CS 115 Introduction to Computer Programming

Spring Semester 2016

Instructor Information

Instructor

Robert Chirwa

Email & Phone

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Office Location & Hours

202J AT Building, Cooper Campus
9 – 11 a.m. Tues & Thur/5 – 6 p.m. Tues

Contacts Information

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General Information

Description

This course teaches introductory skills in computer programming using a high-level computer programming language. There is an emphasis on both the principles and practice of computer programming. Covers principles of problem solving by computer and requires completion of a number of programming assignments.

Credit hours: This is a 3 credit hour course **Prerequisites**: none

Recommended: knowledge of high school Algebra

Course objectives

Upon successfully completing this course, the student will be able to:

1. Understand computer architecture and data representations (variables, representation of numbers and character strings)
2. Use basic algorithmic problem-solving techniques (decision structures, loops, functions)
3. Use objects in a program
4. Design, document, implement and test solutions to programming problems

Course Materials

Required Materials/Accounts

- Python 3.5.1 on a computer to which you have access. You may download IDLE for Python programming from https://www.python.org/. All students have access to a Linux server called district.bluegrass.kctcs.edu that has Python installed.
- All students have access to Blackboard where announcements, assignments, exams, and discussions are posted.
- Homework will be assigned on MyProgrammingLab. You need access either bundled with the textbook or purchased with a credit card on MyProgrammingLab website. The access code is **BLUE-22994-DRHV-27**

Required Text

Starting Out with Python 3rd Edition, Gaddis, Published 2015 by Pearson ISBN 9780133862256.

Grading policies

WEIGHTS OF COURSE WORK	
Component	**Percentage of Course Grade**
Homework, quizzes, discussion	20%
Programming projects	30%
Tests	30%
Final (at least 60% to pass course)	20%

GRADING SCALE	
Score range	**Grade**
90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
below 60%	E

Tests and Assignments Policy

There are three tests each covering two chapters of the book. Tests are available on Blackboard to be taken at your flexibly scheduled time. At the end there will be a proctored comprehensive final exam. Proctored means you will go to a testing center with a picture ID to take the test. **You need to get at least 60% on the final to pass the class**.

Quizzes on either one chapter or part of a chapter are available on Blackboard. The first quiz (quiz 1) must be completed within the first week of the semester to avoid being dropped from the class.

There are four programming projects assigned on Blackboard. All programming projects require submission of a design document and a Python program that meets requirements and has no syntax errors. A score of 0 is awarded to a project if the program has syntax errors.

Homework is assigned on MyProgrammingLab.

Participation will be required through discussions and WiKi posts on Blackboard.

Apart from the comprehensive final, all work is available so that you may work on it at your own pace. Please avoid leaving too much work for the end of the semester. All work must be completed by April 29.

Participation Policy

Discussion topics will be assigned from time-to-time on Blackboard. The student is required to participate in the discussion topics for participation credit.

Please note that you are required to participate by taking Quiz 1 by Friday January 15 before midnight (before you go into Saturday) to avoid being dropped from the course.

Other Policies

Late work and make-up work policy

Late homework and make-up tests or quizzes will not be accepted except when there is an acceptable excuse. Examples of an acceptable excuse are sickness and funeral of a close relative. Documented proof of an acceptable excuse will be required for due date extensions and make-up of tests or quizzes.

Withdrawal policy

The deadline for withdrawing from class without the instructor's permission is March 7. The deadline for withdrawing from class with instructor's permission is April 29. Bluegrass Community and Technical College students may withdraw by sending an e-mail to BL_DistanceLearningWithdraw@kctcs.edu. Incomplete Grades will not be given.

Plagiarism policy

All students are expected to do their own work. The penalty for turning in somebody's work is a failing grade in the course. This policy is especially relevant to this course where students are tempted to turn in a program copied from the Web or written by an experienced programmer. Please avoid such practices as they will make you fail the course. For sanctions resulting from academic offenses, please refer to the KCTCS Code of Student Conduct: Student Rights and Responsibilities (http://kctcs.edu/en/Students/Admissions/Academic_Policies/Code_of_Student_Conduct.aspx).

Special accommodation policy

For BCTC students, contact Disability Support Services in 320-C Oswald Building on the Cooper Campus and/or in C-116 on the Leestown Campus or call (859) 246-6728, (859) 246-6753 TTY or (866) 774-4872 extension 6728 (Toll Free) if you need special accommodation arrangements. For other colleges, contact the disability office of your college.

Outline

I. Introduction to Computers, Problem Solving, and Programming
   a. Program Design Concepts
   b. Program Implementation
II. Introduction to interfaces
   a. Graphical User Interface (GUI)
   b. Command Line Interface (CLI)
   c. Commands in Windows
   d. Python Programming Environments
III. Introduction to the Python Programming Language
   a. Program Structure
   b. Output Statements
   c. Variable Declaration/Definition Statements
   d. Variable Initialization Statements
IV. Top-Down Design Using Functions
   a. Function concepts
   b. Variable Scope
   c. Inter-Function Communication
V. Selection Control Structures
   a. Boolean Expressions
   b. 2-way selection
   c. Multi-way Selection
VI. Repetition Control Structures
   a. Loop Components
   b. Deterministic vs. Non-Deterministic Looping
   c. Nested Looping
VII. Lists
   a. List Creation
   b. List manipulation Using Loops
VIII. Classes
   a. Data Structure Concepts
   b. Class Components
   c. Creating Objects using Classes

Additional Information

Weather or emergency closing information

Inclement weather or other emergencies may cause BCTC classes to be cancelled or delayed. If classes are delayed, you are to report to school at the announced time and attend the class where you would NORMALLY be at that time. Information about cancelled or delayed classes will be posted on the BCTC website. Many local radio and television stations will also carry announcements. Instructors may send email messages and/or Blackboard announcements regarding assignments for a class that was cancelled. Students are responsible for checking these sources for such messages.

Financial aid information

If you receive grants and/or loans to pay for this class you should be aware that withdrawing or failing this class may affect your future financial aid eligibility. You should review the Financial Aid Satisfactory Academic Progress (SAP) policy for additional information. Contact the Financial Aid Office for a copy of the SAP policy. All students are expected to attend class and have the required textbook(s) even though you may have an appeal in process or have not yet received financial aid.

BCTC is an equal- opportunity institution.