

# Assignments and Homework Workflow

# Written Assignments

# Step 1

Access .md file on Github page

- 🌐 Slides (HTML): [L1\\_software\\_python.slides.html](#)
- 📄 Slides (PDF): [L1\\_software\\_python.pdf](#)
- 📓 Notebook: [L1\\_software\\_python.ipynb](#)

## VScode Setup

Introduction to Python, Conda environments, and the computational tools used in the course.

- 🌐 Slides (HTML): [L1\\_software\\_VScode.slides.html](#)
- 📄 Slides (PDF): [L1\\_software\\_VScode.pdf](#)
- 📓 Notebook: [L1\\_software\\_VScode.ipynb](#)
- Extra Code: [L1\\_JupyterTest.ipynb](#)

 [Open in Colab](#)

## Assignments

- 📄 Written Assignment: [A1\\_written.md](#)
- 📓 Coding Assignment: [A1\\_code.ipynb](#)

 [Open in Colab](#)

Files

Lecture1\_working
+
Q

Go to file
t

>
.vscode

<
Assignments

A1\_code.ipynb

A1\_written.md

A2\_Matrices\_code.ipynb

A2\_written.md

A3\_DSM\_Trusses\_code.ipynb

A3\_written.md

>
Code

>
Lectures

.flake8

.gitignore

.markdownlint.yml

.pre-commit-config.yml

.prettierrc.yml

HTML\_to\_PDF.py

README.md

convert\_Notebook-Slides.bat

convert\_Slides-PDF.bat

environment-dev.yml

environment-student.yml

pyproject.toml

CEE6501 / Assignments / A1\_written.md

Preview Code Blame 81 lines (55 loc) · 2.51 KB

☐ All questions answered
☐ File uploaded successfully to Canvas

### Collaboration / AI tools

You may discuss concepts with classmates and you may use AI tools to help you learn, but **your submitted code must be written by you and you must understand it**. If you used outside help, add a short note in the final reflection cell.

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### Assignment Questions

This is a **test assignment** designed to help you practice the **submission workflow** used throughout the course.

The goal of this assignment is **not technical difficulty**, but to ensure that you are comfortable with:

- completing a written assignment,
- scanning or exporting your work,
- and submitting it correctly on Canvas.

#### Question 1 — Structural Inspiration

Using the International Database and Gallery of Structures Website (or any other resource): <https://structurae.net/en/structures/>

Find and example of each of the following structure types that you personally find interesting or inspiring:

- Cable Nets
- Membranes
- Lattices and Gridshells
- Thin Shells
- Tensegrities

In your submission:

1. Include an image or sketch of each structure.
2. A link to a website page you found the image (if available).
3. Briefly describe the structure and its purpose
4. Explain **why you find this structure interesting**, focusing on aspects such as:
  - structural form
  - load paths
  - material use
  - scale
  - elegance or efficiency
5. Reflect on what questions this structure raises for you as a student of structural analysis

There are **no right or wrong answers**. The emphasis is on clarity, thoughtfulness, and clear communication.

# Step 2

Complete assignment in markdown or hand-write (for calculations) embed images as needed. Export as PDF. Upload PDF to canvas.

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## Week 1 Assignment <sup>▲</sup>

**Due** Jan 26 by 11:59pm   **Points** 10   **Submitting** a file upload   **Available** after Jan 15 at 12am

No additional details were added for this assignment.

File Upload   [Box](#)   [Dropbox](#)   [Microsoft OneDrive](#)

Upload a file, or choose a file you've already uploaded.



Drag a file here, or

[Choose a file to upload](#)

 Use Webcam

# Coding Assignment

## What a Coding Assignment Looks Like

- Most homework is a **Jupyter notebook** template
- You will:
  - fill in code
  - answer short prompts
  - generate plots/figures to verify behavior
- Grading emphasizes:
  - correctness
  - clarity
  - interpretation ("does this result make sense?")

# Step 1

Access .ipynb file on Github page

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## Step 2

Open the notebook (locally or in Colab):

1. Run the setup cell(s) at the top of the notebook.
2. Complete the questions **in order**.
3. Enter your answers only in the **designated cells**.

A1\_code.ipynb

File Edit View Insert Runtime Tools Help

Commands + Code + Text ▶ Run all Copy to Drive

☑ **Deliverable:** the text and equation must render correctly in Colab.

YOUR ANSWER HERE:

Question 2 — Python Basics (10 pts)

Write code that:

1. Defines `m = 70` and `v = 5`
2. Computes kinetic energy `E_k`
3. Prints: `Kinetic energy: <value>`

☑ **Deliverable:** running the cell prints the correct value.

```
[ ] # YOUR WORK
```

```
[ ] # TESTS (do not edit)

expected_Ek = 0.5 * 70 * 5**2 # 875.0

assert m == 70, "m should be 70"
assert v == 5, "v should be 5"
assert E_k == expected_Ek, "E_k is incorrect"

print("☑ Question 2 tests passed.")
```

Question 3 — Object-Oriented Programming (OOP) (10 pts)

1. Create a `Circle` class with:
  - attribute: `radius` (float)
  - method: `.area()` returning area
  - method: `.circumference()` returning circumference

# Step 3

Run the provided tests (do not modify them) to verify that your output matches the expected results.

## ✓ Question 2 — Python Basics (10 pts)

Write code that:

1. Defines `m = 70` and `v = 5`
2. Computes kinetic energy `E_k`
3. Prints: `Kinetic energy: <value> J`

✓ **Deliverable:** running the cell prints the correct value.

```
[4]
✓ 0s  # YOUR WORK
      m = 70
      v = 5

      E_k = 1/2 * m * v**2

      print("Kinetic Energy: ", k)

      Kinetic Energy:  875.0

✓
[5]
✓ 0s  # TESTS (do not edit)
      expected_Ek = 0.5 * 70 * 5**2 # 875.0

      assert m == 70, "m should be 70"
      assert v == 5, "v should be 5"
      assert E_k == expected_Ek, "E_k is incorrect"

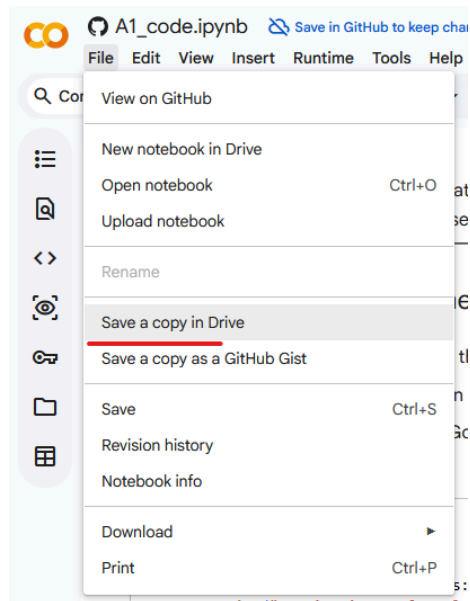
      print("✓ Question 2 tests passed.")

...  ✓ Question 2 tests passed.
```

## Step 4

Save your Colab notebook **locally**. If you do not do this, your work will be **overwritten** the next time you pull updates from GitHub.

I will periodically push updates to assignments (e.g., to fix issues or clarify problems). You should therefore expect to **pull updates while working on an assignment**. I will notify you when an update is required.



## Step 5

Upload Colab file link to canvas. Make sure permissions on the file are appropriately set so that I can access and run your code.

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### Week 1 Coding Assignment ▲

<b>Due</b>	Jan 26 by 11:59pm	<b>Points</b>	10	<b>Submitting</b>	a website url	<b>Available</b>	after Jan 15 at 12am
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No additional details were added for this assignment.

Website URL

[Box](#) [Dropbox](#) [Microsoft OneDrive](#)

**Website URL\***

# Collaboration and Integrity

- You are encouraged to discuss **concepts, written solution, and code** with classmates.
- You may use GPT-based tools while working on the assignments; however, you must **attempt the problem yourself first** and not rely on copy-and-paste solutions.
- Any code you submit must be **your own work**:
  - Do not submit complete solutions generated by others or by AI.
  - You should be able to **explain every line of code** you submit.
- If you are unable to explain your code when asked, it will be treated as copied work and you will receive **zero credit** for that question.
- When in doubt about what is appropriate: attend office hours or email me.