UNIVERSITY OF DENVER -- COLORADO WOMEN'S COLLEGE

ITS 1672: Introduction to Programming

Spring 2015: Tuesday Evenings, 6:00pm-9:50pm

March 24 through May 26

Instructor: Carl Gibbons, 720-480-8111, cgibbons@du.edu

(Leave a voice mail message. I will respond to messages withing 48 hours. If you send an e-mail and don't get a response, it may have become lost in the large quantity of e-mail I receive daily; please follow-up with a phone call and voice mail message.)

Prerequisites: ITS1671, MATH2202 (or MATH2200), or consent of instructor. Students are responsible for completing course prerequisites before registering for a class. Students may be removed from a course for which they have not fulfilled the prerequisite course work.

Course Description:

Students learn how to design and implement computer programs using a popular, widely-used programming language. The course covers determining the requirements for the computer program and translating these requirements into a design. Computer programs are then written, tested, and implemented.

For Spring quarter 2015, we will study using Jython, a Java-based implementation of the Python programming language, and we will use a development environment designed for media computation.

Student Learning Outcomes

At the end of this course, students will be able to:

- Define and employ structured programming concepts, including Boolean logic, data types, statement and comment syntax, variables, functions, loops and conditional execution structures.
- Define object-oriented programming concepts, including encapsulation, abstraction, inheritance, and application programming interfaces.
- Explore software development life cycle concepts in planning, designing, implementing, and maintaining computer programs.
- Evaluate and critique design, documentation, logic, and correctness of code examples, and apply analysis skills and online resources to troubleshoot or debug code.
- Confidently assert the capability to learn other programming skills, tools, or languages, as future need or opportunity arises.

The media computation approach also introduces students to some elementary digital media concepts (digital images, digital audio, text and hypertext).

Academic Integrity:

Colorado Women's College fully endorses the University of Denver's Honor Code and the procedures put forth by the Office of Citizenship and Community Standards. Academic dishonesty—including plagiarism, cheating,

and falsification of data and research—is in violation of the code and will result in a failing grade for the assignment or for the course.

As student members of a community committed to academic integrity and honesty, it is your responsibility to become familiar with the DU Honor Code and its procedures (www.du.edu/honorcode).

Inclusive Excellence Statement:

CWC is committed to fostering a diverse learning community that is inclusive and respectful. We encourage and appreciate expressions of different ideas, opinions, and beliefs, so that conversations and interactions that could be potentially divisive instead turn into opportunities for intellectual and personal growth. Respecting what others say, their right to say it, and listening to each other are the ways that we all can further thoughtful and enlightening dialogue.

Required Course Textbook:

Authors: Mark Guzdial, Barbara Ericson

Published: Pearson Education Inc., publishing as Prentice Hall, 2013

Title: Introduction to Computing and Programming in Python, a Multimedia Approach, third edition

ISBN-13: 978-0-13-292351-4

(Note: the publisher very recently released a fourth edition of this title. We will use the THIRD edition, NOT the recent fourth edition for this course.)

Other Course Materials: links to on-line resources such as supplemental readings and presentations, available on the Internet at no cost, will be included among the course materials in our Learning Management System (Canvas).

Prerequisite Skills: Familiarity with computer environments, and ability to communicate instructions both verbally and in writing.

Computer: access to a computer with a contemporary operating system (Microsoft Windows, Mac OS X, or Linux) and sufficient privileges and ability to install software on that computer. The computer must have reliable Internet access, and satisfy Canvas technical specifications. Our classroom will have several computers to use in class, and students that use a laptop computer are encouraged to bring their own laptop for classwork.

Software: Microsoft Office 2003 or newer, or compatible software (for example, LibreOffice, Google Docs, etc.) Also, prior to or during the first week of the course, students will install the JES (Jython Environment for Students) integrated development environment; this software requires a Java runtime engine (included).

Course Requirements:

Preparation/Participation: 40 points

Homework Assignments(9): 30 points each (270 points aggregate)

Online Discussions(9): 10 points each (90 points aggregate)

In-class Final Exam: 100 points

----- TOTAL: 500 points. Your grade for the course will be based on a "curve," with minimum required earned points no higher than 475 for A, 450 for A-, 425 for B+, 400 for B, 375 for B-, 350 for C+, 325 for C, 300 for C-, 275 for D+, 250 for D. No "incomplete" grades will be offered; students must complete their coursework before the final exam.

Attendance and Participation:

Attendance is mandatory in all class sessions. Active participation in class and online discussions is also required and will be a determiner in a student's final grade. An absence, for any reason, will result in forfeiting points for in-class student presentations. These may not be made up in another class session. If an emergency arises, it is the student's responsibility to contact her instructor.

A grade of incomplete will not be granted under any circumstances.
http://www.du.edu/registrar/records/incompletepolicy.html

Technology Use in the Classroom:

In order to create and maintain an optimal learning environment in the classroom, students should use technology appropriately as directed by the instructor for the purposes of the course. Work done on laptops, cell phones, and other devices that is not relevant to the class can hinder the process of communication and shared discussion of ideas that require full engagement by all participants.

ADA Accomodations:

Students who require accommodations under the Americans with Disabilities Act must contact the instructor to discuss their needs. Failure to notify the instructor immediately may hinder the college's ability to accommodate accordingly. Students with learning disabilities should also contact the University Disability Services Program at http://www.du.edu/studentlife/disability/ . University Disability Services houses the Learning Effectiveness Program (LEP) and the Disability Services Program (DSP).

Observation of Religious Holidays:

Students wishing to observe a religious holiday not celebrated on the academic calendar may do so provided advanced written notice is given the instructor during the first two weeks of the quarter. With advanced written notice, the absence will be considered an excused absence. For additional information, contact DU's Center for Religious Services (http://www.du.edu/crs/).

Course Schedule and Topics:

Prior to March 24: Engage in the discussion topic RD1; post at least three times in the first discussion topic.

March 24: setting up our IDE, defining Python functions

March 31: using loops to modify pictures

April 7: nested loops

April 14: Selection and conditional execution

April 21: modifying sounds using loops and ranges

April 28: sound synthesis and building bigger programs

May 5: programs to manipulate text

May 12: programs for generating animations

May 19: object-oriented programming and other programming languages

May 26: wrapping up and final exam