



McGill

School of
Computer Science

Computer Science Program Orientation

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CS Program Organization



- A common set of **Core courses** (for all Majors, Minors, and Joint programs), covering basic programming, algorithms, and math.
- A set of **Complementary courses** to choose from, which give flexibility to *specialize*.
 - Graphics, databases, AI, networks, and more!
- Beyond core and complementary courses, **Elective courses** – electives can be taken in (almost) any department.
 - You can take more CS courses, general interest courses, all kinds of things.

First CS Course at McGill

1

- **If you have programmed before**, in any programming language, take COMP 250
- **If you have never programmed before**, take COMP 202 or COMP 204 or COMP 208

NOTE: COMP 202/204/208 cannot be taken for credit after you have taken COMP 250. And it does NOT make sense to take them at the same time (and you cannot get credit for both if you do it).

COMP 202/204/208

Which one is right for me?

- All of them cover roughly the same material, using **Python**.
- **COMP 202**: can be taken by **any student** at McGill
 - Only requires CEGEP level (or grade 12 level) math background
 - Students doing a B.Sc. can take it as a Complementary course in the Freshman Science Program.
- **COMP 204**: can be taken by students with a background in **life sciences**
 - BIOL 112 is a prerequisite, and you have to be comfortable with the basics of cell biology and genetics.
- **COMP 208**: part of several B.Eng. and some B.Sc. programs in the **physical sciences**
 - MATH 141 (Calculus 2) is a prerequisite and MATH 133 (Linear Algebra and Geometry) is a co-requisite.

```
setTimeout(function() {  
  m.closest(".ub_select_el").ub_filter("closevent")  
}, 0), console.log("hidden")  
}).on("shown.bs.select", function() {  
  }, 1), console.log("shown")  
})  
}, 11);  
var m = $.fn.  
f.log_container  
function(f) {
```

What courses should I choose in U1?

***NOTE: unless you have credits from IB/AP/CEGEP, you will start your first year as a U0 doing the 30-credit Freshman Program. Your second year will be U1.**

First, a word about workload



- **1 credit in a course translates to about 3 hours of work per week**
 - 3 credit course = average workload of 9 hours a week (including class time)
 - Taking 5 courses with 3 credits each means 45 hours of work per week!
 - Many students take 4 courses (about 36 hours per week) to have time for extra-curriculars, clubs, etc.
- Not all courses are the same **difficulty** – a higher course number does not necessarily mean the course is more difficult, just that it requires more background
- Many CS courses involve programming assignments or projects, which can be **time consuming**
- **Overall, be aware of your limits and don't overload and overwork yourself in a semester.** You need time to live!

Second, a word about ‘vision’



- If you know what you want to do when you leave McGill, then:
 - Look at the 400-level and 500-level courses you would like to take, and work backwards looking at prerequisite 200-level and 300-level courses
 - You will see a path emerge for the courses you should take to get there!

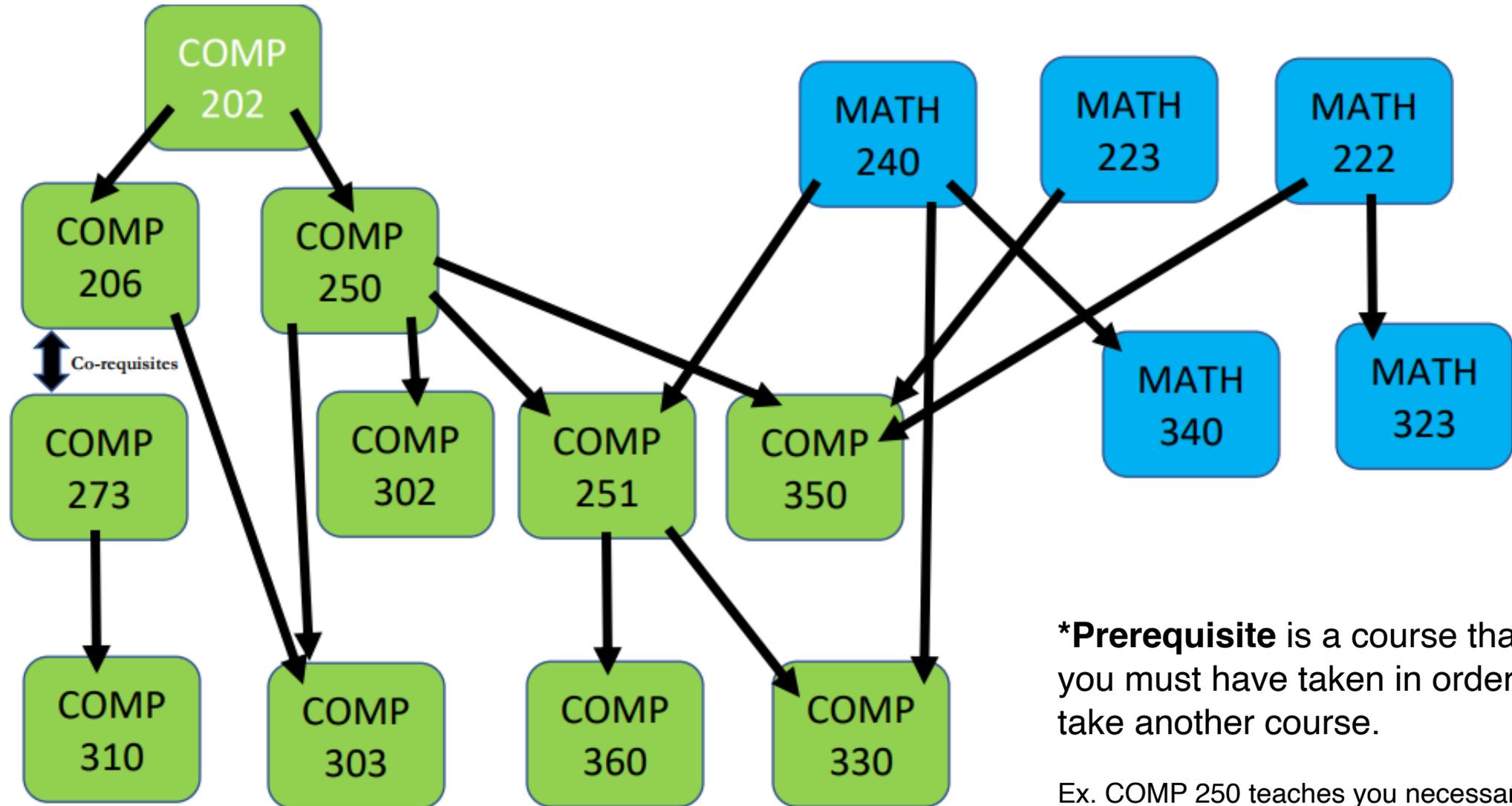
U1: No Prior Programming

- **FALL: COMP 202/ 204/ 208 + Math** courses (like 240, 222, 223, and/or 323) + **electives** (like COMP 330 or classes for a Minor)
 - Take MATH 240 early, it is a prerequisite for core course COMP 251**
- **WINTER: COMP 250** and/or **COMP 206 + Math + electives**

U1: Prior Programming Experience

- FALL: **COMP 250** + **COMP 206** + Math and electives (take **MATH 240** early!)
- WINTER: **COMP 251** + **COMP 273** + more Math and/or electives

Understanding Important Core/Complementary Course Prerequisites*



***Prerequisite** is a course that you must have taken in order to take another course.

Ex. COMP 250 teaches you necessary knowledge for COMP 251, so you have to take COMP 250 before you can take COMP 251.

A person's hands are shown typing on a laptop keyboard. The scene is overlaid with a futuristic digital interface featuring glowing blue icons and circuitry. The icons include a padlock, an envelope with a padlock, a laptop with a padlock, and a document with a padlock. The background is a dark blue with a pattern of glowing dots and lines, suggesting a network or data flow.

CS Programs & Degree Options

Major vs. Honours vs. Liberal Prog.



- **Computer Science or Software Engineering Major** (63 credits)
- **CS Honours** (75 credits)
 - Honours courses have a few different required courses, a research project, and require more CS credits
 - GPA must always be 3.0 or above
- **CS Liberal Program** (45 credits)
 - **Liberal Program in Software Engineering** (49 credits)
- Details of all program requirements are on the [CS website](#), and you can select your program directly on Minerva!

Joint Programs



- **Interested in doing two Majors?** Computer Science offers specific joint programs:
 - **CS & Biology** (74 credits)
 - **Mathematics & CS** (72 credits)
 - **Statistics & CS** (72 credits)
 - **Physics & CS** (66 credits)
- Joint programs require less credits than two separate majors, but still have the same core courses for each major.

CS Minor



- Want a little bit of CS in your degree? Do a **CS Minor (24 credits)**
- Use the **CS Minor Form** to declare and plan your Minor
 - To get the relevant Minor Form for your degree, email Liette Chin (Liette.chin@mcgill.ca) with your student ID number, current degree, and faculty
 - Return the **PDF** with your course selections to Liette Chin and she will approve
 - If you need advising on your Minor, email minor-advisor@cs.mcgill.ca
- You can select your Minor on Minerva, but you **should declare the Minor at the beginning of U2 or earlier**

Major Concentration in CS (Arts)



- **Major Con. in CS** (36 credits) is for students in a **Bachelor of Arts**
 - Has the same core courses as B.Sc. CS Major or CS Liberal, just with less credits
- Doing a Major Concentration in CS (36 credits) + **Supplementary Minor in CS (18 credits)** = *almost equivalent to a CS Major*, and comparable to a CS Liberal Program
- Questions? Check program details on the [CS website](#) or with Liette Chin (liette.chin@mcgill.ca)



Diversify your Degree

Internships



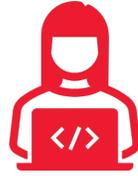
- Internships are **paid positions related to your field of study**
 - Many students choose to do internships to get real-world work experience!
 - They can be done after you finish U1
- **Industrial Practicum** – 4 month internship
- **Internship Year in Science (IYS)** – 8, 12, or 16 months
- More info:
 - For B.Sc. students ifso.science@mcgill.ca
 - For B.A. students <https://www.mcgill.ca/arts-internships/>

Research Opportunities



- **Research courses** are available in the Fall, Winter, or Summer (COMP 396, COMP 400 etc.)
 - Under the supervision of a professor, you work on a project and summarize your findings at the end
 - You receive credits and a mark on your transcript
- **Summer research awards**
 - Similar to research courses, but you get \$ instead of credits
 - NSERC USRA and SURA for Science students, and similar programs in other faculties (ie. ARIA for Arts students)
- **Part-time research for \$, or volunteering** in Fall, Winter, or Summer
 - You may have your own project, or may help other lab members

Career Advice



- Check out the **Career and Placement Centre (CAPS)** for Computer Science and Software Engineering jobs
 - Special events organized with companies, like the **Tech Fair** twice a year (September and January)
 - **CV and interview advice** offered
- Job and internship postings on <https://caps.myfuture.mcgill.ca/>
- On-campus jobs available through the **work-study office**
- Great events by McWics and CSUS!



Important Things to Know

Take Care of Yourself!

Your mental and physical health are more important than school

- The **Student Wellness Hub** is your one-stop-shop for health and wellness services, health promotion activities, and more <https://www.mcgill.ca/wellness-hub/>
- They have extensive program and **support offerings**, Self-Help tools, and an **off-campus Health and Wellness Resource Map**
- Workshops on time management, mindfulness meditation, research skills, effective studying... whatever you need



Questions? Concerns? Ask an Advisor

- Don't be afraid to reach out to an academic advisor if you have any questions about your program requirements or degree progression – they're here to help!
- **Advisors with the Faculty of Science (SOUSA)** – for general questions and about the Freshman Program: <https://www.mcgill.ca/science/undergraduate/advice/sousa>
- **CS Advisors:** <https://www.cs.mcgill.ca/undergrad/program/advising/>
 - Questions about **COMP 202 and COMP 250, or U0 in general**, email David Becerra david.becerra@mcgill.ca
 - Questions about **U1 and U2**, email Joseph Vybihal jvybihal@cs.mcgill.ca
 - For a **Degree Audit** (to see if you are fulfilling your program requirements), contact Liette Chin liette.chin@mcgill.ca

Registering for Courses

- You have until the end of the **Add/Drop period** (second week of classes) to register for whatever courses you want
- If the class you want to register for is full, **sign up for the waitlist** if there is one
 - Minerva will notify you when a spot opens for you in the course. Waitlist how-to here: <https://www.mcgill.ca/students/courses/add/waitlisting>
- Always check **Minerva for the most accurate course information**, like times, locations, prerequisites, open spots.
 - VSB is a good tool for figuring out your overall schedule, but it's not always accurate.
- If you have course registration issues, email Teresa (Tess) Pian teresa.pian@mcgill.ca

Email Etiquette

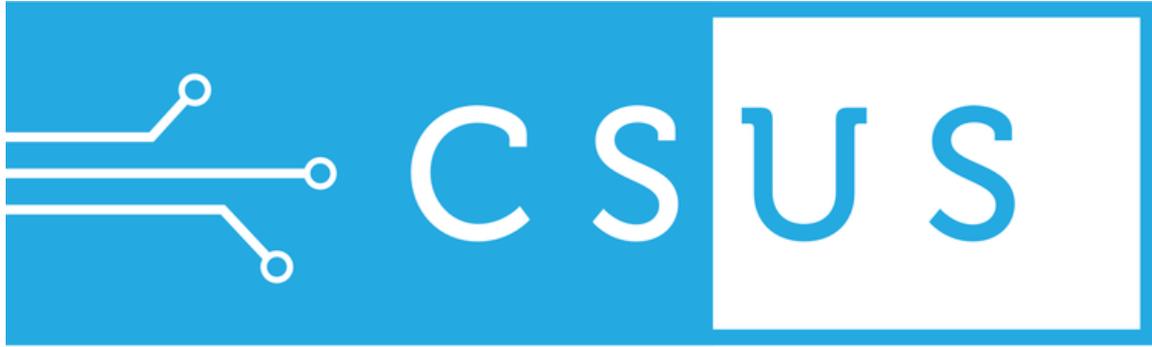


- Don't be afraid to reach out to professors or staff, but do it properly so that you get the best result!
 - Use your **McGill email**
 - Always include your **McGill Student ID Number**
 - **Be polite and professional** – Hello Prof. LastName, Dear Mr./Ms. LastName
 - **Be concise** – ask your questions and be direct about what you need, don't send a super long email with every single detail (if we need to know more, we will ask!)
 - When emailing about a specific course, put that course code in the subject line.
 - **Be patient** – do not send multiple emails or re-send emails, we respond as soon as we can! There are over 4,000 students taking CS courses, that's a lot of emails to answer.
 - Follow-up only if you don't receive a response after over a week.
- More tips: https://www.mcgill.ca/onboardingcentral/files/onboardingcentral/student_email_etiquette_tips.pdf

Library Resources



- Course reserves = your textbooks! mcgill.on.worldcat.org/courseReserves/landing
- **You can access the whole library catalog online at www.mcgill.ca/library/**
 - Schulich Library of Physical Sciences is closed, but you can find all the same resources at the Humanities and Social Sciences Library
- Not just books! The McGill Library has many useful resources for you
 - Printing
 - Workshops (on research skills, citations, writing papers etc...)
 - Book a study room or a space to Zoom
- Jennifer Zhao (Jennifer.zhao@mcgill.ca) is the Library Liaison for CS and ECE. She can help you:
 - Use the library's collections, services, and spaces
 - Search for research literature
 - Manage and cite references
 - Manage research data
 - And more!
- Find all Library service and open hours here: <https://mcgill.ca/x/ovn>



Computer Science Undergraduate Society

For students & by students!

<https://mcgill-csus.ca/>

They have amazing information and resources for:

- Help desk & free peer tutoring
- Mental health support and resources
- Sustainability
- Equity
- Research opportunities
- Internships
- Industry mentorship

CSUS is a great way to get involved and meet other CS students

- First year council positions!
- Weekly study nights
- Hackathons
- Connections to other CS student clubs!