

## Introduction to Python Syllabus

### Description

The goal of the class is to teach students to think like computer scientists – the emphasis is on formulating problems, thinking creatively about solutions, and developing computational solutions using Python. This course introduces the fundamentals of programming and develops each new concept in a logical progression.

### Course Prerequisites:

Students should be comfortable with computers, excited about computer programming, enjoy problem- solving, and possess basic keyboarding/typing skills. Students are not required to be proficient at typing. However, keyboarding lessons are recommended for students interested in computer programming (there are several online keyboarding programs we can recommend) and it will reduce the time required to complete the homework assignments.

### Required Materials:

- Text: ***Think Python: How to Think Like a Computer Scientist*** by Allen Downey. Version 2.0.3 June 2012. Green Tea Press Needham, Massachusetts
  - This is a free online textbook that is available at:  
<http://www.greenteapress.com/thinkpython/thinkpython.pdf>
  - ***Think Python*** is a Free Book. It is available under a Creative Commons License, which means that it can be copied, distributed, and modified as required. Hard copies are also available at [www.amazon.com](http://www.amazon.com) and can be purchased, if so desired.
- Computer and access to internet to do required homework. In order to cover the topics in the timeframe allotted, students will be required to complete homework assignments at home.

### Topics Covered:

- Week 1: Introduction to Computer Science and Computer Languages
- Week 2: Variables, Expressions, and Statements
- Week 3: Functions
- Week 4: Interface Design
- Week 5: Conditionals and Recursion
- Week 6: Fruitful Functions
- Week 7 & 8: Iteration