

COMP1001

Introduction to Computational Thinking for Arts and Social Sciences

Description

An introduction to computational thinking and its applications to the arts and social sciences. Students will gain computational thinking skills by exploring data representation, basic programming concepts, a selection of algorithms, and advanced usage of software packages for the arts and social sciences.

Precludes additional credit for COMP 1004. This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics, or Science.

Topics Covered

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.

Course 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.

Textbook

There are no required textbooks for this course. There will be notes made available and links to online resources given through the [course website](#). You are strongly encouraged to attend every lecture and take your own detailed notes.

Course Software

We will be using Python 3 (current version is 3.5.2) 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 may differ slightly, however it will make no difference for our purposes; there may 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.

Evaluation

Students will be evaluated in this course according to the following measures:

Component	Weight
Assignments (x5)	30% (6% each)
Mid-term exams (x2)	30% (15% each)
Final Exam	40%

Midterms

The midterms will be closed-book and will cover material discussed up to the lecture prior to the tests. The test will be held during regularly scheduled lecture, the specific dates will be announced on the [main course page](#) and in lecture. You must attend, write, and submit the midterm in order to be graded. If sick, you must inform the instructor via email by the day before at the latest, and you will need [official documentation](#) as well. Exceptions are only granted at the discretion of the instructor.

Assignments

- There will be 5 assignments in this course.
- All assignments will be made available on the course web page as they are released.
- All assignments should be completed on an individual basis (no working in pairs or groups).
- All assignments are counted towards the final grade.

- Recommendations:
 - Do not wait until the last minute to submit your assignments.
 - Start early and keep submitting partially completed versions. That way, if you get sick, your partially completed version will be marked, and you will not get 0. Being sick on the day an assignment is due is not an excuse for not doing it. Last minute issues such as a home internet or device failure are not considered acceptable excuses.
 - Always keep a backup of your work, perhaps on a USB flash drive, via [Dropbox](#), or by sending yourself an email with your assignment attached. That way you can access your code from anywhere.
 - If you are sick for an extended period of time, please inform the instructor (not the TAs). You will need to have [official documentation](#) of illness. Such situations will be handled on a case-by-case basis.
 - If any instructions are unclear, please ask for clarification. Incorrect assumptions or misunderstood directions will not be accepted as valid excuses. It is your responsibility to ensure you understand the question completely.
- Submission Guidelines:
 - You will be using Carleton's cuLearn system to submit your assignments and view your grades throughout the term.
 - You should take the time to ensure that assignments are neat, legible and easy to understand. A portion of your grade for assignments will be given for the readability of them and for your demonstration that you have completed the assigned tasks. Often this is in the form of documentation and testing.
 - The assignment page is likely to have a section on submission guidelines. Please observe all special requirements placed there as well.
 - Remember, it is YOUR responsibility to demonstrate that you have understood and completed the assignment.
 - Any instructions required by the teaching assistants (for example any assumptions you made about the assignment) should be clearly indicated on a separate README.TXT file, included with the assignment.
 - DO NOT email your assignments to any TAs unless requested to do so.
- Grading:
 - All assignments submitted through cuLearn will be graded by the TAs or the Instructor.
 - Grading turn-around is expected to be within one week of the submission deadline, though this may vary depending on the volume and complexity of assignments.
 - You will be provided with a mark and feedback on your assignment through cuLearn as well.
 - You should ensure that the posted marks are correct.
 - Any concerns regarding assignment marks should be brought to the attention of the person who marked it, not the instructor. Contact emails are available via the [Schedule](#) page.
 - If the TA is unable to reasonably assess your concerns either they or you may contact the instructor to arbitrate the discussion.

- Voicing your concerns must be done **no later than two weeks** after the assignment has been returned to you. After this time, no remarking will be done.
- Late Policy:
 - Assignments must be handed in before or on the due date and time.
 - You will be given a sufficient amount of time to complete each assignment.
 - Any assignments submitted after the deadline will be marked with a late penalty.
 - If an assignment indicates that no lates will be accepted then the late penalty will be 100% immediately following the deadline.
 - The standard late penalty is 25% per day. (E.g., your assignment is 30 minutes late, it is -25%, 24 hours and 1 minute late, it is -50%).
 - Any changes made to an assignment submission after the deadline (even minor or insubstantial ones) will result in the *entire* submission being considered late.

Tutorials

There are no scheduled tutorials for this class.

Collaboration Policy

Collaborating on assignments is strictly disallowed. You must complete the work by yourself. If you need help, please see a TA or your instructor. Posting assignment solutions on discussion boards before the due date and time is also prohibited.

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. 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

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.

Students with Disabilities Requiring Academic Accommodations

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). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Religious Obligation

Write to me concerning 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/accommodation>

Pregnancy Obligation

Write to me concerning 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/accommodation>

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>