# Quick Tips for Computer Science Students

## 1 Advising

- **Liette Oi Chin**
- All students are strongly recommended to meet with Liette at the beginning of each year and in the their final term. This will help avoid any unnecessary complications at the time of graduation. Other academic issues: course selection, failed courses, course permit overrides (prerequisite exemptions...), switching majors, reviewing program requirements etc.
- To schedule an appointment please contact the CS Undergraduate Office at 398-7071 x 00739.

- **Adina Puica**
- Registration problems, course or waitlist is full, need info on NSERC scholarships or TA application…, please contact Adina at 398-7071 Ext. 00739, adina.puica @mcgill.ca.

## 2 1st CS course

- **CS program organization**
- A commont set of **Core** courses (for all majors, minors and joint programs); **Complementary** courses which give flexibility to specialize (graphics, database, AI, networks, ...); **Elective** courses can be taken in almost any department.
- Not all courses are the same difficulty. A higher course number does not necessarily mean more difficulty. Many CS courses involve programming assignments or projects which can be time consuming.

- **U1, No prior background**
- **1st term:** Take COMP 202 along with MATH courses (240, 222, 223, 323 are all possible) and electives (COMP 189 and COMP 230 are among electives).
- **2nd term:** You can take COMP 250 and COMP 206, COMP273 (if confident / want more CS), and MATH + electives.

- **Prior programming -** COMP 250 and COMP 206 in the Fall, along with MATH (240 highly recommended) COMP 251, COMP 273 and COMP 302 in Winter (along with MATH / electives).

## 3 Honours *vs* Major

- **Honours Programs** have a couple of different required courses, a research project (COMP 400) and more CS credits required.
- CGPA must be 3.0 or above at all times.
- You can select an Honours program directly on Minerva.
- Non-Honours students can take honours courses (COMP 400, 252/362) with special permission.

- **Minor Programs**
- You can take almost any minor (see course calendar).
- You can select your minor on-line.
- You should talk to the department giving the minor and complete a course approval form if required.
- Computer Science minor forms are available in the CS Undergraduate Office or in PDF via email. A copy of the minor form must be submitted to the Undergraduate Office.

## 4 Internships

- **IYS** Internship year in Science (8, 12 or 16 months) is an academic program. It will be reflected on your transcript as "Internship Term-Science". If you successfully complete an IYS, your program will be changed to include the "Internship Program" designation.
- **4-month Industrial Practicum** is a two zero-credit course, Pass/Fail course. FSCI 200 (IP1) and FSCI 300 (IP2) will added to your transcript.

- **Deadlines to apply:**
- http://www.mcgill.ca/science/programs/internships#DEADLINES

- **For additional information on internships, contact:**
  **Martine Dolmière**
  martine.dolmiere@mcgill.ca
- *www.mcgill.ca/science/programs/internships*

## 5 Graduation

- All U3 students must apply for graduation in their final term on Minerva and ensure that the requirements for the degree have been, or are being satisfied. **Degree Audits** can be requested via email at liette.chin@mcgill.ca**.** *Please use your official McGill email and include your Student ID number.*

- **Winter** graduation: Courses completed in April for June convocation. **Deadline to apply:** end of February.
- **Summer** graduation: Courses completed at the end of summer for October convocation**. Deadline to apply:** end of March.
- **Fall** graduation: Courses completed in December for June convocation. **Deadline to apply:** end of November.

- *http://www.mcgill.ca/students/graduation/convocation/*

## 6 Grad Letters Career Advice

- **GRADUATION LETTERS**: Students who require proof of graduation letter (before Convocation) can obtain this type of letter on **Minerva** under *Students>Students Records>Proof of Enrolment Letters* - Select *Proof of Expected-to-Graduate Status* letter. These are PDF files that you can download and print, and are considered to be official McGill Documents.

- **CAREER ADVICE:**
- Talk to the Career and Placement Centre (CAPS) or the Engineering Career Centre, which handle CS & SE jobs.
- They organize special events with companies; can give CV & interview advice, etc.
- Tech Fair twice a year (Sept/Jan).
- Go to McGill CaPS - *my*Future (job & internship positions)
- On-campus jobs available through work-study office.

McGill School of Computer Science

# COURSE SELECTION GUIDE FOR U1 STUDENTS

All the Major and Minor programs offered by the **School of Computer Science** involve a common set of core course, so it is a good idea to take these in the U1 year, even if you are not sure which program you want to follow.

**NOTE**: Prerequisites are not optional but are required by the student to satisfy before taking a higher-level course. This is to ensure students are prepared to take on courses at the next level.

Students can take COMP 250 and COMP 206 concurrently; in fact, it is recommended enabling students to proceed to the higher-level courses more rapidly. However if taken separately COMP 250 should be taken first.

- Possible schedule starting from **COMP 202.**
  If you do not have any prior programming experience, you have to start with the course ***COMP 202: Foundations of Programming***, which teaches basics of programming in Java.

| Year | COMP | MATH |
|---|---|---|
| **U1** | 202<br>250, 206 | 222, 240<br>223 |
| **U2** | 251(252), 273, 302<br>Possibly 310<br>303 or 304<br><br>At least one of 330, 350, 360(362) | At least two of 318, 323, 324 and 340<br>*(minimum requirement must include at least one of 323, 340)* |
| **U3** | Possibly 310<br>At least one of 330, 350, 360(362)<br>naining credits from 300-level or above courses. | |
| ***Note:*** **We recommend that MATH 240 be taken simultaneously with COMP 202 or COMP 250.** | | |

- Possible schedule starting from **COMP 250.**
  If you have programmed before, regardless of the language, you should start with ***COMP 250: Introduction to Computer Science***, which teaches programming in Java, algorithms and data structures, introduces concepts in the complexity of algorithms and discusses special topics in different area of computer science, such as artificial intelligence, bioinformatics and cryptography.

| Year | COMP | MATH |
|---|---|---|
| **U1** | 250<br>251(252), 206, 302 | 222, 240<br>223 |
| **U2** | 273<br>310<br>303 or 304<br>At least two of 330, 350, 360(362) | At least one of 318, 323, 324 and 340<br>*(minimum requirement must include at least one of 323, 340)* |
| **U3** | Remaining credits from 300-level or above courses. | At least one of 318, 323, 324 and 340<br>*(minimum requirement must include at least one of 323, 340)* |
| ***Note:*** **We recommend that MATH 240 be taken simultaneously with COMP 202 or COMP 250.** | | |

*2018/L. Chin*

McGill School of Computer Science

# Possible Streams for B.Sc. Major program in Software Engineering

**Possible Streams for three-year B.Sc. Major Program in Software Engineering for students who start with COMP 202.**

| Year | COMP | MATH |
|---|---|---|
| **U1** | 202<br>250, 206 | 222, 240<br>223<br>323 or 324 |
| **U2** | 251, 273, 302, 303<br>310<br>330 or 360<br>One course from Software Engineering Specializations or Application Specialities | |
| **U3** | 361D1/D2 (full year), ECSE 429<br>Remaining (4) courses from **Software Engineering Specializations** (2 courses from 409, 523, 525, 529, 533) and **Application Specialities** (3 courses from 350, 417, 421, 424, 512, 520, 521, 535, 557, 558, ECSE 424) | |
| ***Note:*** **We recommend that MATH 240 be taken simultaneously with COMP 202 or COMP 250.** | | |

**Possible Streams for three-year B.Sc. Major Program in Software Engineering for students with sufficient programming background.**

| Year | COMP | MATH |
|---|---|---|
| **U1** | 250<br>251, 206, 302, 303 | 222, 240<br>223 |
| **U2** | 273<br>310<br>330 or 360<br>361D1/D2 (full year)<br>One course from Software Engineering Specializations or Application Specialities | 323 or 324 |
| **U3** | ECSE 429<br>Remaining (4) courses from **Software Engineering Specializations** (2 courses from 409, 523, 525, 529, 533) and **Application Specialities** (3 courses from 350, 417, 421, 424, 512, 520, 521, 535, 557, 558, ECSE 424) | |
| ***Note:*** **We recommend that MATH 240 be taken simultaneously with COMP 202 or COMP 250.** | | |

# COMP 202/204/208

For student who have little or no programming experience, we offer three introductory courses:

- COMP 202 Foundations of Programming
- COMP 204 Computer Programming for Life Science
- COMP 208 Computer Programming for Physical Science and Engineering

Starting Fall 2019, all three of these courses use the Python language and cover roughly the same core content. The main differences between the courses are as follows.

**COMP 202** can be taken by any student at McGill and only requires that the student have a CEGEP level (or grade 12 level) math background. In particular, students doing a B.Sc. can take it as a Complementary course in the Freshman Science Program.

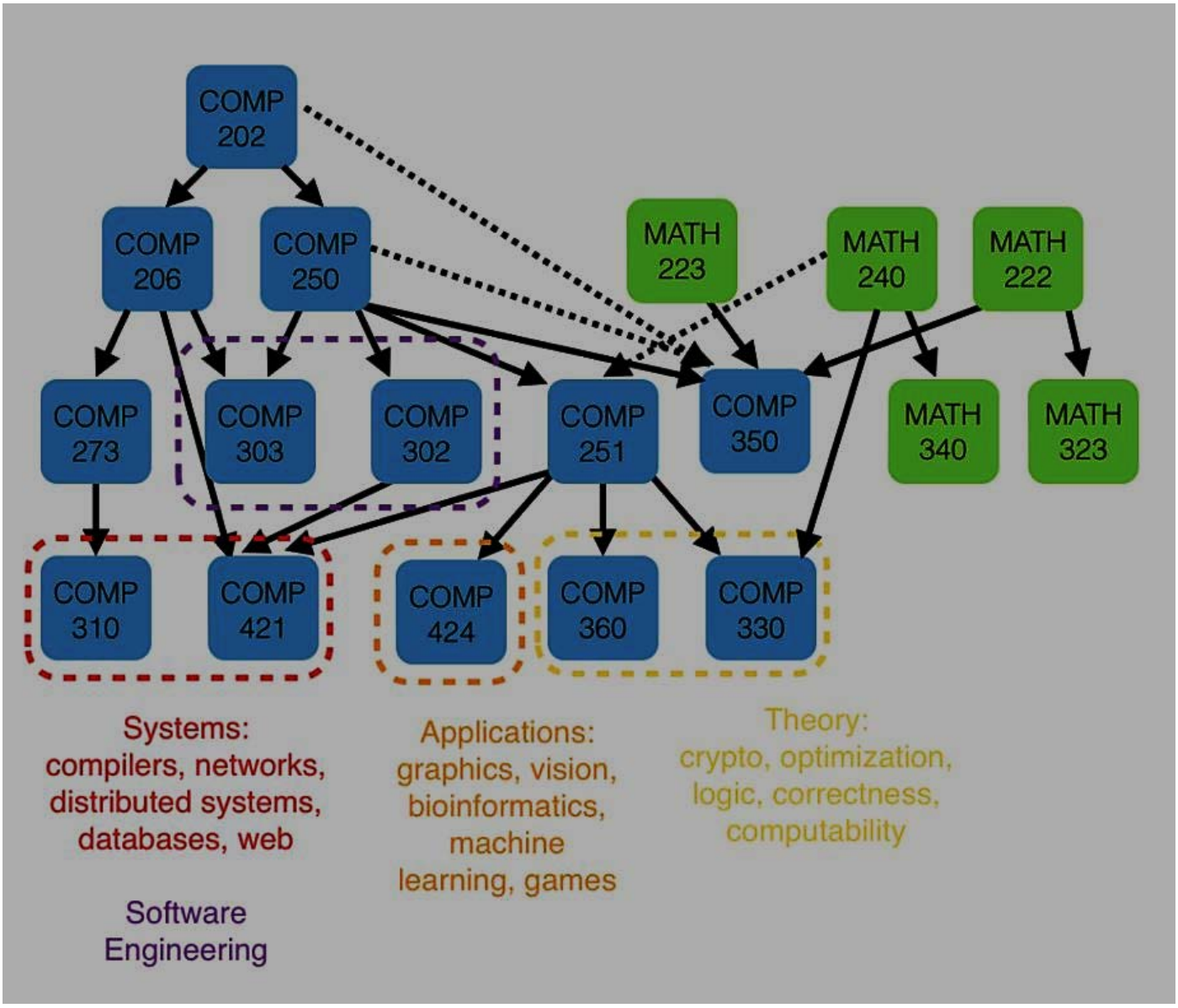
Students who have a background in life sciences can take **COMP 204**. It specifically has BIOL 112 (or CEGEP equivalent) as a prerequisite to ensure students are comfortable with the basics of cell biology and genetics.

**COMP 208** is part of several B.Eng. programs as well as some B.Sc. programs in the physical sciences. Students who have a CEGEP level background in math can take it. It specifically has Calculus 2 (MATH 141) as a prerequisite and it has Linear Algebra and Geometry (MATH 133) as a co-requisite.

NOTE: For any Computer Science program that lists COMP 202 as a prerequisite, students may substitute COMP 204 or COMP 208. All three courses cover the same core topics, and they are equivalent prerequisites for subsequent COMP courses such as COMP 250 and COMP 206.

# Course Prerequisites/Co-requisites

https://mcgill-csus.ca/courses/




**NOTE**: Prerequisites are not optional but are required by the student to satisfy before taking a higher-level course. This is to ensure students are prepared to take on courses at the next level.

# Elective Courses:

Courses that do not count toward the fulfilment of the requirements of your major, minor, etc. Students often select these courses from outside their program of study. Some restrictions may apply, but you have the most choice in selecting elective courses. Some faculties also permit you to take elective courses using the Satisfactory/Unsatisfactory option (refer to the Undergraduate eCalendar > *University Regulations & Resources Section 1 > Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option*). You should consult your faculty section concerning elective courses.
• Often, your department will also provide you with a **recommended list** of courses (or streams), so that you know the typical term-by-term course pattern.

The instructor will report grades in the normal fashion.

- Grades of A through C are converted to "Satisfactory" (S)
- Grades of D, F, and J are converted to "Unsatisfactory" (U)
- The courses taken under the S/U option will be excluded from the grade

## Courses outside the Faculties of Arts and Science

As a student in the Faculty of Science, you should consult the statement of regulations for taking courses outside the Faculties of Arts and of Science (see below). A list of approved/not-approved courses in other faculties is posted on the SOUSA website (www.mcgill.ca/science/student/continuingstudents/bsc/outside). You may take courses on the approved list and may not, under any circumstances, take courses on the not-approved list for credit. Requests for permission to take courses that are not on either list should be addressed to the Director of Advising Services.

**The regulations are as follows:**

- You may take only 6 credits per year, up to 18 credits in all, of courses outside the Faculties of Arts and of Science.
- Courses offered "in the Faculty of Science" or "in the Faculty of Arts" are found in the eCalendar, under *All Courses* when filtered by "Faculty of Science" or by "Faculty of Arts."
- Courses in other faculties that are considered as taught by Science (e.g., BIOT, EXMD, and PHAR) are so designated as offered by the "Faculty of Science" in the eCalendar under *All Courses*.
- Courses in Music are considered as outside the Faculties of Arts and of Science, except MUAR courses, which are considered Arts courses.
- All courses listed in the Religious Studies (RELG) section are considered courses in Arts and Science except for courses restricted to B.Th. or S.T.M. students and courses that require permission from the Chair of the B.Th. Committee.
- Students should consult the list of restricted courses outside of the Faculties of Arts and of Science on the SOUSA website (www.mcgill.ca/science/student).
- You must have the necessary prerequisites and permission of the instructor for such courses.
- Credit for computer and statistics courses offered by faculties other than Arts and Science require the permission of the Director of Advising Services and will be granted only under exceptional circumstances.
- If you use Minerva to register for a course, and it exceeds the specified limitations or it is not approved, the course will be flagged for no credit after the course change period.
- **Credit will not be given for any "how to" courses** offered by other faculties that are intended to provide you with only practical or professional training in specific applied areas. Examples include courses that teach the use of certain computer packages (databases, spreadsheets, etc.) or computer languages (SQL, COBOL, FORTRAN, etc.); machine shop or electronic shop courses; technical drawing courses; and professional practice courses.
- As a student in the **Major in Software Engineering**, you may exceed the 18-credit limit for courses outside the Faculties of Arts and of Science, provided that all such courses are necessary to complete your program of study.

# Courses Taken under the Satisfactory/Unsatisfactory (S/U) Option

The principle of the Satisfactory/Unsatisfactory (S/U) option is to encourage you to take courses outside the area of your specialization with the view of enabling you to acquire knowledge and skills in a variety of fields.

Where permitted by faculty and program regulations, **you may take one elective course per term** to be graded under the Satisfactory/Unsatisfactory (S/U) option, **to a maximum of 10% of your credits taken at McGill** to fulfil the degree requirements.

If you decide to have an elective course graded as Satisfactory/Unsatisfactory (S/U), you must do so before the Course Change deadline on Minerva (see instruction below) as part of the *Student Menu > Registration Menu > Quick Add or Drop Course Sections Menu*. Note: You can only add or remove the S/U grading option until the end of the course change period (Add/Drop deadline). No changes to the grading mode can be made after this deadline. This also applies if you accidentally select the S/U option for a required course. You may be required to complete a substitute course approved by your advisor to fulfill your program requirements. You should verify with your Faculty if in any doubt about your course choice.If the course is a multi-term course, you must select the S/U option by the Course Change deadline of the first part of the course.

The instructor will report grades in the normal fashion:

- Grades of A through C are converted to "Satisfactory" (S),
- Ggrades of D, F, and J are converted to "Unsatisfactory" (U).

The courses taken under the S/U option will be excluded from the grade point average (GPA) calculations, but they will be included in the attempted credits total. Credits for courses with a final grade of S will also be included in the number of credits earned.

**Selecting the S/U Option**

**Step 1:** Go to the "Quick Add or Drop Course Sections" tool under the Registration Menu in Minerva.
**Step 2:** In the "Course Grade Mode" drop down menu for the elective course, select the "Satisfactory/Unsatisfactory" grade mode.
**Step 3:** Click "Submit" at the bottom of the menu to save the change.

**Please note:** You can only add or remove the S/U grading option until the end of the course change period (Add/Drop deadline). No changes to the grading mode can be made after this deadline.

***Note:** To be considered for in-course awards, including Dean's Honours List designations, and/or the renewal of entrance scholarships, you must complete at least 27 graded credits in the regular academic session, not including courses completed under the S/U option.*

***Note:** The S/U option **is not available** via Minerva to Visiting, Exchange, or Quebec Inter-University Transfer Agreement (IUT) students. These students must first contact their home university to ensure that a course taken under the S/U option is acceptable to their home university and that the credits are transferable. After receiving approval from their home university and before McGill's Course Change deadline, they must then consult their McGill faculty Student Affairs Office for approval. **Students in the faculties of Arts or Science:** you will need to go to Service Point (3415 McTavish Street) to make this request. However, it is important that you also see a faculty adviser in Dawson Hall to talk about your options and the effects that your request may have on your studies. For more information, see www.mcgill.ca/students/advising.*

***Note: Special Students** are not eligible to select the S/U option.*

## CS Help Desk

**Location:** McConnell Eng. Bldg, 209N
**Tel #:** 514.398.7087
**Email**: help@cs.mcgill.ca
**Hours:** Mon – Fri: 9:00 – 5:00 (except holidays)

## General Systems Info

http://socsinfo.cs.mcgill.ca

## Computing Facilities @ SOCS

**Trottier Bldg** :
Labs 3110, 3120, and 3090.
Open areas in front of the elevators and north end of the floor.
**McConnell Bldg**:
Research labs on 1st, 2nd, and 3rd floors

Note: All our computers run Ubuntu linux.

## CS Account Creation

Log into any lab computer on the 3rd floor in Trottier Bldg (or browse to http://newuser.cs.mcgill..ca within McGill network) with:
username: newuser
password: newuser (and follow the instructions)

note: CS workstations run Ubuntu linux.

## CS Email Account

SOCS email accounts are available upon request to help@cs.mcgill.ca.

## CS Webmail

http://mail.cs.mcgill.ca

## Default File Quota

5 Tb of file space, and 1Gb of mail quota upon request

## CS Printing

For printing to general CS printers in either the Trottier bldg or McConnell 100N, please obtain print credits from 318.

## UNIX Seminars

Beginner, Intermediate, Advanced sessions are available at the beginning of each semester.
Tutorial times will be posted here: http://socsinfo.cs.mcgill.ca/wiki/Unix_Seminars