

Welcome to ES 2!

Please make a name tent with whatever
you want us to call you.

ES 2: Critical thinking with Python

aka, Introduction to Computing for Engineers

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My journey with code...

Bachelor's in
Computer Engineering



MS/PhD in
Electrical Engineering



Associate Teaching Professor,
Electrical and Computer Engineering





What is ES 2 about?

Programming as a tool for critical thinking with data:

Python programming language

Some data analysis techniques

Graphing and visualization

Critical thinking when numbers are involved

Expectations

4-SHU course, so 10-12 hours/week of work

Communication

Course website: www.ece.tufts.edu/es/2

Piazza for announcements and Q&A

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Your brain is like a muscle: it grows when you stretch it!

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1) In this class, you will do a lot of experimentation and coding, not watch me code.

2) All the code you turn in must be your own:
Not from a friend, not from the internet, not from AI.

On modern AI tools

AI tools are incredibly helpful for generating quick blocks of code, but they often make errors both small and large.

This course is about learning to code

so that you can be an excellent engineer:

Able to read, analyze, find errors, and correct mistakes in code!

It is not acceptable to use AI to generate code for any assignment in this course.

No one plans to cheat... but somehow it happens!

In a group of 3-4:

What are some reasons students might submit code they didn't write?

What circumstances might influence their better judgement?

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What will you do?



Warning!

I haven't taught this class for a couple years,
and we're updating a lot of things.

Some things won't be polished, but we'll make it through together!

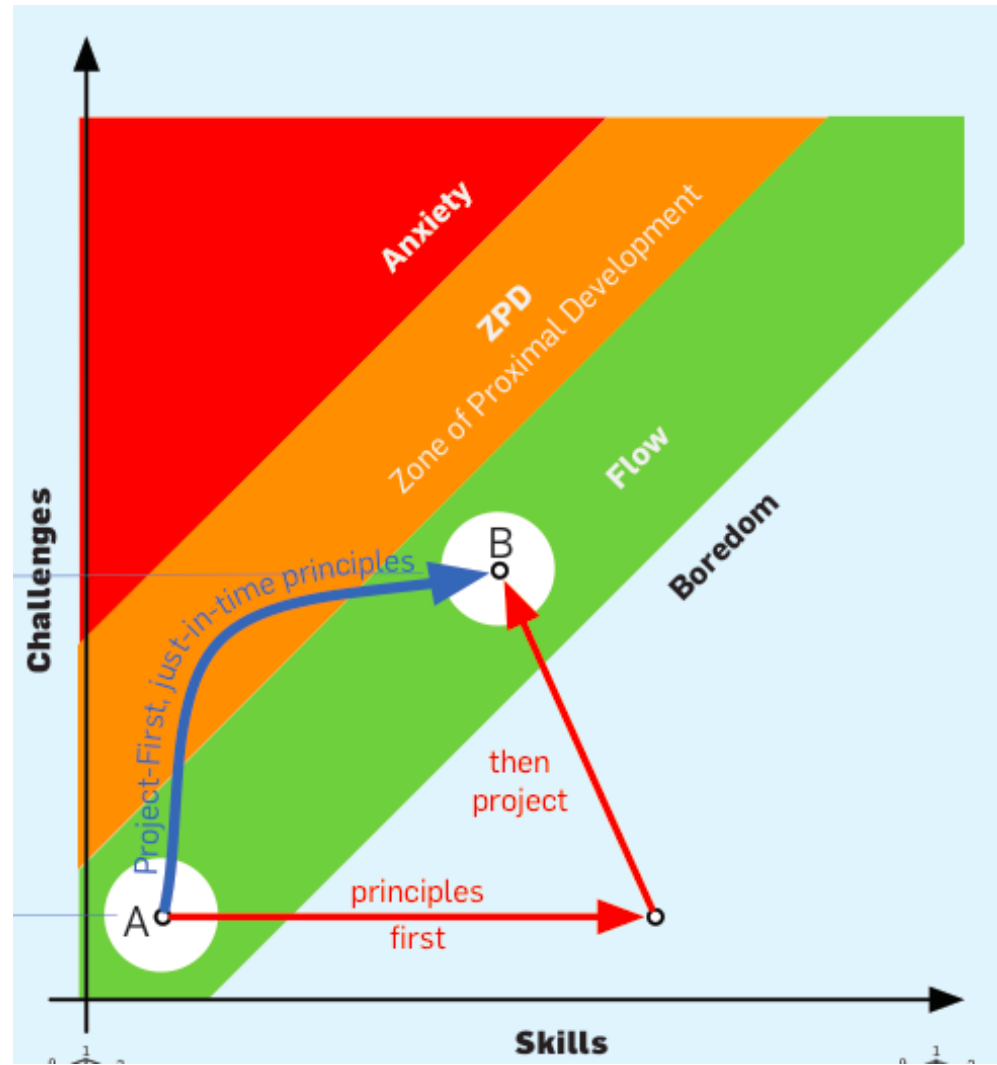
How do you learn how to program?

It's a little like learning a natural language

Experiment, explore, try and fail and try again!

You're not trying to memorize the dictionary,
you're learning to speak a new language.

Jumping in the deep end



Extract of Figure from A. Repenning, "Programming Goes to School", CACM, 55, 5, May, 2012.
via <https://nickfalkner.com/2012/04/25/got-vygotsky/>

Let's log into Codio!

Go to codio.com

Create an account (using first.last@tufts.edu)

Join the course with code **yoga-spray**

Coming up...

Complete the **welcome survey** (link on website)

Complete **Week 00 reading** on Codio, due Tuesday (1/21) at 10am:

Complete **Week 00 assignment** on Codio, due Tuesday (1/21):

Tomorrow (1/17): first Friday sociotechnical activity
(same room, same time)