courses/55189/assignments/627208	due by 11:59pm
Sun May 30, 2021	 In-Video Quiz: Movement Lab Data Interpretation https://canvas.pointloma.edu/courses/55189/assignments/627231	due by 11:59pm

Date	Details	Due
Fri Jun 4, 2021	 Course Evaluation (Extra Credit) (https://canvas.pointloma.edu/courses/55189/assignments/627218)	due by 11:59pm
Sun Jun 6, 2021	 Movement Analysis Lab Due (https://canvas.pointloma.edu/courses/55189/assignments/627242)	due by 11:59pm
Thu Jun 10, 2021	 Narrative Review (https://canvas.pointloma.edu/courses/55189/assignments/627243)	due by 11:59pm
	 Jeopardy 1 (Extra Credit) (https://canvas.pointloma.edu/courses/55189/assignments/627240)	
	 Jeopardy 2 (Extra Credit) (https://canvas.pointloma.edu/courses/55189/assignments/627241)	