

JANUARY 13TH, 2025

# CE 311K: Introduction to Computer Methods

Course Introduction

# Instructors



**Hagen Fritz**

Primary Instructor



**Cesar Davila Hernandez**

Teaching Assistant  
Monday Labs



**Zahra Bajalan**

Teaching Assistant  
Wednesday Lab



**Muhammad Javed**

Peer Advisor

**A note about this semester...**



## Course Overview

# Learning Outcomes

*Python programming and computational methods for civil, architectural, and environmental engineering*



Learn fundamentals of  
programming with a focus on  
Python



Apply programming knowledge to  
solve engineering problems



Introduce programming for data  
manipulation, analysis, and  
visualization

## Course Overview

# Topics

### Python Basics

- Data Types
- Collections
- Conditionals
- Loops
- Functions
- File Input/Output
- Object-Oriented Programming

### Applications

- Sorting
- Integration
- Root Finding
- Differentiation and Gradients
- Solving Systems of Equations
- Data Visualization
- Working with APIs

## Course Schedule

## Course Overview

# Logistics

### Grading Breakdown

Homeworks (10): 20%

Lab Assignments (10): 40%

Exams (2): 12.5% each

Final Project: 15%

### Homework

Covers material from current week's lectures

Assigned Monday after class and due next Monday at 11:00 am

### Lab

Covers material from previous week's lecture

Please stick to your assigned lab time

### Attendance

Not required but heavily encouraged

If you do attend, please be present

+ Code + Text

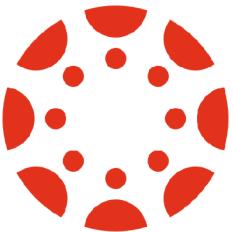
```
[1] !pip install -U  
import ipdb
```

Building wheel

```
[9] def fib(n):  
    if n <= 1:  
        return n
```

```
arr = [0, 1]  
for i in range(1, n):  
    arr.append(arr[-1] + arr[-2])  
  
return arr[n]
```

```
[10] fib(8)
```



Canvas

All course content and where  
you will submit *everything*



GitHub

All course content, but  
rendered better



Google Colab

Coding platform: homeworks,  
labs, exams, and project

# Google Colab

