

Exploring Math through Programming

Math 206, Fall 2019

Meetings: MW 3:00–3:50, 41 Knight Library
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Grading. Pass/no pass. The passing grade is 85%, based on the following:

- **Attendance and participation (2 points per day, 38 points total).** I will do some lecturing, but much of our class time will be spent working on worksheets in pairs.
- **Weekly homework (4 points each, 36 points total).** Due Mondays. Based on the previous week’s worksheet. These must be turned in on time and taken seriously, but it’s ok if they contain mistakes.
- **Final portfolio (26 points).** Select ~~three~~ two topics that we explored in class to explore a bit further on your own, and give a detailed write-up of what you learned. These write-ups should explain the basic problem and any code you developed, things you tried, any conjectures that arose, and explanations for the conjectures that you know how to resolve. Drafts due ~~Friday, Nov. 1 and~~ Friday, Nov. 22. Final portfolio due ~~Wednesday, Dec. 5~~ Thursday, Dec. 12 by 4:45 PM.

This is a 2-credit course, so you should expect to spend 4 hours a week outside of class.

Learning outcomes. The goal of the MathLabs is to help students make the transition from the kind of “procedure-driven” mathematics that they see in K-12 education (and that to some extent continues in lower-division college courses) to the more creative engagement with mathematics that is required for upper-division math courses. Students will develop basic skills in Python or another programming language, with a view toward exploring mathematical problems. They will get experience trying examples, looking for patterns, and making, testing, and modifying conjectures, and explaining their mathematical reasoning to others through writing.