# Auburn University

# College of Education

# School of Kinesiology

# Course Syllabus

## Syllabus for KINE 7620

### Course Information:

Course Number: KINE 7620

Course Title: Principles of Biomechanics in Human Movement

Course Hours: 3 semester hours (Lecture 3)

Prerequisites: KINE 3620 or equivalent

### Faculty Information:

Instructor: Dr Weimar

Office Location: KINE Building 020

Office Hours: M & W 2-3, and by appointment

Email**:**weimawh@auburn.edu

Phone number: 334-844-1468

Zoom ID: Zoom ID: 958 345 2294

### Course Description:

Study of biomechanical principles and laws, and applications of these principles in human movement including sports techniques and daily activities, demonstration of how biomechanics principles and laws being used to advantages in human movement.

### Student Learning Outcomes:

The students will be able to:

1. look to biomechanics for a scientific basis for the analysis of human movement;

2. understand the description, the cause and effect of human movement;

3. use biomechanical principles and law to analyze, evaluate human movement in terms of efficiency and effectiveness

### Course Overview

Week 1. Introduction to Biomechanics and Review Anatomical Terms 1

Week 2. Anatomical Terms 2

Week 3. Anatomical Terms 3

Week 4. Review Mechanical Terms 1

Week 5: Mechanical Terms 2

Week 6: Mechanical Terms 3

Week 7: Midterm

Week 8: Motion Capture Lecture 1 (Linear Kinematics)

Week 9: Motion Capture Lecture 2 (Smoothing)

Week 10: Motion Capture Lecture 3 (Angular Kinematics)

Week 11: Inverse Dynamics: Anthropometry

Week 12: Inverse Dynamics: Lever arms

Week 13: Inverse Dynamics: Foot

Week 14: Inverse Dynamics: Lower Leg

Week 15: Flex time

Final exam will be given during finals week

### EVALUATION METHODS:

#### Course Requirements:

Homework, project, midterm and final exam will be given during this course.

#### Grading and Evaluation Procedure:

Homework......25%

Project………25%

Mid Exam......20%

Final Exam....30%

90 - 100 --- A

80 - 89 --- B

70 - 79 --- C

60 - 69 --- D

Under 60 --- F

For more detailed information about university grading standards, please refer to information on the following link: [Auburn University Undergraduate Academic Policies on Grades (Links to an external site.)](https://www.auburn.edu/cosam/departments/student-services/academic-policies.htm#grades)

**Class Policy Statements:**

Grading Adjustment Requests

All exam and assignment grades will be posted to Canvas. Students will have five business days from the date that the exam/assignment scores are posted on Canvas to send an email to the instructor requesting grade adjustments on their work. To appeal a grade that you have received, please compose and send an email to your instructor writing out the exam or assignment in question, indicating the answer you submitted, and providing a written justification from the reading/class notes/etc. on why you think your answer is correct.

Once received, the instructor may or may not communicate with you regarding your appeal. Ultimately, the instructor will render a decision. If no appeal is sent to the instructor after five business days, the assignment score is final. Failure to monitor your progress as the semester progresses does not warrant a re-grade on assignments evaluated earlier in the semester. Once the 5-day appeal period has passed, students forfeit their right to have the graded material reassessed at a later date.

Late Assignments:

It is very important that students submit work on time, or they will find it very difficult to catch up. All work in the course (e.g., assignments, discussions, exams, quizzes, etc.) will be due by 11:59 pm CT on the date noted on the class calendar. Any assignment that is submitted after the due date will have one letter grade deducted from it per day late. Students should reach out to their instructor immediately to discuss any concerns. In situations where you are experiencing technical difficulties submitting your assignment near the deadline, please consult the Canvas help desk resources available in left navigation. Please work to avoid encountering technical difficulties near the assignment due dates by completing your work ahead of deadlines.

Make up Policy

Students who miss the normal exams will need to contact the instructor and turn in the valid excuse within **48 hours**from the time that the exams were given. The makeup exam schedule is determined by the instructor and will need to be done within ONE week (5 work days) from the time that the exams were given. Students will need to check the class email for the makeup details. Students who miss the makeup without valid excuses will get zero on the exam.

The format, questions and difficulty-level of make-up exams are not guaranteed to be same as the normal exam, which are at the discretion of the instructors. Students are not allowed to choose the make-up dates, formats on their own.

**Valid excuses**include: 1). illness documented by a physician. 2) evidence of personal or family emergency. 3) official university excuses.

**Excuses are only accepted for the exams. No excuses need for general lectures or any bonus credits.**

Communication with Faculty:

At the beginning of each course, make sure that you understand the instructor’s preferred mode of communication and any specific communication protocol. One of the best ways to be effective as a student is to understand the instructor’s expectations and operate within those boundaries. Students should give the instructor **48 hours** to get back to them on any communication, and **one week** for grading turnaround time on major assignments. **The instructor reserves the right to alter these feedback parameters due to contingencies such as holidays, course progress, campus emergencies, weather, holidays, professional activities, etc. with notice provided.** If students have concerns about communication or feedback, they should always go to the professor first. Students should explain their concern as clearly as possible without judgment or emotion. Effective communication is an important skill, and every interaction in their program is an opportunity to develop this skill.

**Your Auburn University email address is the university-approved form of communication between instructors and students.** Follow the steps [in the video linked here  (Links to an external site.)](https://community.canvaslms.com/videos/1072)to set your notifications preferences and specify that all course alerts are routed to your Auburn University email address (userid@auburn.edu). You can contact [Auburn University's OIT Help Desk  (Links to an external site.)](http://www.auburn.edu/oit/helpdesk/)for assistance forwarding mail sent to your Auburn email address to a different email address that you regularly check. Additionally, it is your responsibility to read course announcements sent by your instructor. These are posted in Canvas, and you can configure your notification preferences to receive an email each time a new announcement is posted.

**This course will be supported by Auburn University’s Canvas platform.** The syllabus, class assignments, occasional lectures, test grades, final grades, and important announcements will be posted to the Canvas site for this course. Check the Canvas site for this course frequently.

Instructor Assistance with Course Performance

If you are struggling academically with this class, do NOT wait until the end of the semester to ask for help. Your instructor is here to help you, but cannot provide help unless you communicate the problem. In announcements to the class, your instructor may specify a preferred method of communication. You are strongly encouraged to reach out to your instructor early in the course and follow-up whenever you encounter challenges with the material.

Diversity

In this class everyone will be treated with respect. It is expected that everyone in this class will be respectful in their interactions with the members of this class. Feedback should be helpful and polite. Furthermore, "All people have the right to be addressed and referred to in accordance with their personal identity. In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed...I will do my best to address and refer to all students accordingly and support classmates in doing so as well."

\*Source: University of Michigan, Center for Research on Learning and Teaching

Names and Pronouns: Many people might go by a name in daily life that is different from their legal name. In this classroom, we will refer to people by the names that they go by. Pronouns are a way to affirm someone's identity. They are simply a public way in which people are referred to in place of their name (e.g. "he" or "she" or "they" or "ze" or something else). In this classroom, you are invited to share what pronouns you go by, and we will refer to people using the pronouns that they share.

        \*Source: Auburn University College of Education, Critical Studies Working Group

Academic Integrity

Auburn University has adopted an Honor System proposed by its students and faculty to promote academic integrity and has enacted the following code:

“We, the faculty, instructors, and students of the (University course here) pledge to fulfill our mutual responsibilities to each other and the academic community at large with honor and integrity in order to build and maintain a climate of respect and trust that will enhance our research, teaching, and learning. We will support the Honor System of the School, and will not tolerate activities that undermine academic integrity.”

Academic dishonesty is an offense that will be reported to the Academic Honesty Committee. Please refer to the following document for further information regarding academic honesty: [Auburn University Student Academic Honesty Code](https://sites.auburn.edu/admin/universitypolicies/policies/academichonestycode.pdf)

COVID:

Due to the Coronavirus pandemic, public health measures have been implemented across Auburn’s campus. Students should stay current with these practices and expectations through the campus reentry plan, [A Healthier U (Links to an external site.)](https://ahealthieru.auburn.edu/). The sections below provide expectations and conduct related to COVID-19 issues.

Health and Participation in Class (for days that we will be meeting in person)

We are currently developing a new daily health screener which you will be expected to complete daily.

Your health and safety, and the health and safety of your peers, are my top priorities. If you are experiencing any symptoms of COVID-19, or if you discover that you have been in close contact with others who have symptoms or who have tested positive, you must follow the instructions on the screening app. My hope is that if you are feeling ill or if you have been exposed to someone with the virus, you will stay home to protect others.

Please do the following in the event of an illness or COVID-related absence:

* Notify me in advance of your absence, if possible
* Provide me with medical documentation, if possible
* Keep up with coursework as much as possible
* Participate in class activities and submit assignments remotely as much as possible
* Notify me if you require a modification to the deadline of an assignment or exam
* Finally, if remaining in a class and fulfilling the necessary requirements becomes impossible due to illness or other COVID-related issues, please let me know as soon as possible so we can discuss your options.

Students with questions about COVID-related illnesses should reach out to the COVID Resource Center at (334) 844-6000 or at [ahealthieru@auburn.edu](mailto:ahealthieru@auburn.edu).

Health and Well Being Resources

These are difficult times, and academic and personal stress is a natural result. Everyone is encouraged to take care of themselves and their peers. If you need additional support, there are several resources on campus to assist you:

* COVID Response Team ([ahealthieru.edu (Links to an external site.)](http://www.ahealthieru.edu/))
* Student Counseling and Psychological Services ([http://wp.auburn.edu/scs/ (Links to an external site.)](http://wp.auburn.edu/scs/))
* AU Medical Clinic ([https://cws.auburn.edu/aumc/ (Links to an external site.)](https://cws.auburn.edu/aumc/)

If you or someone you know are experiencing food, housing or financial insecurity, please visit the Auburn Cares Office ([http://aucares.auburn.edu/ (Links to an external site.)](http://aucares.auburn.edu/))

A Healthier U Campus Community Expectations

We are all responsible for protecting ourselves and our community. Please read about student expectations for fall semester, including completing the daily screening app when, ready.

You are expected to (1) take your temperature daily and (2) complete your screener. **You may be asked at any time during class to show your pass.**

Course Expectations Related to Covid-19

* **Face Coverings**: As a member of the Auburn University academic community you are required to follow all university guidelines for personal safety with face coverings, physical distancing, and sanitation. Face coverings are required in this class and in all campus buildings. Note that face coverings must meet safety specifications, be worn correctly, and be socially appropriate.  
  You are required to wear your face coverings at all times. If you remove your face covering or are non-compliant with the university’s [policy on face coverings (Links to an external site.)](https://ocm.auburn.edu/news/coronavirus/updates/20200618-face-masks-required.php?ref=coronavirus), you will be instructed to leave the classroom and will be held to the protocols outlined in the [Auburn University Policy on Classroom Behavior (Links to an external site.)](https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassroomBehavior.pdf). Any student who willfully refuses to wear a face covering and does not have a noted accommodation may be subject to disciplinary action.
* **Physical Distancing**: Students should observe appropriate physical distancing and follow all classroom signage/avoid congregating around doorways before or after class. If the instructional space has designated entrance and exit doors, you should use them. **Students should exit the instructional space immediately after the end of instruction to help ensure social distancing and allow for the persons attending the next scheduled class session to enter.Course Attendance**: If you are quarantined or otherwise need to miss class because you have been advised that you may have been exposed to COVID-19, you will be expected to develop a plan to keep up with your coursework during any such absences.
* **Course Meeting Schedule**: This course might not have a traditional meeting schedule in Fall 2020. Be sure to pay attention to any updates to the course schedule as the information in this syllabus may have changed. Please discuss any questions you have with me.
* **Technology Requirements:**This course may require particular technologies to complete coursework. If you need access to additional technological support, please contact the AU Bookstore at [aubookstore@auburn.edu](mailto:aubookstore@auburn.edu).

Disruptive or concerning classroom behavior involving the failure to wear a face covering, as directed by Auburn University, represents a potential Code of Student Conduct violation and may be reported as a non-academic violation. Please consult the [Classroom Behavior Policy (Links to an external site.)](https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassroomBehavior.pdf).

Course Delivery Changes Related to Covid-19

Please be aware that the situation regarding COVID-19 is frequently changing, and the delivery mode of this course may adjust accordingly. In the event that the delivery method is altered, please be assured that the learning goals and outcomes of the course will not change; however, some aspects of the course will change in terms of the mode of delivery, participation, and testing methods. Those details will be shared via Canvas as soon as possible. Please be prepared for this contingency by ensuring that you have access to a computer and reliable Internet.

**Attendance**. It is expected that students taking a graduate class will attend every class meeting, will

arrive on time and will actively participate in each class. Absences and late arrivals will not be tolerated.

If you must miss class because of illness or other emergency, please try to notify the instructor in

advance. You are still responsible for any work missed during an absence.

**Plagiarism**. There are no group assignments or projects in this course. All exams, homework, projects

and any other written work must reflect the individual efforts of each student. Please refer to the *Tiger Cub* for information regarding academic honesty.

**Cell Phones**. As a courtesy to everyone, please turn off your cell phone during class. If you have a

compelling reason for leaving your phone on, please let me know at the beginning of class. Also, please

do not text–message during class.

**Best Work**. Please take pride in your work and be motivated to do your best work in this class; if you are, you will gain the maximum benefit from the course.

**Disability Accommodations.** Students who need accommodations are asked to arrange a meeting during

office hours the first week of classes, or as soon as possible if accommodations are needed immediately.

If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting,

please contact me by E–mail. Bring a copy of your Accommodation Memo and an Instructor Verification

Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an

appointment with **The Program for Students with Disabilities**, 1228 Haley Center, 844–2096.

**Emergency Contingency statement.** If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation (such as an H1N1 flu outbreak), the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.

Graduate Credit: This course merits graduate credit as you will be sked to perform tasks that apply the material that is presented in class as well as think critically about the implications of the material.