## Math with Mathematica, Fall 2018

## Queens College, Math 213W

## Prof. Christopher Hanusa

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

### Goal: Learn Mathematica.

- Good programming practices
- Fluency with the language
- Apply in a variety of situations
- Ability to learn on your own

### 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)

### Goal: Learn Mathematica.

- Good programming practices
- Fluency with the language
- Apply in a variety of situations
- Ability to learn on your own

- Tutorials to gain knowledge (Go at your own pace)
- Projects to apply your knowledge

### Goal: Learn Mathematica.

- Good programming practices
- Fluency with the language
- Apply in a variety of situations
- Ability to learn on your own

- Tutorials to gain knowledge (Go at your own pace)
- Projects to apply your knowledge
- Make Your Own: Tutorial, 3D sculpture, App

### Goal: Learn Mathematica.

- Good programming practices
- Fluency with the language
- Apply in a variety of situations
- Ability to learn on your own

- 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!

### 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:

### Goal: Learn Mathematica.

- Good programming practices
- Fluency with the language
- Apply in a variety of situations
- Ability to learn on your own

- 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.



- Arrive on time & Be ready to participate!
- ▶ Discussion of Daily Thread, Recap of last time.

- 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

- 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.)

- 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.)





- Preparing for class
  - Respond to Daily Thread, prepare questions.
- 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

Outside class

n class

Outside class

- Work through Mathematica notebook or textbook exercises
- Answer Comprehension Questions
- Explore, Take notes in notebook (Save to your email.)
- Learning after class
  - ▶ Finish tutorial, review notes, project work

#### **Form good study groups.**

- Discuss homework and classwork.
- Bounce around ideas, topics, questions.
- ▶ It helps to have people to talk through things with.

### 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.

### 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.

### 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.

### 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 or five 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)

## **Class Introductions**

Arrange yourselves into groups of four or five 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?