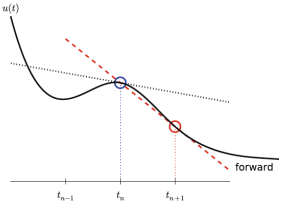
CGN 3421

Computer Methods in Civil Engineering

Fall 2018



Instructor: Professor Paul Gader
Environmental Engineering Sciences
Computer and Information Science and Engineering
paul.gader@essie.ufl.edu

Class Room & Times: MWF Period 5 (11:45 AM - 12:35 PM) Room: CSE E309
W Periods 9 – 11 (4:15 PM – 6:45 PM) Room: CSE E309

Office Hours: MWF, Period 7 (1:55 PM – 2:45 PM) Room: Weil 575L

Overview: The course covers computer programming in Python and then using Python to program numerical methods useful for civil engineering problems.

Textbook:
Title: Programming for Computations – Python: A Gentle Introduction to Numerical Simulations with Python
Authors: Svein Linge and Hans Petter Langtangen
Publisher: Springer.
The textbook is available online. It is an open access textbook and can be downloaded from:
https://link.springer.com/book/10.1007/978-3-319-32428-9#toc
You can also buy a softcover book for $25 at that link.

Online Resources:
There are many online resources for using Python. I recommend:
https://docs.python.org/3/
for help with Python and
https://scipy.org/
for using Python to solve scientific problems.

Many lectures will use the Anaconda software package, Jupyter notebooks, and some Spyder. You should download this package to your personal computer. Go to the website:

https://anaconda.org/anaconda/python

and select "Download Anaconda" from the menu in the upper right part of the screen. The site should detect what operating system you have (Windows, Mac, ...) and send you to the correct download page. Select "Python 3.6 version" to download. Do not select Python 2.x for any number x.

The laptop should have enough disk space to download the software (about 500 MB on my Mac).

Grading: There will be 2 tests and 6-8 Programming Problems. Many Programming Problems will be coding assignments that you complete in class. Class attendance is important. Grades will be based on the following:

Test 1:	25%
Test 2:	25%
Homework:	35%

Class Participation/Attendance	15%