Course	BMEN 6v87 and MECH 6v69
Course Title	Communication in Biomechanics and Mechanobiology
Professor	Kristin S. Miller, Ph.D.
Term	
Meetings	
Office Phone	972-883-4679
Office Location	NSERL 4.706
Email Address	Kristin.Miller@utdallas.edu
Office Hours	Mondays 2:30-3:30pm CST via Microsoft Teams
Other Information	Additional office hours available by appt – setup by UTD email
Pre-requisites, Co-requisites, & other restrictions	Graduate standing.
Course Description	This course will leverage biomechanics and mechanobiology topics to teach engineers how to discover, analyze, and disseminate knowledge to multidisciplinary audiences. Communication methods for professional development such as written and oral presentations. Writing proposals, journal papers, and dissertations. Oral presentation of research, proposals, and informal presentations. Selecting a research topic, reviewing literature, generating hypotheses, writing study designs. This course will discuss methods for writing clearly and concisely, improve oral presentations, critically analyze peer-reviewed journal articles, and practical guidelines for preparing journal papers for publications, dissertations, and proposals for funding. This course will be delivered in hybrid format using a combination of synchronous instruction and asynchronous instruction via eLearning. Internet access and a computer are required to access eLearning, participate in synchronous hybrid sessions, and all online course content.

Learning Outcomes

Students will critically analyze peer reviewed journal articles to explore contemporary issues in biomechanics and mechanobiology. *Master's Program Student Outcome A. Broad knowledge of biomedical engineering: Students will demonstrate a broad knowledge of biomedical engineering and a focused understanding of their area of expertise.*

Students will improve and iteratively refine oral presentations. *Master's Program Student Outcome C. Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.*

Students will learn practical guidelines for preparing journal articles and conference proceedings. *Master's Program Student Outcome C. Communicate effectively and work collaboratively: Students will communicate effectively and work both collaboratively and independently.*

Students will design and articulate a novel research proposal. *Master's Program Student Outcome B. Develop solutions to practical problems in biomedical engineering: Students will apply their knowledge and analytical skills to create effective and novel solutions to practical problems in biomedical engineering.*

Required Texts & Materials

Style and Ethics of Communication in Science and Engineering. Jay D. Humphrey & Jeffrey W. Holmes, Morgan & Claypool, 2018. https://www.morganclaypool.com/doi/abs/10.2200/S00128ED1V01Y200809ENG009 (**Required** - free opensource pdf if on University VPN)

Additional reading assignments for journal clubs will be added to the calendar.

From the percentage points, letters grades will be assigned accordingly

Grading:

All graded assignments and examinations will be weighted as follows:

Quizzes	5 %
Homework assignments	15 %
Journal Club Presentations and Discussion	25 %
Project Presentations and Discussion	25 %
Case Studies	10 %
Research Proposal and Checkpoints	20 %
TOTAL	100 %

Final grades will be assigned according to the following thresholds:

A+	97 - 100%	B+	87 – 89.9%	C+	77 – 79.9%	D+ 67 – 69.9%
A	93 - 96.9%	B	83 – 86.9%	C	73 – 76.9%	D 63 – 66.9%
A-	90 - 92.9%	B-	80 – 82.9%	C-	70 – 72.9%	D- 60 – 62.9%
						F <60.0

Class Materials	The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Class Attendance	The University's attendance policy requirement is that individual faculty set their course attendance requirements. **Regular and punctual class attendance is expected.** Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes. Faculty have the discretion to set an attendance policy for their in-person meetings, but the absences due to COVID-19 will not be counted against a quarantined student.
Class Participation	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. **A portion of the grade for this course is directly tied to your participation in this class.** It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Class Recordings	Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct. The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.
Life Policy	Life happens and personal situations can introduce complications, especially during a pandemic. Please talk to the instructor if you need assistance regarding class or class assignments. The instructor wants you to succeed and early communication is key.
Make-up Exams	Missed exams or project presentations, etc without advanced, written notice to the instructor's UTD email will received a zero. Missed

	exams/presentations with prior, written notification via UTD email for documented reasons (E.g., illness with doctor's note) can be replaced by a make-up assignment. The email reply documenting acceptance of reason for missing or rescheduling the assignment will set the time and nature of the make-up.
Late Work	All assignment due dates will be listed on eLearning. Assignments turned in after the due date and time will be assessed a penalty of 20% per 24 hrs. Email the assignment to the instructor's UTD email directly if you experience or expect an error submitting an assignment on eLearning. Late work will not be accepted without the prior consent of the instructor, with allowances for exceptional documented circumstances. In such circumstances, late work will be dealt with on a case by case basis. Contact the instructor by UTD email as soon as practical if these circumstances may apply to you. The email reply documenting acceptance of reason and documentation for late work will set a new deadline.
University Closure	In the event of emergency university closure due to weather-related or other reasons, all assignments will be canceled and/or moved to other due dates when the university re-opens. Please keep in mind that in event of power outages etc, the instructor likely also does not have access to change assignment due dates. Noting that assignments will only be due when the university is open.
Classroom Citizenship	Be respectful of your peers at all times. Keep discussion comments (both in person and online discussion board) constructive and on-topic.
Cheating	Do not cheat. Do not copy assignments, do not post assignments or make answers public, do not upload research data provided to complete projects, do not plagiarize, do not use the internet or outside sources when you are not allowed to (and ensure that you properly reference them when you are allowed to). If the instructor suspects academic dishonesty, they will follow UTD procedures with the Office of Community Standards and Conducts (OCSC) from which point forward the instructor will no longer be involved in the investigation or results. The instructor will not notify a student of a report to OCSC, nor will they discuss pending investigations with the student.
Comet Creed	*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:* *"As a Comet, I pledge honesty, integrity, and service in all that I do."*
Academic Support Resources	*The information contained in the following link lists the University's academic support resources for all students.* *Please go to http://go.utdallas.edu/academic-support-resources.*
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the sections regarding the credit/no credit grading option and withdrawal from class.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

Technical Requirements	In addition to confident level of computer and internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. List of topics in order of appearance listed below.

1. Identifying and Breaking Down Peer-Reviewed Research Articles
2. How to discuss and establish expectations with your supervisors
3. Leading and participating in journal clubs
    a. Selecting a research topic
    b. Reviewing literature
    c. Generating hypotheses
    d. Writing study designs
4. How to choose a model system
    a. ARRIVE guidelines
    b. Experimental Design and Key Biological Variables
5. Graphics and storytelling
    a. 3 slide intro
    b. Qual quad chart
6. How to write a methods section
7. Graphics and results sections
8. Writing strong discussion sections
9. Introductions and storytelling
10. Critical editing: verse tense and active voice
11. Oral presentation best practices
12. Proposal preparation guidelines
13. Peer review and practice evaluations
14. Writing response to reviewers for peer review publications
15. Writing a strong specific aims page
16. Iterative refinement of research strategy