
Course Information

Instructor Details

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Course Website

"Merge COMP3007A:COMP3007B
 Programming Paradigms (LEC) Winter 2022"
<https://brightspace.carleton.ca/d2l/home>

Lecture Hours COMP 3007 A

Tuesdays / Thursdays
 11:35 - 12:55
 Online Blended

Lecture Hours COMP 3007 B

Wednesdays / Fridays
 14:35 - 15:55
 Online Blended

n.b., Teaching Assistant Contact Information and Office Hours will be posted to Brightspace.

Calendar Description

"An introduction to alternative programming paradigms such as functional, constraint-based, concurrent, and logic programming."

Required Textbook

One (1) **required** textbook: **Lipovaca, M. (2011). Learn You a Haskell for Great Good!**

(n.b., this textbook is available to read for free at <http://learnyouahaskell.com/chapters>)

Two (2) **optional, recommended** textbooks: **Clocksin, W. (1994). Programming in Prolog**
 Thompson, S. (2011). Haskell: the Craft of Functional Programming

Topics Covered

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:

- describe and contrast the different programming paradigms
- use structural induction to prove (rather than test) the correctness of a program
- use Haskell for writing programs in the functional programming paradigm
- use Prolog for writing programs in the logical programming paradigm
- explain equational reasoning, lazy evaluation, referential transparency
- demonstrate primitive recursion, general recursion, and tail-call optimization techniques
- demonstrate pattern matching and the use first-class objects and higher-order functions

Assessment Scheme

Your performance in this course is assessed using several components. These include **the best six (6) of 8 weekly assignments, two (2) quizzes (the weeks of February 14th and March 28th, respectively)**, and a final examination (scheduled by the registrar). Final grades will be determined using the scheme below, and **no extra credit assignments will be provided under any circumstances**.

Assignments (5% each)	30 %
Quizzes (15% each)	30 %
Final Examination	40 %

Quizzes are mandatory and will be conducted online using Brightspace. Each of the two quizzes will be available during a 48-hour period (to facilitate access for students in distant time zones). **Refer to the tentative calendar** posted to Brightspace for the exact dates.

Assignments are mandatory and you will upload your assignment submissions to Brightspace. The assignment component of your final grade is computed using only **the best six of the scores you receive** on your assignments. As a result, **the instructor does not grant exemptions** for the assignments. You are expected to work on your assignments consistently once they are released (**uploading your progress at least once every 48 hours**). **Under extenuating circumstances**, if you are seeking additional accommodations for your assignments (perhaps due to an ongoing medical issue, for instance), you may **petition the Associate Dean's office**.

Plagiarism Policy

There is a separate plagiarism policy document for this course that can be found on the course website. **Students must read this document thoroughly and must agree to adhere to this policy** (and all policies stated in this course outline) **before any resources will be made available**.

In the event that a student has been **found to have committed an instructional offence**, a penalty will be applied to that student's final grade and the activity in question will not be dropped during computation of the student's final grade. **If the penalty applied** by the Office of the Associate Dean is **less than the total value of the activity**, the **remaining weight is shifted onto the weight of the final exam**. Consider the following example: if the course has an assignment worth 10% and a final worth 40% and a student plagiarizes and receives a 50% deduction to his or her assignment, their final exam would be worth 45% of the final mark and the **plagiarized assignment would be worth nothing**. To clarify, 50% of the 10% allocated to the assignment was lost and the remaining 50% of the 10% allocated to the assignment was shifted to the final.

Students are invited to **discuss any concerns with the instructor at the earliest opportunity**.

Important Considerations

Assignments submissions are handled electronically (i.e., through Brightspace) and although **assignments are technically due on Fridays by 11:59pm EST**, submissions will also be accepted up to a **"cut-off" deadline 48 hours later** (i.e., on Sundays at 11:59pm EST). There is no further "grace period" beyond that, and **any assignment submitted even one minute after the "cut-off" deadline is considered "late" and will receive a mark of zero.**

Technical problems do not exempt you from the requirements above, so if you wait until the last minute and then have issues with your internet connection (for instance), you will still receive a mark of zero. Consequently, you are formally instructed to:

- **periodically upload your progress** (i.e., upload your progress at least once every 48 hours)
- **attempt your final submission at least one hour in advance** of the due date and time

For most assignments, you will be submitting files that contain source code, and these files must have the correct filenames and the specified format. **Assignments that are incorrectly named or in the incorrect format will be penalized and may receive a mark of zero. If any of the source code files you submit does not run (for any reason) then it will receive a mark of zero.** Consequently, **after you upload your submission you are required to re-download it immediately** and ensure that:

- **your submission was the correct type of file and has the correct filename**
- **each of your source code files can be executed using our official environments**

You are expected to **demonstrate good programming practices at all times** and **your code may be penalized if it is poorly written**. You are also **expected to do the necessary preparatory work** before you begin programming. **You may be asked to present either pseudocode or a flowchart before you will receive any assistance** from the instructor or a teaching assistant.

It is your responsibility to ensure that your quiz, tutorial, and assignment marks posted to Brightspace are correct, and you must do so **within two weeks** of the date the marks were released. Concerns or complaints about the grading of must be communicated (first to the teaching assistant, then, if the result is unsatisfactory, to the instructor) within that two week period after the release of the marks. **After those two weeks, all marks are considered final and will not be changed under any circumstances.**

Students with an **illness on the day of a quiz may be granted an exemption** only if they submit a copy of **Carleton's official Self-Declaration** (in lieu of a medical certificate) Form, available online from <https://carleton.ca/registrar/cu-files/covid-19-self-declaration-form/>.

Please note that a student cannot, for any reason, be exempted from more than one (1) of the quizzes. No provision is made for missed assignments, beyond the fact that only the best six (6) of the 8 weekly assignments will be used when determining the final grade.

Additional Notes

In addition to the time spent **attending lectures** and **completing tutorials**, students can expect to spend **at least nine (9) 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.

Students are asked to **pose all questions related to course content using the official discussion boards**; **students should avoid emailing** the instructor directly **unless the question contains confidential information** or is of a personal nature.

The instructor will **attempt to answer every student email received within three business days** of the time the message was received, **unless the email requests information already posted** on the official discussion boards 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

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 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.

You must also read:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Computer Laboratories

Under normal circumstances, students from the School of Computer Science (SCS) can access one of the designated computers labs for their courses. The lab schedule can be found at: <https://carleton.ca/scs/tech-support/computer-laboratories/>. Further information about the computer labs and technical support can be found at: <https://carleton.ca/scs/technical-support/>. Technical support is also available in room HP5161 Monday to Friday from 9:00 until 17:00 or by emailing SCS.Tech.Support@cunet.carleton.ca.

University Policies

For information about Carleton's academic year, including registration and withdrawal dates, see Carleton's Academic Calendar at:

<https://calendar.carleton.ca/academicyear/>

Pregnancy Obligation

Please contact your instructor 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:

<https://carleton.ca/womensstudies/resources-and-links/equity-services/>

Religious Obligation

Please contact your instructor 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:

<https://carleton.ca/equity/focus/discrimination-harassment/religious-spiritual-observances/>

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC 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 your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the Paul Menton Centre website. For more information, visit:

<https://carleton.ca/pmc>

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support:

<https://carleton.ca/sexual-violence-support>

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor 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, see the policy at:

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

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. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found at:

<https://carleton.ca/registrar/academic-integrity/>

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. Standard penalty guidelines can be found at:

<https://carleton.ca/registrar/academic-integrity/>

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.