Mathematical Computing, Spring 2023

Queens College, Math 250

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`http://qc.edu/~chanusa/courses/250/23/`

`https://discord.gg/crAAM6JGwB`

What you can expect in Mathematical Computing

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!

Class philosophy.

Class time is precious.

(a) In class: lecture with simple examples; Home: complex concepts

(b) Home: Watch video lectures; In class: work together to internalize

"Flipped classroom" for "content".

▶ At home: Work through tutorials / watch video lectures.

▶ In class: Groups to work on challenge questions.

Time management is important.

▶ It's HARD! Set aside time every day to make progress.

▶ Follow the guidance to keep track of projects

▶ Study groups can keep you honest. Stick to a schedule.
"We're going to work every Tuesday at 3pm. Join the Zoom.

Use Discord to ask and answer questions!

A normal day in class

In class

► Arrive on time & Be ready to participate! (Designated Audience)

► Discuss sticking points from Discord

Challenge Questions	or	**Project Work**
More advanced problem-solving questions		Dedicated time to make progress and ask questions on project
Group w/rotating driver		Groups with similar interests

Outside class

► Learning outside class
   ► Watch and work through tutorial, take notes
   ► Ask and answer questions on Discord including Daily Question
   ► Progress on your projects
   ► In the Queens College Makerspace

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.**
  - Three credits = 6–9 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; Another homework Monday (many parts).

Meet the programmers

Fill out your notecard. (I'll collect it.)

▶ Write your name and stylize it.

▶ How do you help people remember your name? Share that too.

As a class:

▶ Introduce yourself. (your name, where you're from, your major)

▶ What do you like to do when you're not in school? How did you get interested in it?

Let's see what this program can do!