Gifted LearningLinks Program
Course Syllabus

Instructor name: B. Fox
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Course Title: Python I: Introduction to Computer Programming

Course Description:
Python is the perfect course for students who are fascinated by computers, want to understand how they work and begin programming. Students learn to write pro- grams using the same language utilized by NASA, Google and George Lucas' Industrial Lights and Magic. Python is a powerful programming language that allows programmers to learn imperative and functional programming concepts using extensive libraries. It can also be used as a scripting language for writing web applications. Python uses a dynamic, object-oriented, open-source language that is easily accessed by students with no prior experience. It opens the door to future computer courses.

Note: This program runs smoothly on Windows platforms, but students may use MacOS or Linux as well.

Outcomes:
Upon successful completion of this course, students will:

a. know:
   - basic Python syntax and keywords: if, for, while, def, int, float, etc.
   - structures of Python programs: functions, libraries, object methods

b. understand:
   - variables and data types
   - input/output
   - branching and looping
   - functions

c. be able to:
   - write programs in Python
   - create text-based games
   - use GUI dialogs to get user input

Resources and Materials:

Textbook:

Hello World! Computer Programming for Kids and Other Beginners
Warren D. Sande and Carter Sande
March, 2009 | 432 pages
ISBN: 1933988495
Publisher: Manning Publications

Additional software:

Software supporting textbook - available from publisher's website http://www.manning.com/sande.

Student supplied materials:

- computer running Windows, MacOS X, or Linux
- Python version 2.5, 2.6 or 2.7 software installed on computer (available from python.org/download)

Schedule:

The following schedule is intended to help you work through the course material at an appropriate pace, manage your time effectively, and complete the course in the designated time frame.

	Topic/Focus	Activities & Reading Assignments	What do I need to post to the Discussion Board?	What do I need to turn in?
Week 1	Orientation to Online Learning	Install Python, obtain textbook, write sample program, read pages 1-13 and try out the sample code.	Introductions	Your own version of program on p 11-12.
Week 2	Variables and basic math	Read pages 14-37	Any questions and comments you may have.	Assignments on p 25 and p 37. (Assignments 5 & 6)
Week 3	Types of data, start project #1	Read and study pages 38-43. Design a program of you own choice, which includes many of the concepts learned in chapters 1, 2, 3 and 4.	Any questions and comments you may have.	p. 43 Test Your Knowledge, ex 1-3. (Assignment 7)
Week 4	Finish project #1, input	Read and study pages 44 - 51	Any questions and comments you may have.	Source code for your project; p 51, Try It Out, ex 2,3,5 (Assignments 8 & 9)

	Topic/Focus	Activities & Reading Assignments	What do I need to post to the Discussion Board?	What do I need to turn in?
Week 5	GUI's and if statements	Read, study and practice writing sample code found on pages 52-61 and 62-73.	Any questions and comments you may have.	p. 61 Try It Out, ex 2; P 73 Test your Knowledge, q 1,2; Try It Out ex 3 or ex 4. (Assignments 10 & 11)
Week 6	Loops	Read, study and practice writing sample code found on pages 74-88. Read pages 94-98	Any questions and comments you may have.	p. 87 Try It Out ex 1, 2; exercise on p. 98 (Assignment 12 & 13)
Week 7	Project #2	Design a program of you own choice which includes many of the concepts learned in chapters 1-10	Any questions and comments you may have.	Python code for your program (Assignment 14)
Week 8	Nested and variable loops, lists	Read, study and practice writing sample code found on pages 99-110 and 112-129.	Any questions and comments you may have.	p 111, Try It Out, ex 1-2; p 130, Try It Out, q 1-8 (Assignments 15 & 16)
Week 9	Functions	Read, study and practice writing sample code found on pages 131-144.	Any questions and comments you may have.	p 145, Try It Out, ex 1-2, 4 (Assignment 17)

Student Evaluation and Grading Policies for Credit Courses Only:
Enrichment students will receive a final narrative evaluation after the course is complete.

Instructor Biography:
Barbara Fox has been working with programming and programmers for over 30 years. After working for Hewlett Packard and Data General as a systems engineer, she taught Unix, linux, networking, and security courses to computer professionals across the United States. For the last seven years she has been teaching secondary technology (including Python, AP Computer Science with Java, Web Design, and Computer Graphics). One of her favorite activities is mentoring the award-winning Robotics Team at her school. She has been teaching for Gifted Learning Links since 2009. She has a Master of Science degree in Applied Computer Science and is currently working on her Educational Specialist degree with a concentration in Technology Integration.

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