

## Course Outline for COMP1405B (Fall 2015)

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### Introduction to Computer Science I

*A first course in programming for B.C.S. students emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.*

#### Course Information

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**Instructor Name**  
**Contact Information**

**Robert Collier**  
[robert.collier@scs.carleton.ca](mailto:robert.collier@scs.carleton.ca)

**Lecture Hours**  
Tuesdays and Thursdays  
11:35 – 12:55  
Minto Centre, Room 2000

**Office Hours**  
Tuesdays and Thursdays  
13:30 – 15:00  
Herzberg Laboratories, Room 5326

**Course Website**  
<https://www.carleton.ca/culearn/>

**Course Forum**  
<https://www.carleton.ca/culearn/>

#### Required Textbook

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There is one (1) **required** textbook for this course: **Gaddis, T. (2015). Starting Out with Python. (3<sup>rd</sup> or 2<sup>nd</sup> Edition)**

#### Assessment Scheme

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Your performance in this course is assessed using several components. These include a collection of **ten (10) mandatory weekly tutorials** (beginning the week of September 14<sup>th</sup>), **six (6) assignments**, **two (2) in-class tests** (on Tuesday, October 7<sup>th</sup> and Tuesday, November 10<sup>th</sup>, respectively), and a **final examination** (to be scheduled by the registrar). The grades you achieve on these components will be weighted according to the following scheme.

Tutorials (10 × 1% each)	10%	Assignments (6 × 5% each)	30%
In-Class Tests (2 × 15% each)	30%	Final Examination	30%

**Tutorials are mandatory** and **attendance is taken** at the beginning of each tutorial. You will receive up to 1.0% of your final grade each time you **attend and participate in the tutorial for the full 1.5 hours**. You must **attend the tutorial in which you are registered** – you will not receive marks if you attend a tutorial other than the one in which you are registered. While the tutorial is in progress you must be working on the tutorial. You may not work on an upcoming assignment during the tutorial, and **anyone who is not working on the tutorial work will be asked to leave and will not receive any marks**. You are **not permitted to work on the tutorial in advance**.

**Assignments are mandatory** and must be handed in **before the due date and time**. **Late assignments are not accepted under any circumstances**. You will **use cuLearn to submit your assignments** and **you must ensure that the marks posted to cuLearn are correct within two weeks** of the date the assignment was graded. Concerns or complaints about the grading of the assignments must be communicated to the teaching assistant within that time – **after two weeks, no assignment remarking is possible**.

**Tests are 40 minutes** long, are **closed-book**, and **only cover material presented since the most recent test**.

## Prerequisite Courses

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Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Credit in this course precludes additional credit for COMP 1005, SYSC 1100 (no longer offered), ECOR 1606, and SYSC 1005.

## Learning Outcomes

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If a student attends every lecture and completes every assignment and tutorial, then by the end of this course that student should be able to:

- Use a **programming language** to write computer programs (in the **imperative paradigm**)
- **Explain** the **difference** between **designing an algorithm** and **implementing an algorithm** in source code
- **Apply different problem-solving heuristics** (e.g., divide-and-conquer, abstraction, etc.)
- **Explain** the following topics:
  - **data types, variable assignment and usage**
  - **propositional logic, Boolean values, branching control structures, "if" statements**
  - **pre-tested and post-tested looping control structures, "for" and "while" loops**
  - **nesting**
  - **one-dimensional and multi-dimensional lists**
  - **objects for data storage**
  - **functions and recursion**
  - **simulation**
- **Implement** some basic **searching and sorting algorithms**
- **Demonstrate** an understanding of **good programming practices** and an ability to **test and debug**

## Important Considerations

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**Assignments submissions are handled electronically, so there is no "grace period" with respect to an assignment deadline – an assignment that is no more than a minute late will be rejected and will receive a mark of zero.**

**Technical problems do not exempt you from this requirement**, so if you wait until the last minute and then have issues with your connection, you will still receive a mark of zero. Consequently, you are advised to:

- **periodically upload you progress** (i.e., upload partially completed submissions)
- attempt to **submit your final submission at least 30 minutes in advance** of the due date and time

Because assignment specifications are posted well in advance of their due dates, **illness does not excuse a student from completing an assignment**. No provision is made for missed assignments, and no extra credit assignments will be available.

Students with an **illness on the day of a test or tutorial might be granted an exemption** if and only if they provide a **Carleton University Medical Certificate** ([http://carleton.ca/registrar/wp-content/uploads/med\\_cert.pdf](http://carleton.ca/registrar/wp-content/uploads/med_cert.pdf)) that has been completed and signed by a physician.

## Plagiarism Policy

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**Everything you submit for marks in this course** (including assignments, exercises, etc.) **must be the result of your own work** and it must have been **developed specifically for this offering of this course**. To clarify, this means that if you have taken this course before (in a previous semester), you may not submit any of the work you did for that previous offering, even if it is your own.

Everything you submit for marks in this course **must not reflect the efforts of anyone else unless you explicitly document the source**. In practice this means that you must provide a citation for everything you use in the development of your assignments and exercises, including (but not limited to) materials from the course textbook, discussions with your classmates, teaching assistants or tutors, and anything you find online. For submissions of programs, source code, and pseudocode, you must **provide a citation for any block of code that is at least three simple statements in length**, regardless of whether or not you modified it.

To ensure that this directive is followed, **every submission you make must include the following citation**:

Collier, R. "Lectures Notes for COMP2402B - Abstract Data Types / Algorithms" [PDF document]. Retrieved from cuLearn: <https://www.carleton.ca/culearn/> (Fall 2015).

To cite a **textbook**, use the following format: ***Last Name, First Initial. (Year of Publication). Title (pp. Pages).***  
e.g., Morin, P. (2013). Open Data Structures (in Java). (pp. 1-334).

To cite a **website**, use the following format: ***Webpage Title. (Access Date). Retrieved from URL.***  
e.g., Open Data Structures. (2015-09-01). Retrieved from <http://opendatastructures.org/>.

To cite a **discussion**, use the following format: ***Last Name, First Initial. (Personal Communication, Date).***  
e.g., Collier, R. (Personal Communication, 2015-09-01).

Please also note that **providing citations for the sources you use** that are not your own may prevent charges of academic misconduct but it **does not allow you to receive credit for work you did not create**. To clarify, if you submit a program that includes a large block of source code from a program you didn't write for this offering of the course, then even if you provide a citation **you will not receive credit for that component**.

You are free to discuss general approaches with your friends and classmates, but you are **never permitted to access to the flowcharts, design documents, pseudocode, or source code of another student**. You should never receive any materials, written or electronic, from another student, and if you do meet with friends or classmates to discuss general approaches you are not permitted to leave those discussions with any written or electronic material.

It is also a serious offense to help someone else commit plagiarism. You are **never permitted to provide another student access to the flowcharts, design documents, pseudocode, or source code that you or anyone else has written**. If you suspect that someone has been able to acquire a copy of your work, then you must inform the instructor for the course immediately.

Please note that **electronic tools may be used to analyze and compare submissions** to ensure that no instances of academic misconduct have been committed.

### **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.

### **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](mailto: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://www2.carleton.ca/pmc/new-and-current-students/dates-and-deadlines>

### **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/>

### **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/>

### **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/form>

## Additional Notes

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**Including** the time spent **attending lectures** and **completing tutorials**, students can expect to spend **at least ten (10) hours per week on this course**. **Students are responsible for all course materials**, including lecture notes, tutorial exercises, and all materials discussed in class and on any of the official discussion boards.

The instructor will attempt to **answer every student email received within two business days** of the time the message was received, **unless the email requests information already posted** on cuLearn or in the course outline. To ensure that all announcements are received, **students are expected to check their email on a daily basis**.

**All materials created for this course** (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) **remain the intellectual property of the instructor**. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. **Reposting, reproducing, or redistributing any course materials**, in part or in whole, without the written consent of the instructor, **is strictly prohibited**.

## Undergraduate Academic Advisor

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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 or 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.

## Learning Support Services Incentive Program

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This course has been registered in the study skills Incentive Program offered through Learning Support Services (LSS). Workshops at LSS are designed to help students develop and refine their academic skills for a university environment. **To earn an additional 3.0% bonus towards your final grade** you are expected to attend both the **"Time Management" and "Managing Procrastination" workshops**. The workshops for the Fall 2015 term will become **available starting September 14<sup>th</sup> and must be completed by October 14<sup>th</sup>** to receive credit for the Incentive Program.

Please note that **you must bring your Carleton ID card** with you **to each workshop**.

Please also note that **completing these workshops online will not entitle you to the bonus marks**.

It is the student's responsibility to ensure that they have signed the attendance sheet at the end of each workshop in order to receive an incentive mark for workshops that they attend. If students leave the workshop early or do not sign the attendance sheet at the end of the workshop, LSS will have no record of their attendance at the workshop and, therefore, the student will not receive any bonus/participation mark for that workshop.

To see the complete workshop schedule and to preregister (not mandatory) please visit the study skills workshop page on the LSS website: <http://carleton.ca/lss/study-skills-workshops/>. As an additional incentive, students who attend 5 or more workshops throughout the academic year can apply to have the Skills for Academic Success Certificate added to their Co-curricular Record. For more information, please contact Learning Support Services at [learningsupport@carleton.ca](mailto:learningsupport@carleton.ca) or 613-520-2600 ext.1125.