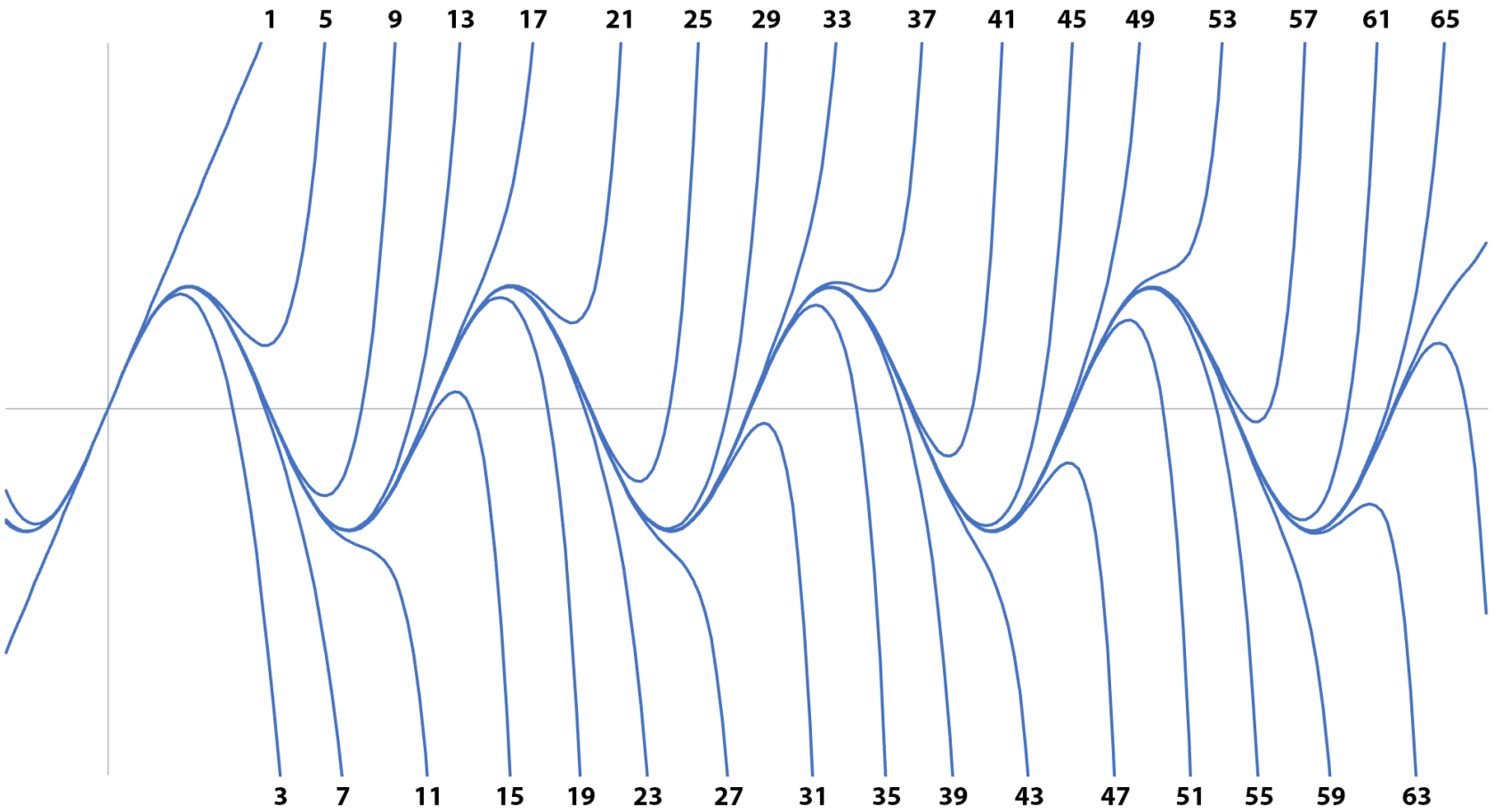
CSE 13S — Spring 2023




Classroom information
Class time and location
M/W/F from 9:20 am – 10:25 am
Performing Arts M110 (Media Theater)
Final-exam day/time
Monday, June 12, 8:00 am – 11:00 am

Instructor

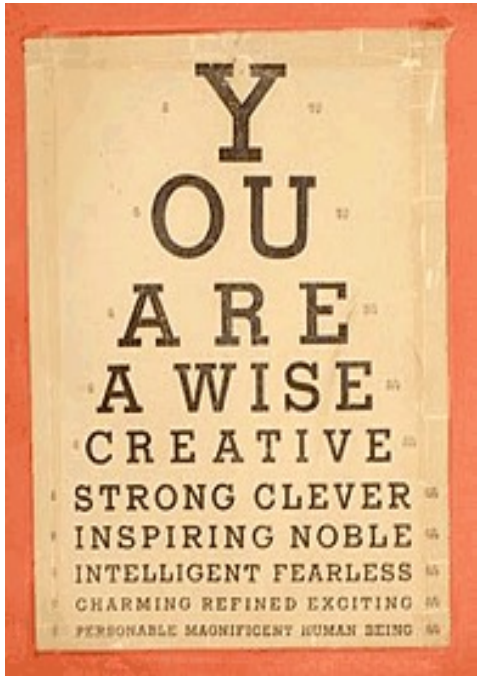
Dr. Kerry Veenstra
veenstra@ucsc.edu

Engineering 2 Building, Room 247A
(this is a shared office)

Office hours:
Tuesday 10:30 am – 12:30 pm
Thursday 2:00 pm – 4:00 pm

I'm totally supportive of DRC accommodations

- Bring me or email me your form ASAP
- Some folks need accommodations for the final only, some may need something for the quizzes: if so, we need to talk SOON!



So where does your grade come from?

- 20% Quizzes (top $n-1$ scores)
  - In class every Friday
  - I drop your lowest quiz score
- 50% Programming Assignments
- 30% Final Exam

I record the classes and post slides. **You** choose if you come to lecture—except for the quizzes.

NOTE: Assigned seats for the final exam

Canvas Web Site

- https://canvas.ucsc.edu/courses/62884

- Staff & Schedules (*still* under construction)
  - Office Hours
  - Discussion Section Times
  - Tutors & Times

Painless Way to Learn a Programming Language

Write a series of tiny programs to verify your understanding of what you read.

Assignment 1 — Due Wed. April 26, 11:59 pm

- Simulate a simplified version of the dice game "Pass the Pigs"
- How to set up
  1. git clone the resources repository
  2. Copy the resources/asgn1/* files into your own asgn1 directory
     - Files names.h and Makefile
  3. Create pig.c
  4. Type the command "make" to compile pig.c
- Next Steps
  1. Create a draft of your design report
  2. Write your program
  3. Update your design report

Assignment 1: clang-format (What's that?)

- Get the latest Makefile for Assignment 1

```
$ cd resources
$ git pull
```

- Then copy the Makefile into your own asgn1 directory
  - You're not writing your program in your resources directory, right?
- The **`clang-format`** program adjusts the "style" of your program
  - Usually just spacing
  - The order of your program's elements remains unchanged
- Type **`make format`**
  - Runs **`clang-format`** with appropriate options

Assignment 1: design.pdf vs. report.pdf

- We've changed the name of the PDF deliverable
  - Old: design.pdf
  - New: report.pdf
- Submit report.pdf

Assignment 1: Design_Report_Template

- We've provided guidelines for writing your report.pdf
  - See resources/asgn1/Design_Report_Template.pdf
- For users of Overleaf, we've provided the LaTeX source as an example
  - resources/asgn1/Design_Report_Template/main.tex
  - resources/asgn1/Design_Report_Template/bibtex.bib
  - resources/asgn1/Design_Report_Template/pigarm1.png
- Load these files into a new Overleaf document

Assignment 2 — Preview

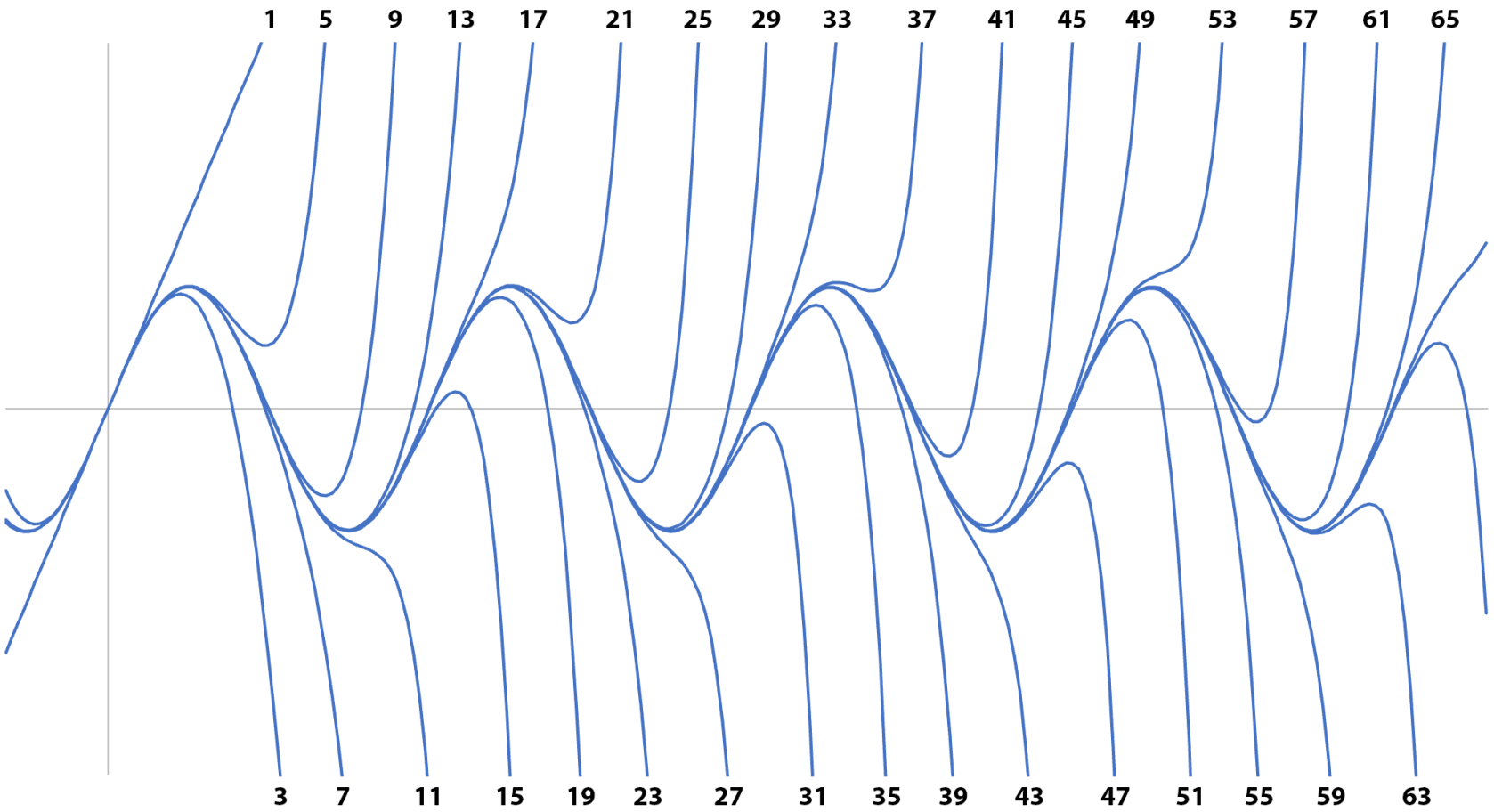
- Learning Objectives
  - Use command-line options

```
$ my_program -a
```

  - Convert numeric series into C

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} + \cdots$$

"Maclaurin polynomials" for sin x through order 65



man 3 getopt()

- Use with this #include file

```
#include <unistd.h>
```

- Then this function is available

```
int getopt(int argc,
           char * const argv[],
           const char *optstring);
```

- And these four global variables

```
extern char *optarg;
extern int optind, opterr, optopt;
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`getopt()`

- See example in lecture

`extern int opterr, optopt;`

- **`opterr`** enables error messages (enabled by default)
- Disable error messages with

  `opterr = 0;`
- Then check the return value of getopt()

  `'?'` means there was an error

  `optopt` is set to the erroneous option letter

Adding a `-a` option

- We'll use this to mean "enable all other options"
- Have int or bool variables record existence of options

```
-x  → x_option = 1;

-y  → y_option = 1;

-a  → x_option = 1;
      y_option = 1;
```

- Then check values of the variables and perform the selected tasks.