

# CS 2800: Discrete structures

- ▶ <http://courses.cs.cornell.edu/cs2800/wiki>
- ▶ Professor Michael George
- ▶ Today:
  - ▶ Introduction
  - ▶ Key skills overview: definitions, proofs, abstractions
  - ▶ Discrete structures overview:
    - ▶ Set, functions, relations
    - ▶ Number theory
    - ▶ Automata
    - ▶ Combinatorics
    - ▶ Probability
    - ▶ Metalogic
  - ▶ Course logistics

## About Professor George

- ▶ This is my 12th semester teaching CS 2800
- ▶ I've also taught:
  - ▶ CS 2110 (OO programming)
  - ▶ CS 3110 (functional programming)
  - ▶ CS 4820 (algorithms)
  - ▶ CS 4410 (operating systems)
- ▶ Research interests: programming language design, security
- ▶ Other interests: pottery, dancing, playing fiddle

2800 useful in all.

A handwritten note in black ink that says "2800 useful in all." A large curly bracket on the left side of the note groups the four course listings (CS 2110, CS 3110, CS 4820, CS 4410) from the list above. A solid arrow points from the note down to the "Research interests" bullet point, and a dashed arrow points from the note down to the "Other interests" bullet point.

Please see me!

## About this class

Discrete math : Computer science :: Calculus : Physics

▶ Key skills:

- writing proofs/argument.
- working from definitions.
- abstraction



▶ Topics:

- Sets, functions, relations.
  - sizes of infinite sets
- Number theory
  - properties of modular #s.
  - cryptography
- Automata theory / Models of computation.
  - model computers
- Combinatorics:
  - counting objects without listing.
- Probability:
  - estimating likelihood.
- Metalogic
  - define "proof", "definition"

# Course Logistics

(this is a summary: you should read the syllabus)

- ~10%
- ▶ Lecture
    - for full participation credit can miss up to
  - ▶ Assignments 30%
    - graded.
    - partner
    - important
    - hard.
    - ~ 10 hrs / HW
  - ▶ Exams
    - prelims ~ 15% each
    - final ~ 30%
  - ▶ Discussion
    - participation: can miss 2 discussions.

## Academic integrity

- No solutions to problems you're working on
  - mine, others
- OK to:
  - talk with other groups
  - ask for help
  - other sources, with citation.
- Not OK:
  - uploading my materials.