

BioInspiration WN 2022 ROB/MECHENG 599

[Jump to Today](#)

 [Edit](#)

Please note that the content here may change to accommodate the unpredictability of this semester

Instructors:

Lecture: Prof. Talia Y. Moore

Online office hours on [gather.town](#).  [_](https://gather.town/invite?token=ZdN8RAHc%20) Password: BioDesign. Wed: 5pm-6pm

Lab: Pouyan Firouzabadi, GSI

Online office hours on [gather.town](#)  [_](https://gather.town/app/yhbQPPwuxb3VDNVX/Office) Password: BioDesign Mon: 1pm-2pm

Course Communication:

- Only email your instructors for health- or emergency-related matters.
- All assignments will be posted and submitted via Canvas
- We will be using **Piazza** for class discussion. The system is highly catered to getting you help quickly and efficiently from classmates, the TA, and instructors. **Rather than emailing the teaching staff**, we encourage you to post your questions on Piazza. Sign up link:
- You can send private messages to instructors on Piazza. Please do this instead of emailing professors directly for all non-health emergency related matters.

[Schedule of Lecture Topics](#)

<https://docs.google.com/spreadsheets/d/1DRUJz4NLqVjXDx-gm7oszl0XYtBCVsEO9xa8pVIRxaQ/edit?usp=sharing>

Course Format: In Person (as long as it is safe)

Lectures: TuTh 1:30PM - 2:30PM in 1050 FMCRB (Robotics)

Labs: Tu 2:30PM - 3:30PM in 1150 FMCRB (Robotics)

Closed toed shoes and long pants required in lab. You must register for BOTH lecture and lab.

You will have access to the lab space outside of your designated lab time.

COVID 19 Considerations:

COVID-19 vaccinations are required for all University of Michigan students, faculty and staff across all three campuses, including Michigan Medicine. This includes those working or learning remotely.

Masks required. Anyone without a mask will be offered a mask. Anyone wearing a mask improperly (not over both nose and chin), will be asked to adjust their mask. If anyone refuses to wear a mask properly during the class, they will be asked to leave. If the instructors feel uncomfortable being in the lecture hall with an improperly masked individual, the class will be dismissed and lecture will resume on Zoom.

For students, **classroom spaces should not be used for eating/drinking.** Students may eat at other locations within buildings adhering to distancing requirements according to their vaccination status.

IF YOU FEEL SICK, if you have been traveling, or if you suspect you have been exposed to someone who has COVID 19, **PLEASE DO NOT COME TO CLASS.** Please see these [university resources](https://campusblueprint.umich.edu/prevention-testing-care/testing/covid19-testing/?utm_source=Engin%20Update%20Fall%202021&utm_campaign=dde963167e-EMAIL_CAMPAIGN_2018_12_13_02_33_COPY_01&utm_medium=email&utm_term=0_77986d5a13-dde963167e-278510084). [↗](https://campusblueprint.umich.edu/prevention-testing-care/testing/covid19-testing/?utm_source=Engin%20Update%20Fall%202021&utm_campaign=dde963167e-EMAIL_CAMPAIGN_2018_12_13_02_33_COPY_01&utm_medium=email&utm_term=0_77986d5a13-dde963167e-278510084)
(https://campusblueprint.umich.edu/prevention-testing-care/testing/covid19-testing/?utm_source=Engin%20Update%20Fall%202021&utm_campaign=dde963167e-EMAIL_CAMPAIGN_2018_12_13_02_33_COPY_01&utm_medium=email&utm_term=0_77986d5a13-dde963167e-278510084) We can accommodate remote learning in these ways:

- All lectures will be recorded and posted to this Canvas site. Lecture participation for remote interactions will be measured using the Perusall tool.
- If we must switch to remote labs, lab supplies will be delivered to your home and must be returned upon completion of the lab activity. You will still be expected to work collaboratively with your teammates.
- Labs will be equipped with computing stations to facilitate Zoom-based teamwork.

If you get sick, please contact us as soon as possible so that we can adjust our expectations for your assignments. This will occur on a case-by-case basis.

If the county or the university initiates a stay-at-home order, we are prepared to switch to an online-only format.

In the event of an exposure, all participants will be notified so that we can all get tested. The identity of those who test positive will not be shared.

Grading:

All assignments are a blend of technical and technical communication content. Rubrics will be posted for each assignment.

- 5% Class Participation and surveys
- 20% Midterm (in-class multiple choice)
- 10% Discovery Decompositions

- 5% Discovery Decomposition presentation
- 10% Team Legged Robot Project
- 10% Team Soft Robot Project
- 10% Team Gecko Project
- 30% Team Final Design Project (5 min team video)
- Extra points for subreddit!
- Extra points for Prosthetic Hand Project!

Our absolute scale is 100-90 A; 90-80 B; 80-70 C; 70-60 D; <60 F.

All assignments are due on Mondays at midnight, except for the final project.

Late Assignments and Emergencies:

If you find yourself facing an unforeseen emergency, please contact us as soon as possible to let us know. Only a documented illness or some other unforeseeable emergency will allow us to grant you a due date for a design assignment that is later than what is posted on this syllabus or in a Canvas Announcement. Anticipated events (such as a scheduled vaccination or homework for another class) do not qualify as acceptable reasons for turning in your assignment late, as you can and should plan ahead and turn your assignment in early.

If your assignment is late, please still submit as soon as possible. You will lose a point for each day late. Assignments will be available for late submission up to 7 days after the original due date.

Academic accommodations:

Please contact the Office of Services for Students with Disabilities at least 2 weeks before the midterm so that we can make accommodations.

Surveys:

You will be asked to participate in a series of surveys and self-reports to help improve the course. Surveys relating to the design projects will be included in the project grade. Surveys relating to the course overall will be anonymous and will be included in the participation grade.

Policies:

Diversity, Equity, and Inclusion:

We consider this classroom to be a place where you will be treated with respect, and we welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. We are dedicated to helping each of you achieve all

that you can in this class. We may, either in lecture or smaller interactions, accidentally use language that creates offense or discomfort. Should we do this, please contact us and help us understand and avoid making the same mistake again.

Honor code:

We expect students to act in accordance with the University of Michigan Engineering Honor code, available in the sidebar.

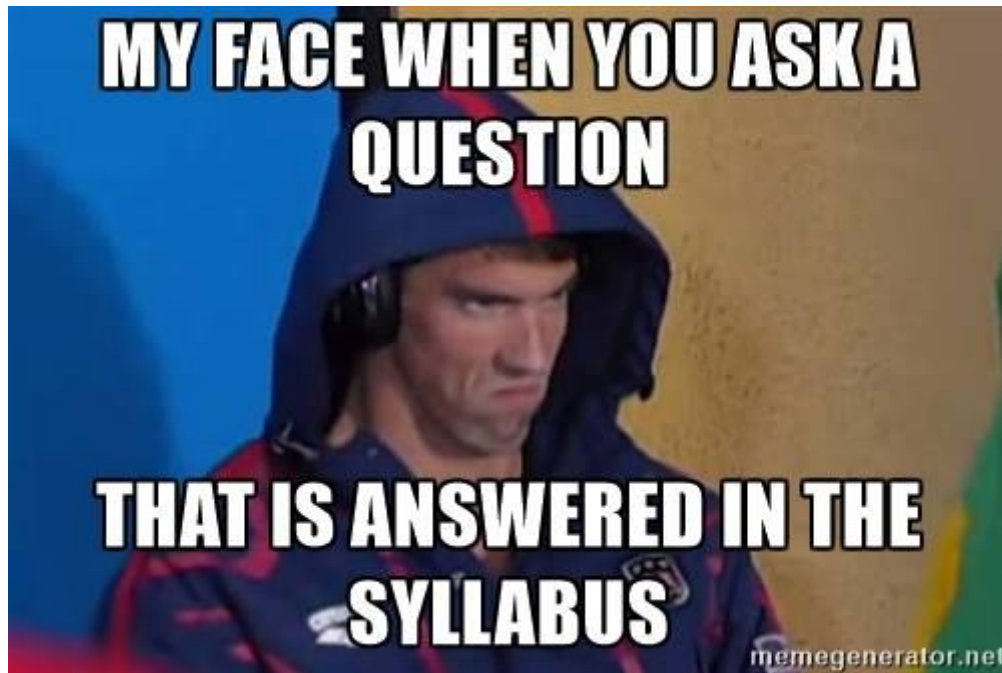
Copyright:

Lectures are comprised of copyrighted intellectual material, and the sharing of that material without express permission is a violation of copyright and personal privacy. Additionally, the discussion of sensitive issues in this class requires that students feel safe to express their opinions without fear of future reprisal or exposure. Students caught sharing course materials will be asked to leave the class. In addition, it is a violation of copyright to sell notes, assignments or exams to on-line companies.

If you want a letter of rec:

Requirements: You must come to office hours at least 3 times throughout the course and have an A grade in the course.



Please contact Prof. Moore no more than 3 weeks after the end of the course to request a letter. Meeting the above requirements does not guarantee that Prof. Moore will be able to write a strong letter. This will be determined on a case-by-case basis.



Course Summary:

Date	Details	Due
Mon Jan 10, 2022	 Anonymous Pre-Survey (https://umich.instructure.com/courses/509429/assignments/1601170)	due by 11:59pm
	 Building Teams Survey (https://umich.instructure.com/courses/509429/assignments/1601171)	due by 11:59pm
Mon Jan 24, 2022	 Discovery Decomposition (https://umich.instructure.com/courses/509429/assignments/1601190)	due by 11:59pm
Tue Jan 25, 2022	 Workshop Training Course (https://umich.instructure.com/courses/509429/assignments/1607817)	due by 11:59pm
Mon Jan 31, 2022	 Prosthetic Hand Lab (https://umich.instructure.com/courses/509429/assignments/1601186)	due by 11:59pm
Wed Feb 9, 2022	 Custom Spine Design (https://umich.instructure.com/courses/509429/assignments/1668477)	due by 11:59pm
Thu Feb 10, 2022	 BioInspiration Midterm Exam (https://umich.instructure.com/courses/509429/assignments/1601166)	due by 3pm
Mon Feb 14, 2022	 Project: Gecko-Inspired Adhesive Design Part 1: Report (https://umich.instructure.com/courses/509429/assignments/1601180)	due by 11:59pm
	 Project: Gecko-Inspired Adhesive Design Part 2: Team Contribution Survey (https://umich.instructure.com/courses/509429/assignments/1601181)	due by 11:59pm
Mon Mar 7, 2022	 Project: Kamigami Robot Design Part 1: Report (https://umich.instructure.com/courses/509429/assignments/1601182)	due by 11:59pm
	 Project: Kamigami Robot Design Part 2: Team Contribution Survey (https://umich.instructure.com/courses/509429/assignments/1601183)	due by 11:59pm
Mon Mar 14, 2022	 Final Project Part 1: Team Selection and Collaborative Plan (https://umich.instructure.com/courses/509429/assignments/1601174)	due by 11:59pm

Date	Details	Due
Mon Mar 21, 2022	 Project: Soft Robot/Artificial Muscle Design Part 1: Report (https://umich.instructure.com/courses/509429/assignments/1601184)	due by 11:59pm
Mon Mar 21, 2022	 Project: Soft Robot/Artificial Muscle Design Part 2: Team Contribution Survey (https://umich.instructure.com/courses/509429/assignments/1601185)	due by 11:59pm
Mon Mar 28, 2022	 Final Project Part 2: Discovery Decomposition Presentation (https://umich.instructure.com/courses/509429/assignments/1601175)	due by 11:59pm
Tue Mar 29, 2022	 Final Project Part 2b: Submit design and order parts (https://umich.instructure.com/courses/509429/assignments/1686549)	due by 11:59pm
Mon Apr 4, 2022	 Final Project Part 3: Analogy Check and Collaborative Plan Update (https://umich.instructure.com/courses/509429/assignments/1601176)	due by 11:59pm
Thu Apr 7, 2022	 Lecture Participation (https://umich.instructure.com/courses/509429/assignments/1601179)	due by 11:59pm
Thu Apr 7, 2022	 r/BioInspiration Extra Credit (https://umich.instructure.com/courses/509429/assignments/1601187)	due by 11:59pm
Mon Apr 18, 2022	 Final Design Project Part 5: Team Contribution Survey (https://umich.instructure.com/courses/509429/assignments/1601173)	due by 11:59pm
Tue Apr 19, 2022	 Final Project Part 4: Video (https://umich.instructure.com/courses/509429/assignments/1601177)	due by 11:59pm
Tue Apr 19, 2022	 Anonymous Design Project Feedback Survey (https://umich.instructure.com/courses/509429/assignments/1601167)	due by 11:59pm
Tue Apr 19, 2022	 Anonymous Lecture Feedback Survey (https://umich.instructure.com/courses/509429/assignments/1601168)	due by 11:59pm

Date	Details	Due
	 Anonymous Post-Survey (https://umich.instructure.com/courses/509429/assignments/1601169)	due by 11:59pm
	 Extra Credit: Supplementary Media Upload (https://umich.instructure.com/courses/509429/assignments/1601172)	due by 11:59pm