

MATH 1300: Mathematical Explorations

Course Overview

The description in the course roster gives a good summary of this course: Math 1300 is

For students who wish to experience how mathematical ideas naturally evolve. The course emphasizes ideas and imagination rather than techniques and calculations. Homework involves students in actively investigating mathematical ideas. Topics vary depending on the instructor. Some assessment through writing assignments.

For the past several years the class has been taught through active learning. Students explore various mathematical topics during class through group work and in class discussions. Homework assignments generally involve a fair amount of writing. They include reflections on what students learned in class as well as supplemental activities for students to complete and reflect on.

Textbook

There is no set textbook for this course, but many modules developed for the course make use of books from the [Discovering the Art of Mathematics](#) series which are freely accessible online.

Other books which past instructors have found useful include:

- “How Not to Be Wrong: The Power of Mathematical Thinking” by Jordan Ellenberg
- “Humble Pi: When Math Goes Wrong in the Real World” by Matt Parker
- “Mathematics for Human Flourishing” by Francis Su

Modules

Modules consist of suggestions for interactive in-class activities and/or homework assignments which guide students through a particular topic. Some of the modules give an approximate length of time/number of classes the relevant activities may take. However, the time students need may vary from semester to semester. There are no prerequisites for Math 1300 and there is no required material so modules assume little to no background knowledge. The instructor of the course can cover modules from a wide variety of areas of math and is welcome to focus on modules that will most appeal to their students.

Poster Project

The poster project is a chance for students to explore some aspect of mathematics on their own. It is typically worth 15-20 percent of the final grade. Some instructors have chosen to use the project to emphasize the human side of mathematics. Others have asked students to focus on explaining some piece of mathematics not covered in the course.

At least one class is used for a poster fair so students can have the opportunity to look at each other's posters. Using multiple class days for the poster fair can allow different groups of students to stand by and present their posters to classmates as they walk around. Some instructors have also asked students to complete peer evaluations during the poster fair.

Journal Assignments

One of the goal of this course is to encourage students to reflect on the mathematics they are learning as well as how they are thinking about math. One way past instructors have achieved this is by requiring students to complete weekly journal assignments. These assignments have included weekly reflections on what has occurred in class and additional reflection prompts posed in the homework.