

Description

This course is designed to provide a thorough introduction to the foundations and paradigms of programming languages. In particular, we will use the typed functional programming language OCaml to understand **general programming concepts** such as: local and global bindings; higher-order functions; continuations; effects; reasoning about computation; static typing including type inference and subtyping; structuring and maintaining software using modules. We will also discuss some basic concepts regarding the syntax and semantics of a programming language.

Lectures

This course has two sections; each section covers the same material, the same homeworks, and the same exams.

Section A: TuTh Fr 10:35am - 11:25am, **Macdonald Harrington Building G-10 (Prof. B. Pientka)**

Section B: TuTh Fr 12:35pm - 1:25pm, **Strathcona Anatomy & Dentistry 1/12 (F. Ferreira)**

Instructors

- [Prof. Brigitte Pientka](mailto:bpientka@cs.mcgill.ca) (bpientka@cs.mcgill.ca), ENGMC 107N
 - **Office Hours COMP 302:** Thursday: 4:00pm - 5:30pm
 - **General Advising:** Tuesday and Thursday: 11:30am-12:30pm
- [Francisco Ferreira](mailto:fferre8@cs.mcgill.ca) (fferre8@cs.mcgill.ca), Trottier 3090
 - **Office Hours COMP 302:** Tuesday: 3:00pm - 5:00pm,

Teaching Assistants

TAs are holding office Hours are in Trottier 3090.

| Day | Time | Name | Email |
|-----------|------------------|-----------------|----------------------------|
| Monday | 3:00pm - 5:00pm | Kayla Branson | kayla.branson@mail.mcgill |
| Monday | 11:30am - 1:30pm | Jacob Errington | jacob.errington@mail.mcgil |
| Wednesday | 12:00pm - 2:00pm | Jeremie Poisson | jeremie.poisson@mail.mcgi |
| Wednesday | 2:00pm - 4:00pm | Eric Zhang | eric.zhang2@mail.mcgill.c |
| Thursday | 2:00pm - 4:00pm | Tricia Olson | patricia.olson@mail.mcgil |
| Thursday | 4:00pm - 6:00pm | Aliya Hameer | aliya.hameer@mail.mcgill. |
| Friday | 3:00pm - 5:00pm | Matt Grenander | matthew.grenander@mail.mc |

Required Reading

- Course notes (will be available online)

Supplementary Reading

There are many resources available about OCaml. Here are some I highly recommend:

- [OCaml - Everything you ever wanted to know](#)
- [Books on OCaml](#)

The following is a more advanced book regarding the design of programming language which is on reserve in the [Schulich library](#).

- B. C. Pierce: "Types and Programming Languages". MIT Press, 2002.

Evaluation

- 25% homework assignments
- 10% midterm
- 65% final

Assignments

There will be 5 homework assignments. Each assignment is worth 5%. Assignments must be handed in using mycourses; assignments submitted via email will not be accepted.

Submitted programs which do not compile or do not match the given type specification automatically receive a 50% penalty. See the [FAQ page](#) for information on how to compile your programs or contact a TA if you have trouble.

Each student has two late days: you can turn in two assignments one day late, or one assignment two days late. Otherwise, late assignments will be accepted only in extraordinary circumstances, subject to applicable regulations.

Assignments can be done individually or in groups of up to two students. If you choose to do an assignment with another student, **both students have to hand in the assignment on mycourses, but you should clearly indicate the person (first and last name and student ID) you have collaborated in the header of each submitted file.**

We encourage collaboration in teams of 2 to gain a better understanding of the problem, practice explaining solutions, and develop solutions together. The **submitted solutions must represent the own effort of both team members**; both must be able to explain the submitted solutions, if asked; both team members must have contributed equally.

Copying solutions for assignments, midterms or finals from any source, completely or partially is in violation with the [Code of Student Conduct and Disciplinary Procedures](#). Allowing others

to copy your work, deliberately or inadvertently, will not be tolerated. You must protect your own work.

Splitting the problem set in two parts where one team member completes one part and the other independently the second part is not acceptable.

Copyright

Instructor generated course materials (e.g., handouts, notes, summaries, homeworks, exam questions, etc.) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of copyright can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.

Midterm

Tuesday, October 10, 2017 6:05pm - 7:25pm
LEA 26 (cap 184)
LEA 219 (cap 183)
STBIO N2/2 (cap 115)
STBIO S1/3 (cap 140)

Closed book. Cheat sheet (one page) allowed.

We will announce which room each person has to be in later in the semester.

Final

To be announced. Closed book. Cheat sheet (one page) allowed.

Language Rights

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offenses under the Code of Student Conduct and Disciplinary Procedures (see <http://www.mcgill.ca/integrity/> for more information). Most importantly, work submitted for this course must represent your own efforts. Copying assignments or tests from any source, completely or partially, or allowing others to copy your work, will not be tolerated.