Carleton University School of Computer Science
COMP 2401A -- Introduction to Systems Programming

Class Schedule

Classroom: River Bldg. 2200
Class Times: Tuesday and Thursday 10:00-11:30
Tutorials: HP4155
  - Session A1 – Wednesday 17:30 – 19:00
  - Session A2 – Wednesday 19:00 – 20:30
  - Session A3 – Thursday – 19:00 – 20:30
  - Session A4 – Thursday – 17:30 – 19:00

Course Website: on CULearn

Teaching Assistants:

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<thead>
<tr>
<th>TA</th>
<th>Email</th>
<th>Office hours</th>
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Course Description

Introduction to system-level programming with fundamental OS concepts, procedures, primitive data types, user defined types. Topics may include process management, memory management, process coordination and synchronization, inter-process communication, file systems, networking, pointers, heap and stack memory management, and system/library calls.
Course Topics

The following topics will be covered in this course:

- Introduction to Computing – Overview of computer organization, basics of programming
- Data Representation - primitive data types, compound data types, Pointers
- Memory Management - stack and heap, dynamic memory allocation, linked lists
- Program Building – compiling, linking, make program, debugger
- Concurrent Computing - concurrent systems, processes (signals, sockets), threads
- File I/O
- Program Structure – i/o, procedural program design, program organization

Prerequisites

COMP 1406 or COMP 1006, with a minimum grade of C

Course Objectives

- Programming using the C language
- Low level manipulation
- Procedural Programming
- Basic system programming (using system operations)
- Using Unix/Linux

Textbook(s) -

- The textbook is not mandatory but highly recommended

Evaluation

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>20%</td>
<td>cuLearn</td>
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<tr>
<td>Tutorials</td>
<td>10%</td>
<td>weekly</td>
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<tr>
<td>In class Test *(1 or 2 tests)</td>
<td>25%</td>
<td>TBA</td>
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<tr>
<td>Quizzes*</td>
<td>1% per quiz</td>
<td>TBA</td>
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<tr>
<td>Final Exam*</td>
<td>45%</td>
<td>TBA</td>
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<tr>
<td>Incentive Workshops**</td>
<td>1%</td>
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<tr>
<td>Class participation</td>
<td>5%</td>
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</tbody>
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* see Evaluation Notes regarding final weight
** will depend on workshop offering
Evaluation Notes

Assignments

There will be 4-6 assignments in this course. Assignments will be announced in class and will be available on cuLearn. Assignments are to be submitted electronically before the due date on cuLearn. No Late Assignments.

You must submit at least 60% of the assignments to meet the course requirements

Tutorials

There will be 10-11 tutorials. The tutorials provide you with a time to gain experience with the material leaned in class. Use it to gain insight and ask questions if you do not understand the material.

Tutorial rules:

❖ You are required attend the tutorial session for which you are registered
❖ Although no grades will be given for tutorial attendance, attendance will be taken.
❖ 1% will be assigned to each tutorial to a maximum of 10
❖ In order to receive 1% per tutorial you must:
  • Complete the tutorial
  • Submit the tutorial (your will have a week to do so)
  • Demo the tutorial and correctly answer questions about the tutorial (explaining what you did). It is the TA’s discretion to award you the 1% for the tutorial.

You must attend at least 50% of the tutorials.

In-class Tests (midterm tests)

There will be one or two tests during the semester. In case when only one test will be conducted. The weight of the in-class tests may be reduced with respect to the number of quizzes. It is at the discretion of the instructor to determine whether the quizzes weight will be shared with the weight of the in-class exams or the final exam. Exams will either be graded by the course TAs/instructor or by Scantron.

Students must retain all assignments and midterm results in case of questions regarding correctness of recorded marks. The marks will be posted on-line. The students should ensure that the posted marks are correct. Any complaints regarding assignment marks should be brought to the attention of the T.A. who marked it (only if the T.A. does not address the problem to your satisfaction should you bring the matter to the instructor).
This should be done no later than one week after the assignment has been marked. After this time no remarking will be done.

**Quizzes**

There will be several quizzes during the term. The quizzes will most likely be online quizzes on cuLearn. Quizzes will be completed outside of class time. Quizzes duration will be 15-60 minutes long. Students will be given a range of time to start the quiz (e.g., 24 hours).

The weight for each quiz is 1% that will be subtracted either from the in-class tests weight or the final exam weight (instructor discretion). For example if there will be only one quiz then the instructor may decide to have quiz weight as 1% and in-class exams weight as 24%.

**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 special arrangements for earlier exam will be made. The final exam for this course will be graded using the Scantron automatic grading system and where applicable by the instructor or course TAs.

The weight of the final exam may be reduced with respect to the number of quizzes. It is at the discretion of the instructor to determine whether the quizzes weight will be shared with the weight of in-class exams or the final exam.

One must obtain a passing grade in the final exam in order to pass the course.

**Incentive Workshops**

Students can take up to three study workshops from the list that is associated with the course. For each completed workshop the student will receive 0.3% bonus (completing 3 workshops will result in 1% bonus instead of 0.9%).

This part of the grade will depend on the workshop offering and may change (number of workshop and/or bonus amount)

**Class participation grade**

Class participation is encouraged. Class participation points will be given at the discretion of the instructor.
Attendance

Class attendance is very important as students will be responsible for all items discussed in class.

Course notes will be provided. However, the course notes will cover only the main topics. In class tests and final exam will include all material that is covered during class time, tutorials, and assignments. Note that annotated notes during class time will not be posted.

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 or on the internet before or after 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 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 of Science.

See university policy regarding Academic Integrity and Plagiarism:
http://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.

Information on Academic Accommodations

Requests for Academic Accommodation
You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

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 the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

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 the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

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. 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 is 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, visit: 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. https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline