

**Auburn University  
College of Education  
School of Kinesiology  
Course Syllabus**

**1. Course Number:** KINE 7620

**Course Title:** Principles of Biomechanics in Human Movement

**Course Hours:** 3 semester hours (Lecture 3)

**Prerequisites:** HLHP 3620 or equivalent

**3. Text:** Enoka, R.M. (1994). Neuromechanical Basis of Kinesiology (2nd Ed.). Human Kinetics, Champaign, IL.,

**4. 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.

**5. Course Objectives:** 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;

**6. Course Contents:**

Week 1. Introduction to Biomechanics and Kinesiology & Terms  
used in Biomechanics - prepared by instructor  
Week 2. Review Planes, Axis & Jt Actions, Vectors - Chapter 1  
Week 3 Graphical Relationships - Chapter 1  
Week 4. Angular Kinematics: Angular motion vector,  $\theta$ ,  $\Omega$ ,  $\alpha$  - Chapter 1  
Week 5. Angular Kinematics: Moving on a curve path, relationship - Chapter 1  
Week 6. Linear Kinetics: Newton's three laws and law of gravity - Chapter 2  
Week 7. Linear Kinetics: Impulse, friction, work, power & energy - Chapter 2  
Week 8. Angular Kinetics: Couple, moment, lever, & center of gravity - Chapter 2  
Week 9. Angular Kinetics: Analogues of Newton's laws of motion - Chapter 2  
Week 10. Static model: One and two segments – Chapter 3  
Week 11. Dynamic model: One and two segments – Chapter 3  
Week 12. Analysis of Daily Activity: Standing & walking - Chapter 4  
Week 13. Analysis of Sport Techniques: Running, & jumping – Chapter 4  
Week 14 Analysis of Sport Techniques: Throwing, & kicking - Chapters 15 & 16  
Week 15. Motor Components - Chapter 6

**7. Course Requirements:**

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

**8. Grading and Evaluation Procedure:**

Homework.....25%	90 - 100 --- A
Project.....25%	80 - 89 --- B
Mid Exam.....20%	70 - 79 --- C
Final Exam.....30%	60 - 69 --- D
	Under 60 --- F

## 9. Class Policy Statements:

Participation: Students are expected to participate in all class discussions and participate in all homework and laboratory exercises. It is the student's responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work.

Attendance/Absences: Attendance is required at each class meeting. If an exam is missed, a make-up exam will be given only for University-approved excuses as outlined in the Tiger Cub. Arrangement to take the make-up exam must be made in advance. Students who miss an exam because of illness need a doctor's statement for verification of sickness and should clear the absence with the instructor the day they return to class. Other unavoidable absences from campus must be documented and cleared with the instructor **in advance**.

Unannounced quizzes: There will be no unannounced quizzes.

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 alternative 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 at 1244 Haley Center, 844-2096 (V/TT).

Honesty Code: The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

Professionalism: As faculty, staff, and students interact in professional settings, we are expected to demonstrate professional behaviors as defined in the College's conceptual framework. These professional commitments or dispositions are listed below:

- Engage in responsible and ethical professional practices
- Contribute to collaborative learning communities
- Demonstrate a commitment to diversity
- Model and nurture intellectual vitality