Lab 0

Submit Assignment

Due Monday by 11:59pm **Points** 3 **Submitting** a file upload

Purpose

The main purpose of this lab is to get you set up with Python on your computer, and to give you some initial experience in writing some simple Python code.

Assignment

1. Install the **Spyder** (https://pythonhosted.org/spyder/) Integrated Development Environment on your computer, following these instructions: **ME 499 Software Installation Guide.pdf**

2. Write the following basic Python program in Spyder, verify that it runs, and save it in a file called `hello.py`.

```
#!/usr/bin/env python


print('Hello, World!')
```

3. Write some Python code that calculates the volume of a cylinder of height 5 and radius 3.
4. Put this in a file called `cylinder.py`, which prints out the answer when you run it. Verify that you're printing out the right value. The file should only print out the volume, with no other words.

5. Write some Python code that calculates the volume of a torus with an inner radius (the radius of the hole) of 3 and an outer radius (the radius from the center of the shape to the outer edge) of 4, and prints it out. Put this in a file called `torus.py`. Again, it should only print out the volume and nothing else.

6. Download our grading script, **grader.py**, (or **grader_win.py** if you are on Windows) and put it in the same directory as your code. You should be able to run this and see what your grade for the lab will be. We're going to use a very similar script to grade the functionality of your code. Please do not modify this script, since we will replace it with our own when we start grading the lab.

Thoughts

1. If you already use another IDE (like PyCharm), you should feel free to use that instead of Spyder.

2. Just to be very clear, you should write code that calculates the value for the last two questions, not code that simply prints out a number you have previously typed in. Yes, someone tries this in every

introductory class like this.

3. No, we didn't tell you how to calculate the volumes of the cylinder or the torus. Yes, this was on purpose. Yes, the information is probably available on the Internet somewhere, in case you don't have it at your fingertips. Yes, it's possible to search for it. Yes, this will be recurring theme in the class.

4. We're going to be very picky about the precision of your output. The grading script will tell you if you've managed to get the correct output or not. If you need help getting the grading script to run, or don't know why you're not getting a full grade, talk to a TA or the instructor.

Rules

Everything you do for this lab should be your own work. Don't look up the answers on the web, or copy them from any other source. You can look up general information about Python on the web, but no copying code you find there. Read the code, close the browser, then write your own code.

Grading

One point for each part of this assignment if the code runs, and produces the correct answer. The grading script will tell you if you did things correctly or not. Zero points for code that either does not run or produces the wrong answer.

What to Hand In

Hand in a zip or tar file with your three Python files in it.