

Math 17: Beyond Calculus

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Dartmouth College
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In this course we'll explore the world of math that lies beyond calculus, and before it, and beside it. As resources, we will use some of the many excellent videos available on the web. For examples, check out these links: Vi Hart; 3blue1brown; Mathologer; Numberphile; Veritasium; Physics Girl.

The term will begin with a crash course in Mathematica, using Wolfram's online introduction. This will give students the tools to do computer explorations. No CS background is required here. (In fact, previous programming experience can be a distinct handicap in getting used to Mathematica's functional style.)

This is a project-based course. In addition to small explorations presented in show-and-tell sessions and journal submissions, students will complete and present a major course project.

Organization

Instructors

Peter Doyle: Zoom office hours Tu 1:20–3:30, or by appointment.

Ryan Maguire: Zoom office hours TBD.

Email us any time with questions, or to set up a time to meet.

Class meetings

The class meets via Zoom in the D slot, MWF 11:45–12:50. We will be using the X-hour, Tu 12:30–1:20. Keep this time open!

When you will not be able to attend class, I would appreciate it if you would send me email in advance.

Grades

Grades will be based on what I think you have put into and gotten out of the course, as manifested through class participation, show-and-tell presentations, journal submissions, the two major projects, and other assignments.

Honor Code

You are encouraged to consult any source you please. Just make sure you cite it. So, if you got someone (other than me) to help you with a project, acknowledge this prominently. Ditto for code gleaned from the web. I don't expect you to name everyone who answered a passing question, but any substantial help needs to be acknowledged.

Disabilities

I encourage any students with disabilities, including "invisible" disabilities such as chronic diseases and learning disabilities, to discuss appropriate accommodations with me, which might help you with this class, either after class or during office hours. Dartmouth College has an active program to help students with disabilities, and I am happy to do whatever I can to help out, as appropriate.