

Math with Mathematica, Fall 2018

Queens College, Math 213W

Prof. Christopher Hanusa

<http://qcpages.qc.cuny.edu/~chanusa/courses/213/18/>

What you can expect in Math with Mathematica

Goal: Learn Mathematica.

- ▶ Good programming practices
- ▶ Fluency with the language
- ▶ Apply in a variety of situations
- ▶ 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, prepare questions.
- ▶ **In class**
 - ▶ Arrive on time & Be ready to participate!
 - ▶ Discussion of Daily Thread, Recap of last time.
 - ▶ Introduction to new concepts
 - ▶ Overview of the day, focus on complex concepts
 - ▶ Tutorial
 - ▶ Work through Mathematica notebook or textbook exercises
 - ▶ Answer Comprehension Questions
 - ▶ Explore, Take notes in notebook (Save to your email.)
- ▶ **Outside class**
 - ▶ Learning after class
 - ▶ Finish tutorial, review notes, project work

To do well in this class:

- ▶ **Form good study groups.**
 - ▶ Discuss homework 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?