CS 100 Roadmap to Computing
Brief Course Description

Course Description
An introduction to programming and problem solving skills using Python, a very high level language. Topics include:

- programming environments and tools, including editor and debugger
- basic strategies for problem solving
- integer, floating point, string and logical data types
- lists, sets and dictionaries
- files
- conditional, repetition, function and other constructs that control the flow of execution of a program
- the design of classes
- the use of high level data types such as lists, strings and dictionaries in problem representation.

Learning this material requires extensive hands-on practice.

Course Resources
The textbook is *Think Python* by Allen B. Downey, 2nd edition. This is an open source book. It is available without charge in HTML and PDF formats at http://greenteapress.com/wp/think-python-2e/.

A print format is published by O'Reilly (campus bookstore or online). There is also a Kindle edition. The textbook is required. You may use any one (or more) of the formats.

Other course materials include the Python 3 language, which can be downloaded at python.org/downloads. This includes the IDLE development environment, help files, modules and other parts of the standard distribution. You will need to get Python and install it on your personal desktop and/or laptop computer. You can download Python for Windows, Mac or Linux environments. There is no charge for Python.

Topics to Be Covered
The list of topics to be covered includes the following:

- Getting Started with Python
- Expressions, Variables, and Assignments
- Built-in Data Types
- Sequence Data Types (Strings, Tuples, and Lists)
- Python Standard Library
- Formatted Output and User Input
- Conditional Execution and Boolean Logic
- Iteration
- Functions
- Argument-Passing and Return Values
- Data files
- Dictionaries
- Designing and Using Classes
- Scope and Namespaces
- Exceptions
- Debugging and Testing

University Code on Academic Integrity
Read the University Code on Academic Integrity (njit.edu/policies/sites/policies/files/academic-integrity-code.pdf). It describes infractions of academic integrity and penalties for violations, including, for the most serious violations, an XF grade in the course or expulsion. All work that you represent as your own must, in fact, be your own.