

TAMS Calculus III/Linear Algebra Syllabus

TAS Academic Committee
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General Information

Welcome to the syllabus page for the 2019-2020 TAS Higher Math Committee! Information that will be covered include structure of review sessions, tutoring sessions, budgeting, and resources that will be made available.

Review Sessions

What a review session will look like

Review sessions will serve as opportunities for students to review material learned in class. Reviews will be pretty evenly split between learning material/gaining intuition and working problems. Computationally, Calculus III and Linear Algebra are not difficult subjects, however I noticed my peers struggling to solve some problems because they didn't know how to approach or visualize them, which is why I'll focus on building intuition first and then learning how to work problems afterward.

When reviews will occur

Unfortunately, not everyone can take Dr. Tran for Linear Algebra, and as a result many TAMS kids find themselves in various Calculus III or Linear Algebra classes. After obtaining the syllabi from the more "popular" professors, I will try to hold reviews that will benefit the most people before tests.

For example:

- There are 50 kids in Dr. Tran's class.
- There are 20 kids in Dr. Widmer's class (poor kids).
- Dr. Tran's first test will be sometime late-October.
- Dr. Widmer's first test will be early-November.

- Therefore I will hold the review covering all the content from both Dr. Tran's and Dr. Widmer's first tests mid-October, since Dr. Widmer's test is sufficiently close so that hopefully the kids who attended won't forget everything.

Resources

Videos

Here are some video (series) that I've found that may be of use, I've put an asterisk by the ones I personally used to learn the subjects.

- [3Blue1Brown's *Essence of Linear Algebra* Series \(15 videos\)*](#)
- [MIT OCW's Video Lectures on Linear Algebra \(34 videos\)](#)
- [Khan Academy's Multivariable Calculus Videos \(a lot of videos\)*](#)
- [Professor Leonard's Calculus III Videos \(34 videos\)](#)

Reading

These are the “standard” textbooks that the classes should use.

- Linear Algebra and Its Applications, 5th Edition
- Calculus: Early Transcendentals

On another side note, I'm planning on typing up formula/review sheets in \LaTeX similar to this syllabus before tests and such. I don't know if I'll be able to make one before every test, but I'll try my best.

Practice

The best way to learn math is to do math. Practice resources I'll try to make available include:

- Previous Calculus III exams (Biswas)
- Previous Linear Algebra exams (Tran)
- Worked Weekly Quizzes (Tran)
- Worked solutions to difficult homework questions
- Anything else I can find

Budget

Not needed.