**Winter 2015 -- COMP 1004A**

**Introduction to Computers for the Sciences**

**COURSE OUTLINE**

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# General Course Description

An introductory course intended to give students a working knowledge of computers and their applications with particular reference to problems in Science. This course will allow students to get "hands on" experience with several commonly used software application packages such as spreadsheets, databases and symbolic mathematics programs.

Precludes additional credit for COMP 1001. This course cannot be taken for credit by students in the B.C.S. program or combined programs in Computer Science.

Lectures three hours a week.

# Expectations and Goals

Important: This course is designed to give students an introduction to a set of important software applications useful in the Sciences. A basic familiarity with computers is assumed, so that it is expected that the student has experience with the basics of the operating system and has used application programs such as word processors.

Note also that students are expected to have the high school mathematics background required for science as applications will be developed which may use high school calculus and functions.

# Instructor

Professor Reichstein

5125D HP (Herzberg Laboratories) reichstein AT scs.carleton.ca OR ireichst AT connect.carleton.ca

# Course Website

## The course web page is at http://www.scs.carleton.ca/~irwin/COMP1004/

The course website (NOT cuLearn) will be used for assignments, notes etc. We will use cuLearn for assignment submission only and for grades. Students should consult the course page often as they will be responsible for information on the website.

# Topics

Time permitting, the following topics will be covered in this course:

1. Data representation (Bits and Bytes)
2. Operating System Fundamentals
3. Spreadsheets (Microsoft Excel)
4. Databases (Microsoft Access)
5. Symbolic mathematics (Matlab or Maple)
6. Internet (HTML)

# Texts and Notes

There is no textbook required for the course. Instead, a series of online course notes will be available on the course website (NOT the cuLearn site). It is very important that these notes be read. They may be printed or read online. They are a vital source of information given at the necessary level of detail for this course (not too much, not too little).

Students are advised and encouraged to take whatever in-class notes they feel necessary. The availability of online notes may make some feel that taking notes in class is unnecessary but the assignments will contain conceptual material not in the notes and so at times note taking is important. You may wish to print the online notes before class and make additional notes in the margins. The notes are no substitute for class attendance as many topics, particularly the material in the assignments, are only discussed in class.

There are many books on the subject matter of the course which are available at most computer book stores. These are not required for the course but any student who wishes to explore a particular application in more depth should consider them.

# Grading Scheme

Assignments 20% 5-6 assignments

Midterm 35% Student ID required. Date TBA. Note that in addition to the midterm there may be one or two in-class tests which will factor into the midterm mark.

Final 45% Scantron (Multiple Choice) Student ID required. Date TBA. (Do not make travel plans until the date is known)

If a student fails **both** the midterm and the final exam, that student will receive an F, regardless of assignment marks. The final mark will be calculated using the grading scheme above. However, the grade will also be re-calculated using a heavier weight for the final, namely 25% for the mid-term and 55% for the final. The better of the two calculations will be used. **Any person unable to take the midterm for valid medical reasons will have that portion of their grade assigned to their final exam.**

# Assignments

There will be 5 or 6 assignments in this course. Assignments will be announced in class and will be available online on the course web site (NOT on the cuLearn site) and are due at the time indicated on the assignment. Assignments are to be submitted electronically using the cuLearn system. It is the student’s responsibility to ensure that assignments are submitted properly and that all necessary files for the assignment are included. Except in exceptional circumstances, no late assignments will be accepted. E-mailed and hardcopy submissions are not acceptable!

Please remember to BACK UP all your work before submitting your assignment! Students will also have access to space on the School of Computer Science's computer network where they can store their work but the simplest way to do this in the labs is with a USB key or flash drive. It is wise to back up all work regularly.

Copying of assignments is NOT allowed. Discussion of assignment work with others is acceptable but students are expected to do the assignment work by themselves. On the first occasion where work has been shared, the assignments of all the collaborators will be graded 0 (zero). On subsequent occasions, the collaborators will be reported to the Dean of the faculty in which they are registered. The rules stated in the Calendar (see Instructional Offenses) apply.

Students must retain all assignments and midterm results in case of questions regarding correctness of recorded marks. Students should ensure that marks posted on the cuLearn system are correct. Any complaints regarding assignment marks should first be brought to the attention of the Teaching Assistant (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 marked. After this time no remarking will be done.

# Final Exam

The final exam is scheduled by the University. The time and place will be announced later in the term on the university web-site and at various places around the campus. Do not make travel plans until the dates are known as no advance exams will be given. The final exam for this course will be graded using the Scantron automatic grading system so students will need to bring an HB#2 pencil and a soft eraser to the final exam.

Course Information: Web page and University email

As well as being announced in class, all important information, such as course news, assignments, TA hours, instructor office hours, midterm date, etc. will be available on the course web page. Special announcements will be mailed to the students via their University email accounts. As the university communicates with students through this email address as well, it is expected that students will be reading their email regularly.

# Laboratories

The labs available for use by students of this course as well as the facilities available are available from the "tech support" section of the School of Computer Science Web page. The labs can be found by going to the School of Computer Science website at:

http://www.scs.carleton.ca/ and clicking on "tech support" at the top. Scroll down for information on Accounts and Labs.

Much of the required software is available on all university computers but students in the course therefore have available a separate computer science account in addition to the University account.

If you have access to other computers you are free to use them for your assignments. However, it is your responsibility to make sure that the software you use is compatible with the software in the computer science labs. If you do your assignments elsewhere, you must check that everything still works using the SCS lab computers.

All software required for this course will be available in the labs in Herzberg as well as on university computers as mentioned above.

# Office Hours

There will be office hours assigned for the TAs and the Instructor. These are available from the course website. Appointments can also be made to speak with the Instructor at other times if the posted office hours are inconvenient. Students should be aware that this important student resource may be used at times other than when assignments are due.

# Attendance

Class attendance is very important as students will be responsible for all items discussed in class. Assignments will be discussed in detail in class and supplementary material for the assignments will be discussed in class.

# 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 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 cooperation 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.

## Unauthorized Co-operation or Collaboration

**Please insert a statement here indicating whether collaboration on assignments is permitted and to what extent. For your information refer to the following Senate policy.**

*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.*

# Equity Statements

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://www2.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://www2.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 formallyscheduled exam (*if applicable*) at http://www2.carleton.ca/pmc/new-and-current-students/datesand-deadlines/

 You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at http://www2.carleton.ca/equity/

## 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://www1.carleton.ca/registrar/forms/

# Last Day to Withdraw from Courses

April 8, 2015 is the last day for academic withdrawal from fall term courses