DEPARTMENT OF HEALTH AND HUMAN PERFORMANCE
HHPK 335 Kinesiology and Biomechanics
Spring 2025 – NHS 162 / NHS 165 (Lab)

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REQUIRED TEXT: McGinnis, PM. Biomechanics of Sport and Exercise, 4th ed., Champaign, IL: Human Kinetics. ISBN: 1492592331
HHPK 335 Lab Manual – Purchase in the ETAMU Bookstore

Course Description:

A study of human musculoskeletal anatomy and principles of biomechanics. Prerequisite BSc 251, or consent of instructor. This course emphasizes the effects of joint structures and muscles on movement while providing an introduction to the principles of biomechanics.

Student Learning Outcomes:

By the end of the course, the successful student should be able to**:**

1. Explain the importance of biomechanics in the analysis of sport and exercise.
2. Describe Newton's laws of motion and how they apply to exercise and sport.
3. Differentiate between kinetic and kinematic quantities for both linear and angular motion.
4. Apply the correct kinetic or kinematic equation to solve basic word problems in biomechanics.
5. Detail the factors that affect technique improvement and injury development in human movement.
6. Compare qualitative and quantitative techniques for analyzing human movement.
7. Demonstrate how the neuro-musculoskeletal system functions to affect human movement.
8. Apply the biomechanical principles essential for improving performance and reducing injury.
9. Describe how improper technique limits the ability of the human body to produce effective movement.
10. Explain the importance of research in analyzing human movement.

Course Requirements:

Class Participation, Group/ Homework Activities, Quizzes

The student will participate in several class, group, and homework activities throughout the semester. There will be weekly quizzes, typically on Monday, during the first 10 minutes of class. If you are later than 10 minutes to class, you will receive a zero for the quiz. Student participation will be averaged into this category. All **attendance** and activities will be worth 250 points (or **25% of your final grade**).

Late Work / Absences

No late work will be accepted without University accepted exceptions: documented illness, documented death in the family, documented court date. This includes missing classes, quizzes / tests.

Exams:
Students will take 2 tests throughout the semester worth 150 points each. Tests will cover lectures, class activities, and the book. Makeup tests (even for excused cases) will be all essay.
(300 points, **30% of final grade**)

DARI Motion Analyses:
DARI Motion equipment and software is used for comparison of motion pattern differences to an existing sport for biomechanical properties of the sport. The project will be divided into multiple sub-assignments throughout the semester. Pay attention to due dates for each part. Failure to meet a deadline will result in a zero for THAT PART ONLY. **(This project counts 20% of your grade) DARI Motion Analysis Project DUE April 25th, 2025**

Laboratory Experiences:
You must attend all labs. All lab write-ups are required and are due dates as indicated by the GTA. One of our departmental graduate assistants will conduct labs and grade all lab write-ups. Laboratory write-ups will consist of **25% of your final grade in lecture**.

Course Grading:

1. Class, group, homework, quizzes	250 points	25%
2. Exams (2) Midterm and Final	300 points	30%
4. DARI Motion Analysis	200 points	20%
5. Labs	250 points	25%
Total:	**1000 points**	**100%**

Grading Scale:

100 – 90%	**A**
89 – 80%	**B**
79 – 70%	**C**
69 – 60%	**D**
59 – 0%	**F**

Minimal Technical Skills Needed

Using the learning management system, using Microsoft Word, PowerPoint, and Excel, using university email, and using Google Docs / Slides.

TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however,

D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or **point** release of that major version) and the previous major version of iOS (the latest minor or **point** release of that major version). For example, as of June 7, 2017, D2Lsupports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
    - 512 MB of RAM, 1 GB or more preferred
    - Broadband connection required courses are heavily video intensive
    - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution

- You must have a:
    - Sound card, which is usually integrated into your desktop or laptop computer
    - Speakers or headphones.
    - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.

- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: JAVA web site http://www.java.com/en/download/manual.jsp

- Current anti-virus software must be installed and kept up to date.

Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.
JavaScript is enabled.
Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
    - Adobe Reader https://get.adobe.com/reader/
    - Adobe Flash Player *(version 17 or later)* https://get.adobe.com/flashplayer/
    - Adobe Shockwave Player https://get.adobe.com/shockwave/
    - Apple Quick Time http://www.apple.com/quicktime/download/

- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu**.**

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

Brightspace Support

Need Help?

Student Support

If you have any questions or are having difficulties with the course material, please contact your Instructor

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words "click here" to submit an issue via email.

System Maintenance

Please note that on the 4th Sunday of each month there will be System Maintenance which means the system will not be available 12 pm-6 am CST.

Interaction with Instructor Statement

My response time to emails may be as long as 48 hours. Please be patient. Grades for assignments will be posted no later than 1 week after the submission deadline.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

COURSE POLICIES

A. **LATE ASSIGNMENTS: Late assignments will NOT be accepted**. All assignments are due at the beginning of class on the date they are due. If you know that you will not be able to attend class on a day that an assignment is due, please let me know and make plans to turn in the assignment before the due date. All assignments turned in after the due date will be considered late.

B. CLASS ATTENDANCE: Attendance to these sessions in not mandatory, BUT HIGHLY ADVISED. This class is exceptionally difficult to try and navigate on your own. Questions will be directed to the class and individuals. BE PREPARED TO ANSWER.

C. Any student *missing an exam or assignment* without prior arrangement will receive a *score of zero*.

D. You MUST check your e-mail regularly in case I need to communicate with you. I will not e-mail you junk, and I request that you do the same for me. You may only use your university email. No private email addresses will be included in the group message system.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.

http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette
http://www.albion.com/netiquette/corerules.html

TAMUC Attendance
For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity
Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

PLAGIARISM/ACADEMIC DISHONESTY: Texas A&M University-Commerce does not tolerate **plagiarism** and other forms of academic **dishonesty**. Conduct that violates generally accepted standards of academic honesty is defined as academic dishonesty. "Academic dishonesty" includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one's own), cheating on exams or other course assignments, collusion (the unauthorized collaboration with others in preparing course assignments), and abuse (destruction, defacing, or removal) of resource material. Be aware that the intent to deceive the reader does not have to be present for plagiarism to occur. For more information, please go to http://www.plagiarism.org/.
If you are in any doubt as to whether your work constitutes plagiarism or academic dishonesty, please discuss this with me confidentially.

STUDENTS WITH DISABILITIES: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, the legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax: (903) 468-8148
StudentDisabilityServices@tamuc.edu

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to ((http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.

AI Use in Courses

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty
13.99.99.R0.10 Graduate Student Academic Dishonesty

HHPK 335: Kinesiology and Biomechanics
Spring 2025

Tentative Itinerary (75%-does not include labs)

Week	Chapters	Topics and Page Numbers	Assignments
1	Intro	Introduction to Biomechanics	
2	1	Forces: Maintaining Equilibrium or Changing Motion	Quiz 1
3	2	Linear Kinematics: Describing Objects in Linear Motion	Quiz 2
4	3	Linear Kinetics: Explaining the Causes of Linear Motion	Quiz 3
5	4	Work, Power, and Energy: Explaining the Causes of Motion Without Newton	Quiz 4
6	5	Torques and Moments of Force: Maintaining Equilibrium or Changing Angular Motion	Quiz 5
7	6	Angular Kinematics: Describing Objects in Angular Motion	Quiz 6
8	7	Angular Kinetics: Explaining the Causes of Angular Motion	Quiz 7
MARCH 5th – In Class	**Midterm**	**Mid-Term Exam – Ch. 1 - 7**	**Mid-Term Exam**
		Spring Break – No Classes 3/10 – 3/14	
9	8	Fluid Mechanics: The Effects of Water and Air	Quiz 8
10	9	Mechanics of Biological Materials: Stresses and Strains on the Body	Quiz 10
11	10	The Skeletal System: The Rigid Framework of the Body	Quiz 11
12	11	The Muscular System: The Motors of the Body	Quiz 12
13	12	The Nervous System: Control of the Musculoskeletal System	Quiz 13 **DARI Paper Due 4/25**
14	13	Qualitative Biomechanical Analysis to Improve Technique	Quiz 14
15	14-15	Qualitative Biomechanical Analysis to Improve Training AND Understand Injury Development	Quiz 15 and
May 9th @ 10:30am		**Final Exam – IN PERSON**	**Final Exam**