BMEN 5320 Advanced Biomechanics

Course Description

Advanced biomechanics will introduce real-world application of biomechanical concepts including musculoskeletal injury, modeling, and dynamic models of gait. This course will emphasis practical aspects of biomechanical analysis and data collection to understand the mechanical properties of the human body.

Instructor Contact

Name: Rita M. Patterson, PhD
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Name: Sarah Moudy, PhD
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Communication Expectations: Please use email to contact the instructors. Office hour requests will be performed over zoom meetings in 15-30min intervals. The instructors will try to respond to emails within 2 business days, however, please note that this may not always be possible. The instructors will not respond to emails after 7PM or on the weekends.

The instructors will try to post grades for assignments within 7 business days. Grading criteria is outlined below.

Please follow these guidelines when communicating with the instructors and fellow classmates via email or on the discussion boards: Online Communication Tips (https://clear.unt.edu/online-communication-tips). Here are some general guidelines:

- Treat your instructor and classmates with respect in email or any other communication.
- Always use your professors' proper title: Dr. or Prof., or if in doubt use Mr. or Ms.
- Use clear and concise language.
- Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING.
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
- Be careful with personal information (both yours and other's). Do not send confidential information via e-mail
- Check the syllabus before asking a question about the course and let the instructor know you checked the syllabus before asking. Instructors put a lot of time into making syllabi as comprehensive as possible for students.
- Use a descriptive subject line to get the instructor's attention. Instructors receive a lot of emails and a descriptive subject line helps them identify student inquiries more efficiently.

Course Structure

All course information is provided in this syllabus and online in Canvas.

BMEN 5320 will be delivered online consisting of synchronous and asynchronous learning opportunities. Lectures will be given in real-time during the schedule course time. This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

This course also includes several group and independent assignments (labs, discussion boards, and final project) and one exam will be set. Further information on these assignments and course structure is provided below and on Canvas.

Course Prerequisites or Other Restrictions

Graduate standing or instructor approval. A background knowledge of anatomical structures is recommended.

Course Objectives

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

1. Understand mechanical properties of bones and muscle and how these properties are associated with age, injury, weight, balance, speed, and flexibility.
2. Understand the models of locomotion, including walking, running, and jumping, and be able to apply these theories to other movement tasks
3. Discuss the limitations of equipment used to collect biomechanical data
4. Apply data analysis techniques to answer a research question
5. Critically evaluate literature

Course Requirements

This course includes the following assignments:

Assignment	Percentage of Final Grade
Lab Assignments • 7 labs in total	50%
Discussion Boards • 4 Discussion Forums includes: ○ Participation @ 50% ○ Written Critical Evaluation @ 50%	10%
Final Project • Written Paper @ 70% • Oral Presentation @ 30%	20%
Final Exam	20%
Total Points Possible	100%

Assignment due dates are included here and on Canvas:

Assignment	Due Date
Lab Assignment 1	09/08/2020
Discussion Board 1	09/11/2020
Lab Assignment 2	09/22/2020
Lab Assignment 3	09/29/2020
Discussion Board 2	10/2/2020
Lab Assignment 4	10/13/2020
Lab Assignment 5	10/20/2020
Discussion Board 3	10/23/2020
Lab Assignment 6	11/3/2020
Discussion Board 4	11/6/2020
Final Project: Paper Due	11/11/2020
Lab Assignment 7: Sport Application Lab	11/17/2020
Final Project: Presentation Due	11/18/2020
Final Exam	TBD

Lab assignments are opened on Monday's (if a lab is assigned for that week) and are due the following Tuesday.

Discussion boards will be open for the whole week (M-F), and will close on the Friday due date listed above at 5PM.

All assignment instructions are posted on Canvas.

Grading

The following grading scale (A-F) will be used to calculate the final grade:

A = 90 – 100%

B = 80 – 89.9%

C = 70 – 79.9%

F < 69.9%

Assignment grades will start at 100% and points will be detracted. This means that, even if all questions were answered incorrectly, you will still receive a grade above 0 for the assignment. You will receive a grade of 0 if you do not attempt the assignment. Partial credit will be given were appropriate. Specific grading for each assignment are included in that assignment's instructions. Please refer to the particular assignment on Canvas for detailed information.

Late work will be accepted at -10% each day it is late for up to 4 days. After this time, late work will not be accepted.

There are no extra credit opportunities for this course. Please do not request extra credit work.

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course.

Course Policies

Assignment Policy

Assignment due dates and grading procedures are stated above and with each assignment on Canvas. Upload instructions, i.e. how and what to upload on Canvas for grading, are dependent on the assignment and included in the assignment instructions. Read the instructions carefully.

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

Technology-related issues such as Internet access, submitting the wrong file, or problems with personal computers will not excuse a late submission for non-time sensitive assignments (e.g. discussion boards, labs, final project). Plan ahead and finish your assignments with time left to submit. The student assumes the risk of last-minute electronic submission.

Examination Policy

Details for the final exam will be provided later in the semester.

Instructor Responsibilities and Feedback

The instructors are, first and foremost, responsible for your growth and learning throughout this course. To aid in this, the instructors will:

- Provide clear instructions for projects and assignments
- Be transparent on the grading procedures
- Answer questions about the course and identify additional resources as necessary
- Ensure course content is up to date with the latest literature

Late Work

Late work will be accepted at -10% each day it is late for up to 4 days. After this time, late work will not be accepted.

Attendance Policy

Due to the online learning format, attendance is not required for this course to accommodate all types of student learners. However, the lectures will have interaction based content in the form of polls, and breakout discussions which will aid in understanding the concepts of this course. ***It is highly encouraged to attend the lectures.***

Syllabus Change Policy

The syllabus is a guide for this class but is subject to change. If changes to the course are made, these modifications will be posted on Canvas announcements and discussed in lecture.

Getting Help

Success in an Online Course

While the online classroom shares many similarities with the face-to-face classroom, success in online education requires certain skills and expectations that you may not be aware of. Here is a link to some tips, "How to Succeed as an Online Student" (https://clear.unt.edu/teaching-resources/online-teaching/succeed-online).

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8am-9pm
Telephone Availability:
- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- UNT Care Team (https://studentaffairs.unt.edu/care)
- UNT Psychiatric Services (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)

Other student support services offered by UNT include

- [Registrar](https://registrar.unt.edu/registration) (https://registrar.unt.edu/registration)
- [Financial Aid](https://financialaid.unt.edu/) (https://financialaid.unt.edu/)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (https://studentaffairs.unt.edu/student-legal-services)
- [Career Center](https://studentaffairs.unt.edu/career-center) (https://studentaffairs.unt.edu/career-center)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (https://edo.unt.edu/multicultural-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (https://studentaffairs.unt.edu/counseling-and-testing-services)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (https://edo.unt.edu/pridealliance)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/food-pantry) (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services
- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (https://clear.unt.edu/canvas/student-resources)
- [Academic Success Center](https://success.unt.edu/asc) (https://success.unt.edu/asc)
- [UNT Libraries](https://library.unt.edu/) (https://library.unt.edu/)
- [Writing Lab](http://writingcenter.unt.edu/) (http://writingcenter.unt.edu/)
- [MathLab](https://math.unt.edu/mathlab) (https://math.unt.edu/mathlab)

UNT Policies

Academic Integrity Policy
Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation.]

ADA Policy
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/) (https://disability.unt.edu/).

Emergency Notification & Procedures
UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct (https://deanofstudents.unt.edu/conduct) to learn more.

Access to Information - Eagle Connect

Students' access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail Eagle Connect (https://it.unt.edu/eagleconnect).

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (http://spot.unt.edu/) or email spot@unt.edu.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off

campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying

students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](https://policy.unt.edu/policy/07-002) (https://policy.unt.edu/policy/07-002).

Use of Student Work

A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student's permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student's written permission.

Download the UNT System Permission, Waiver and Release Form

Transmission and Recording of Student Images in Electronically-Delivered Courses

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.

2. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.

3. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students' images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

   Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.