18.S996 Introduction to Geometric Algebra

Spring 2022

Online references

Course materials
https://math.mit.edu/~dunkel/Teach/18.S996_2022S/

Canvas course page:
https://canvas.mit.edu/courses/13047

Instructor: Jörn Dunkel, 2-381, 617-253-7826, dunkel@mit.edu

Office hours: By individual arrangement.

If you have a math question about some concept, or a question about the homework, or if you think you found an error in the notes, homework, or solutions, or if you have a general logistical question, then please post it in the CANVAS forum and it should get answered quickly. Also, math is easier to explain in person, so for involved math questions, contact me directly!

Lectures: MW 1-2.30, in 2-146.

Prerequisite: Instructor permission

Required/recommended text: None. All the material covered will be posted in my personal lecture notes on our course materials page. If you like the textbook format, an example is **Geometric Algebra for Computer Science** by Dorst, Fontinje and Mann.

Exams: None.

Homework: There will ~3 problem sets - for hand-in dates will be announced in class.

At the top of each problem set handed in should appear

- your name,
- either the text "Sources consulted: none" or a list of all sources consulted other than the recommended text or the various notes available at the Stellar website. This is required. (Examples of things that should be listed if consulted: a classmate, a tutor, a friend, a website, a textbook, solutions from a previous semester, etc.)

You should not expect to be able to solve every single problem on your own; instead you are encouraged to discuss questions with each other or to come to office hours, so that when you submit an assignment you are pretty sure that it is complete and correct. If you meet with a study group, you may find it helpful to do as many problems as you can on your own beforehand. But write-ups must be done independently. In practice, this means that it is OK for other people to explain their solutions to you, but you must not be looking at other peoples solutions as you write your own.

Use examples in the readings as a model for the level of detail expected. Write in complete sentences whenever reasonable. If you have questions about the homework, come to office hours. For quick questions, you might also try the online forum.

We do not plan to accept late problem sets except in exceptional circumstances. The solutions will be posted shortly after the due time.

Grading: The weighting is: **homework 25%, presentation 25%, project 50%**.

MIT help resources: Your friendly lecturer, your friendly recitation leader, the Math Learning Center, Mathematics Academic Services 2-110, the MIT Division of Student Life, and the Tutorial Services Room. If a personal or medical issue is interfering with your studies:

• Contact your medical provider if you need medical attention.

• Please do not come to class if you are potentially contagious. Instead keep up with the assigned readings if you can, and read the lecture notes posted after each lecture.

• Email me and your recitation leader. Please contact your recitation leader and/or lecturer as early as possible in case you find yourself struggling with the course for any reason.

• If it is an extended illness or serious personal problem, one that will cause you to miss handing in a homework or that will cause you to miss an exam, then (and only then) please discuss this with Student Support Services (S3). You may consult with S3 in 5-104 or call 617-253-4861.
The deans in S3 will verify your situation, and then discuss with you how to address the missed work. Students will not be excused from coursework without verification from S3.

If you have some other kind of conflict (e.g., varsity sports game), email only me and your recitation leader (not a dean) as far in advance as possible, and I will make a decision on how to proceed.

If you need disability accommodations: Please speak with the Associate Dean in Student Disability Services (SDS) in 5-104 or call 617-253-1674, ideally before the semester begins. If you have a disability but do not plan to use accommodations, it is still recommended that you meet with SDS staff to familiarize yourself with the services and resources of the office.
If you have already been approved for accommodations, please bring the accommodation letter to Theresa Cummings, 617-253-4977 in Mathematics Academic Services 2-110 early in the semester.