

# COMP 1001 - Course Outline

## Introduction to Computational Thinking for Arts and Social Sciences

Winter 2016, Carleton University

### 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 exam	30%
Final Exam	40%

## Assignments

- There will be 5 assignments in this course which will be available on the course web page.
- All assignments should be completed on an individual basis (no working in pairs or groups).
- All assignments are counted towards the final grade.
- Assignments must be handed in before or on the due date and time.
- You will be using Carleton's cuLearn system to submit your assignments and view your grades throughout the term.

- 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.
- 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.
- 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.
- Remember, it is YOUR responsibility to demonstrate that you have understood and completed the assignment.
- The cuLearn system also allows you to view your marks on-line. You should ensure that the posted marks are correct.
- Any complaints regarding assignment marks should be brought to the attention of the TA who marked it (only if the TA does not address the problem to your satisfaction should you bring the matter to the instructor).
- This should be done **no later than two weeks** after the assignment has been returned to you. After this time, no remarking will be done.
- You will be given ample time to complete each assignment.
- 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 failure are not considered acceptable excuses.
- Late assignments may be marked at the instructor/TA's discretion with a **penalty of 25% per day**.
- DO NOT email your assignments to any TAs unless requested to do so.
- 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. At this point, it will be up to the instructor's discretion as to how to handle the situation.

## Tutorials

There are no scheduled tutorials for this course.

## Midterm

The midterm will be closed-book and will cover material discussed up to the lecture prior to the midterm. The date for the midterm is tentatively scheduled for October 22nd during regularly scheduled lecture. Your test must be handed back immediately when completed in order to be graded. You must attend and write the midterm. 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.

## **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 can be found at <http://carleton.ca/registrar/registration/dates-and-deadlines/>.

## **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 Labs**

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](mailto: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**

Register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities could include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you only require accommodations for your formally scheduled exam(s) in this course, please submit your request for accommodations to PMC by the deadlines published on the PMC website: <http://www.carleton.ca/pmc/new-and-current-students/dates-and-deadlines/>

## **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>