COMP 1001: Introduction to Computational Thinking for Arts and Social Sciences

Course Outline for Winter 2016 (subject to change, last updated January 8, 2016)

Course Details

2:35 PM - 3:55 PM
Mondays and Wednesdays
SA THB

No classes on February 15 / 17 due to Fall Break.

https://culearn.carleton.ca/moodle/course/view.php?id=62461

Instructor

Andrew (Spencer) Polk
Office: 5331 HP
andrewpolk@cmail.carleton.ca
I usually respond to emails within 48 hours of receipt, and will seek to answer emails quickly when assignment deadlines loom. Please put “COMP 1001” somewhere in your email’s subject line, please!

Office hours:
12:00 PM to 2:00 PM
Monday
5331 HP

Note: I will not have office hours January 6th.

Teaching Assistants

Office hours will be held in 1170 HP starting the week of January 18.

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher Baker</td>
<td><a href="mailto:christopherjbaker3@cmail.carleton.ca">christopherjbaker3@cmail.carleton.ca</a></td>
<td>1:00 - 2:30 Tues</td>
</tr>
</tbody>
</table>
Course Description

This course is an introduction to computing. You will learn about what computer science is and how it relates to you as an arts or social science student. The goal is to understand on a deeper level how computation works and how to solve problems with it. To this end, you will learn some basic programming concepts with Python, and then apply your understanding to advanced usage of word processing, spreadsheet, and database software.

In addition to demonstrations and live coding during lectures, we will make use of Poll Everywhere questions and peer instruction to ensure you understand each concept before moving on. You are strongly encouraged to bring at least a mobile device, and preferably a laptop to class. Your laptop will be helpful to in following along with coding exercises done in class.

Learning to program can be challenging, but you can succeed if you try. Don’t allow yourself to get stuck without asking for help.

Learning Objectives

By the end of the course, you will:

1. Develop an appreciation of computer science.
   a. Understand what computer science is.
   b. See how computer science can help solve problems in arts and social sciences.
   c. Learn how computer science can help you by automating boring, repetitive, or error-prone tasks.
2. Develop computational thinking skills.
   a. Learn how information is stored on a computer.
   b. Learn basic programming concepts (variables, if statements, loops, and functions) and write simple programs using these concepts.
   c. Learn how to formulate searching and sorting problems in a way a computer can solve them, and understand the efficiency of the solutions.
3. Develop an advanced understanding of useful software packages by applying computational thinking skills.
   a. Apply an understanding of variables to effective use of word processing software.
   b. Apply an understanding of variables, if statements, and functions to effective use...
of spreadsheet software.
c. Apply an understanding of variables and references to database software.

Assessment

You must pass both the assignment and examination components of the course to pass.

If it is to your benefit, I will replace your Midterm mark with your Final mark (i.e., the Final will count for 70%), but not the reverse.

<table>
<thead>
<tr>
<th>Assignments (Best 4 of 5)</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm (Tentative: February 24)</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam (Date usually announced in February)</td>
<td>40%</td>
</tr>
</tbody>
</table>

Assignments

You may work together at the conceptual level, but you must work independently when writing your responses or code.

Late policy: Late assignments will not be accepted. The lowest assignment mark will be dropped, allowing you to miss an assignment without penalty. If you must miss more than one assignment for a documented medical reason, please get in touch with me. DESPITE THIS, I HIGHLY RECOMMEND YOU DO ALL ASSIGNMENTS!

Assignments will tentatively be due at midnight (actually 11:55) on the following dates:

<table>
<thead>
<tr>
<th>Assignment 1</th>
<th>Computer science and computational thinking, binary numbers</th>
<th>January 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 2</td>
<td>Data representation, first Python program</td>
<td>February 5</td>
</tr>
</tbody>
</table>
Final Exam

The time and place as well as the format of the final exam will be announced later in the term. Do not make travel plans until the dates are known as no advance exams will be given. The exam period is from April 11 - 23.

Textbooks

There are no required textbooks for this course. There will be notes made available and links to online resources given through cuLearn.

Software and Hardware Requirements

We will be using Python 3 (current version is 3.5.1) for this course, which is freely available. All SCS lab machines have both Python 2 and Python 3 installed, and you should have no problem downloading Python 3 from here: https://www.python.org/downloads/. Python comes with a graphical interface called IDLE, which we will also be using. The version in the labs is 3.4.3, however it will make no difference for our purposes; there will only be some cosmetic changes to IDLE.

We will make use of Poll Everywhere in class. This software works a bit like clickers, but does not require a dedicated clicker device. Instead, you only need a mobile device or laptop. You can submit your responses via text message or through the web interface. Please bring your device of choice to class.

SCS Computer Accounts
Any student taking an SCS course qualifies to have an SCS account. SCS accounts can be created at the following URL: http://www.scs.carleton.ca/newacct. SCS students can access one of the designated labs for your course. Laboratory machines will not accept your MyCarletonOne login, you must make an account for the labs.

The labs are operational 7 days a week 24 hours per day, please be advised that the building will be closed overnight, Mon. - Fri. 23:00 - 8:00 and on weekends from 17:00 - 8:00. Technical support is available in room HP5161 Monday to Friday from 9:00 until 17:00.

All SCS account related information is accessible at the following URL: http://www.scs.carleton.ca/nethelp.

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca.

The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

University Policies

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.
Unauthorized Co-operation or Collaboration

You may collaborate at the conceptual / problem-solving level of assignments and tutorials, but collaboration is strictly prohibited when writing code, which must always be your own.

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to http://www.carleton.ca/registrar/forms

Academic Accommodations

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://www.carleton.ca/equity/

Religious obligation: Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://www.carleton.ca/equity/

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the
formally-scheduled exam (if applicable) at
http://www.carleton.ca/pmc/new-and-current-students/dates-and-deadlines/

You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at http://www.carleton.ca/equity/