Instructor

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Undergraduate Calendar Course Description

SYSC 3101 [0.5 credit]

Programming Languages

Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems).

Precludes additional credit for COMP 3007.

Prerequisite(s): SYSC 2004.

Lectures three hours a week, laboratory three hours alternate weeks.

cuLearn

This course uses cuLearn, Carleton's learning management system. To access your courses on cuLearn, go to https://carleton.ca/culearn.

For help and support, go to carleton.ca/culearnsupport/students. Any unresolved questions can be directed to Computing and Communication Services (CCS) by phone at 613-520-3700 or via email: ccs_service_desk@carleton.ca.

Textbooks


This book is copyrighted, but is provided online under the Creative Commons CC BY-SA 4.0 license: https://mitpress.mit.edu/sicp/full-text/book/book.html


This book is copyrighted, but the authors have provided it online for personal use: https://people.eecs.berkeley.edu/~bh/ss-toc2.html

Software

All the software used in this course is free. Our lab computers run Windows versions of this software. If you want to install this software on your own computer, here's what you need to know:

- Racket (Scheme) 6.11 can be downloaded from: http://racket-lang.org/
SWI-Prolog 7.6.3 can be downloaded from: http://www.swi-prolog.org/

Attendance

Students are expected to attend all lectures and lab periods. The University requires students to have a conflict-free timetable. For more information, see the current Undergraduate Calendar, Academic Regulations of the University, Section 1.2, Course Selection and Registration and Section 1.5, Deregistration.

Requests to accommodate a missed midterm test, lab periods, due dates, etc., because of conflicts with other courses, jobs or vacation plans will not be considered.

Health and Safety

Every student should have a copy of our Health and Safety Manual. A PDF copy of this manual is available online: sce.carleton.ca/courses/health-and-safety.pdf.

Evaluation and Grading Scheme

Students will be evaluated primarily by means of a midterm test and a final exam. In addition, the marks assigned for lab work and assignments will contribute towards the final grade.

To pass the course, students must pass the final examination (50% or better). For students who pass the final exam, a numeric mark out of 100 will be calculated by weighting the course components according to Scheme 1:

<table>
<thead>
<tr>
<th>Component</th>
<th>Scheme 1</th>
<th>Scheme 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab work</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm test</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>70%</td>
<td>60%</td>
</tr>
</tbody>
</table>

This mark will be converted to a letter grade, using the table of percentage equivalents shown in Section 2.3 of the Academic Regulations of the University.

If the grade under Scheme 1 is D+ or lower, this will be your final grade. If your final grade under Scheme 1 is C- or higher, a second numeric mark will be calculated using Scheme 2's component weighting, and this mark will be converted to a second letter grade. Your final grade will be the higher of the two letter grades.

Lab Periods

Attendance at the scheduled laboratory periods is mandatory, and attendance will be taken. During the labs you will work on short programming exercises that are intended to help you understand particular concepts that have been introduced in the lectures. You will normally be required to demonstrate your lab work by the end of the lab period, as indicated in that week's lab "handout".

When you demonstrate your lab work, you may be asked by a TA to provide a detailed
explanation of your solution to one of the exercises (e.g., discuss your design decisions, explain how you would modify your code to reflect different requirements, etc.) Your explanation will contribute to your grade for that week's lab.

During the lab period, your work will be graded satisfactory, marginal, or unsatisfactory.

- **Satisfactory** means that you were present at the lab and made reasonable progress towards completing the exercises. Note that you do not have to finish all the exercises to receive a satisfactory grade.

- **Marginal** means that you made some progress towards completing the exercises, but your solutions were not sufficiently complete to warrant a satisfactory grade. This grade indicates that you may be falling behind and should take steps to remedy this situation.

- **Unsatisfactory** means that you were absent from the lab period, or you attended but made little or no progress towards completing the lab exercises. This indicates that you are likely having difficulty understanding important concepts and should seek help from your instructor as soon as possible. You will also receive unsatisfactory if you do not demonstrate your work or if it is apparent to the TA that you did not do enough of the lab work on your own; that is, you relied on your colleagues to explain the exercises and provide solutions (approach, algorithms or code).

For each satisfactory or marginal grade, you will receive 1/1 towards the lab component of the course. Each unsatisfactory grade will receive 0/1.

Portions of the designs and code from any lab or assignment may be reused and refined in subsequent labs and assignments. Doing the labs and assignments is the best way to learn the course material and prepare for the exams, so students are encouraged not to "write off" any particular lab or assignment just because of its relatively low weight in the overall grading scheme.

If you know in advance that you are unable to attend a lab; for example, because of a job interview or a medical appointment, please email your instructor before the lab, if possible. If you are absent from a lab because of illness or other unexpected reason, you must email your instructor before the start of your next lab period. If possible, we will try to arrange for you to "make up" the missed lab by attending another lab section; otherwise, it will be up to you to do the missed lab work on your own time, and you must make arrangements with your instructor to demonstrate your completed work in a timely manner in order to receive credit for the lab. Students may be asked to provide appropriate documentation to confirm the reason for your absence before requests for accommodation are considered. Under no circumstances will students be allowed to "skip" a scheduled lab so that they can study for a test. You should instead complete the exercises ahead of time and demonstrate your work at the start of the lab; you can then use the remainder of the lab session to study.

Serious long-term illness will be dealt with on an individual basis; in these circumstances, please contact your instructor to discuss appropriate arrangements.

Students are responsible for backing up their lab work before they leave the lab; for example, we recommend that you copy your files to a USB flash drive and to a cloud-based file hosting service; e.g., Google Drive, Dropbox, OneDrive, etc. **Requests to attend an alternate lab**
Students can use the Systems and Computer Engineering undergraduate computer labs whenever
the Mackenzie Building, Minto CASE and the Canal Building are open, except for those times
when labs are reserved for specific courses.

Exams

There will be one closed-book midterm test, which will be held approximately one-half of the
way through the term. The date of the test will be announced in class and posted on cuLearn.
Computers will not be used during the midterm test.

Students who are unable to write the midterm test because of illness or other circumstances
beyond their control (e.g., family or religious obligations) should contact their instructor to make
arrangements to write a deferred test. These requests must be made no later than 3 working days
after the test date, and must fully supported by appropriate documentation (in cases of illness, a
medical certificate is required). For more information, see the Academic Regulations of the
University, Section 2.6, Deferred Term Work.

Requests for accommodation because of poor performance on the midterm test will not be
considered. There will be no “make-up” test. So, if you are ill on the day of the midterm test,
don't write the test and later claim that your performance was impaired because you were unwell.
You are better off to miss the test and request that the weight of your final exam be increased, by
following the procedure outlined earlier.

A closed-book final exam will be held during the University's April examination period.
Computers will not be used during the final exam.

The Academic Regulations of the University permit instructors to specify requirements that must
be satisfied for students to be eligible to write the final examination or, where circumstances
warrant, the deferred final examination.

In this offering of the course, there is no requirement that students must complete a minimum
number of labs and assignments to be eligible to write the final examination.

- All students are eligible to write the final examination, regardless of the marks they
  received during the term.

- Students who miss the final exam may apply to write a deferred examination. The granting
  of a deferred exam requires that the student has performed satisfactorily in the course,
  excluding the final exam. Students who wrote the midterm test (or deferred midterm test)
  will be deemed to have performed satisfactorily in the course (regardless of their marks in
  the lab, assignment and midterm components) when their applications for a deferral of the
  final examination are considered. For more information, see the Academic Regulations of
  the University, Section 2.2, The Course Outline; Section 2.3, Standing in Courses/Grading
  System; and Section 2.5, Deferred Final Examinations.

The final examination is for evaluation purposes only and will not be returned to students. You
will be able to make arrangements with your instructor to see your marked final examination
after the final grades have been made available. Your exam will not be remarked during this
meeting and solutions to the exam questions will not be provided.

**Appeal of Grade**

The processes for dealing with questions or concerns regarding grades assigned during the term
and final grades is described in the *Academic Regulations of the University*, Section 2.7,
*Informal Appeal of Grade* and Section 2.8, *Formal Appeal of Grade*.

**Early Feedback**

See Section 2.2.1 of the *Academic Regulations of the University*.

The weekly lab exercises will normally be graded during the lab period. Outside of the scheduled
labs, you can obtain feedback during office hours or by making an appointment to see your
instructor.

**Intellectual Property**

Classroom teaching and learning activities, including lectures, labs, discussions, presentations,
etc., by both instructors and students, are copy protected and remain the intellectual property of
their respective author(s). All course materials, including course outlines, lecture and lab
materials, tests and exams, and other materials, are also protected by copyright and remain the
intellectual property of their respective author(s).

Students registered in this course may take notes and make copies of course materials for their
own educational use only. Students are not permitted to reproduce or distribute lecture notes and
other course materials publicly for commercial or non-commercial purposes without express
written consent from the copyright holder(s).

**Academic Integrity**

Students should be aware of their obligations with regards to academic integrity. Please review
the information about academic integrity provided at the Office of Student Affairs website:

[carleton.ca/studentaffairs/academic-integrity](http://carleton.ca/studentaffairs/academic-integrity)

This site also contains a link to the complete Academic Integrity Policy that was approved by the
University’s Senate.

**Academic Accommodations**

You may need special arrangements to meet your academic obligations during the term. To
request academic accommodation, the processes are as follows:

**Pregnancy**

Email me with any requests for academic accommodation during the first two weeks of term, or
as soon as possible after the need for accommodation is known to exist. For more details, read
the *Student guide to academic accommodation*, which is available from the Equity Services
website: [carleton.ca/equity](http://carleton.ca/equity)
Religious Obligations

Email me with any requests for academic accommodation during the first two weeks of term, or as soon as possible after the need for accommodation is known to exist, but in no case later than the second-last week of classes. For more details, read the Student guide to academic accommodation, which is available from the Equity Services website: carleton.ca/equity

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) (website: carleton.ca/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. Requests made within two weeks will be reviewed on a case-by-case basis.

After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (carleton.ca/pmc/students/dates-and-deadlines) for the deadline to request accommodations for the formally-scheduled exam.

Edited: January 5, 2018.