

Math with Mathematica, Fall 2019

Queens College, Math 213W

Prof. Christopher Hanusa

<http://qcpages.qc.cuny.edu/~chanusa/courses/213/19/>

What you can expect in Math with Mathematica

Goal: Learn and Apply Mathematica.

- ▶ Good programming practices
- ▶ Fluency with basics the language
- ▶ Go deeper: Apply in a variety of situations
- ▶ Gain an ability to learn on your own

Style: Tutorial- and Project-based.

- ▶ Tutorials to gain knowledge (Go at your own pace)
- ▶ Projects to apply your knowledge
- ▶ Make Your Own: • Tutorial, • 3D sculpture, • App
- ▶ I provide the structure; you provide the subject.
- ▶ Cross-pollination is encouraged and expected!

W: Reflection, writing, and revision.

A normal day in this class

Outside
class

- ▶ Preparing for class
 - ▶ Respond to Daily Thread
 - ▶ Go deeper: Ask questions, Prepare for Puzzle of the day.

In class

- ▶ Arrive on time & Be ready to participate!
- ▶ Discussion of Daily Thread & Your Questions
- ▶ Puzzle of the day

Tutorial

or

Project Work

- ▶ Mathematica notebook
- ▶ Comprehension Questions
- ▶ Take notes along the way

Dedicated time to make progress
and ask questions on project

Outside
class

- ▶ Learning after class
 - ▶ Finish tutorial, review notes, project work

To do well in this class:

- ▶ **Form good study groups.**
 - ▶ Discuss tutorials and classwork.
 - ▶ Bounce around ideas, topics, questions.
 - ▶ It helps to have people to talk through things with.
- ▶ **Put in the time OUTSIDE class.**
 - ▶ Four credits = 8–12 hours / week out of class.
 - ▶ Project work is expected outside class too.
 - ▶ You only get out what you put in.
- ▶ **Come to class prepared.**
 - ▶ **Review** previous day's concepts.
 - ▶ **Do** the homework & work on your projects.
- ▶ **Stay in contact.**
 - ▶ If you are confused, ask questions (in class and out).
 - ▶ Don't fall behind in coursework or homework.
 - ▶ I need to understand your concerns.

Everything posted online; first one (many parts) due Wednesday.

Class Introductions

Arrange yourselves into groups of four-ish people,
With people you **don't know**.

- ▶ Introduce yourself. (your name, where you're from, your interests)
- ▶ What brought you to this class?
- ▶ Fill out **the blank side of** your notecard:
 - ▶ Write your name. (Stylize if you wish.)
 - ▶ Write a few words related to your name.
 - ▶ *Draw* something in the remaining space.
- ▶ Discuss with your groupmates why you wrote what you wrote.
- ▶ Exchange contact information. (phone / email / other)
- ▶ **Discuss!** Why are computers important for mathematicians?
 - ▶ What does a mathematician do?
 - ▶ What are computers good at?