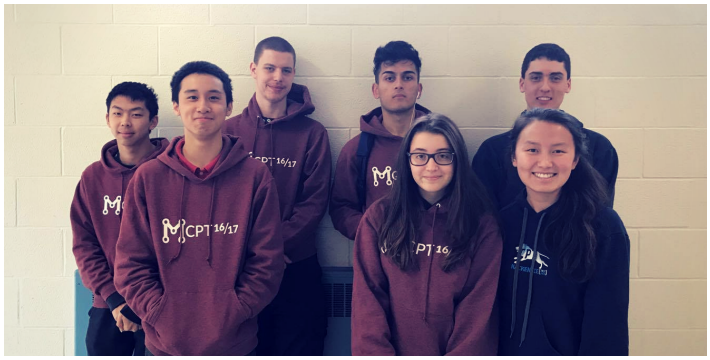
MCPT

Mackenzie's Computer Programming Team (MCPT) is a group of dedicated students who aim to further their knowledge of computer science and competitive programming. The team consists of 6 branches — junior, game development, intermediate, advanced, girls, and junior girls — with each branch meeting once a week to learn and practice. MCPT students are interested in learning beyond their course material, building their critical thinking skills, and being persistent towards improvement. These students compete in various special events, as well as 5 ranked on-site programming contests each year.

MCPT LEADERSHIP



LEFT (VICE-PRESIDENTS): JEFFREY G., LEV R., RICHARD Y.

RIGHT (PRESIDENTS): ARSH R., VINCENT M., SAMANTHA U., SARAH G.

STAFF SUPERVISOR: MS. KRASTEVA

CONTESTS

CPT offers future programmers an opportunity to enrich their knowledge through lessons and weekly meetings. We also provide individuals with a way to challenge themselves beyond the regular school curriculum. This is done through the wide variety of programming contests that are offered:

- **JDCC (Janice Dyke Computing Competition)**
  MCPT's very-own programming competition. There are 5 of these contests held annually and teams with the best scores are chosen to represent the school for other prestigious programming contests.
- **CCC (Canadian Computing Competition)**
  All Mackenzie students may take the Waterloo contest at the Junior or Senior level. High scorers may be invited to the CCO (Canadian Computing Olympiad)
- **ECOO's programming contest**
  Top scorers on the JDCC are chosen to represent Mackenzie at the Education Computing Organization of Ontario's annual computing competition.

MCPT DIVISIONS

MCPT is split into 6 divisions. Students at Mackenzie may choose which branch best fits their interests and their time commitments.

1) Girls Division

The Girls division caters to female students of varying skill levels in order to build their skills in Java. Students begin by learning about applying commands taught in class to competitive programming and eventually progress to more complex topics.

2) Junior Girls Division

In the Girls Junior division, students can build on the lessons taught within their classes or get a head start. The curriculum covers concepts from the ICS2O course, with an emphasis on critical thinking, and problem solving

3) Junior Division

The Junior division gives beginner programmers the extra help they need to master the basics of programming. As the year progresses, more difficult concepts are explored and more competitive programming is taught.

4) Intermediate Division

The Intermediate division helps students with at least 1 year of experience transition from programming class to competitive programming by extending course topics and covering a variety of new topics.

5) Advanced Division

This division is designed for experienced and competitive programmers with 2+ years of experience.Topics covered range from breadth/depth-first searches to many types of dynamic programming. The primary focus for this branch is to train for contests and increase programming skills.

6) Game Development Division

This division delivers special lessons through the Junior division towards the end of each semester.

MCPT WEBSITE AND JUDGE (MCPT.CA)

The CPT website is a great way to stay up-to-date with the club's activity. The website has a calendar that keeps track of weekly meetings, competitions, and other events. From the website, one can also register for upcoming competitions. Additionally, all the lessons from the weekly programming team meetings can be found online, in case you missed them, or simply want to go back and review. CPT contact information can also be found on the website.

In addition to a website, students at CPT have come together and created their own virtual judge to use in online computer programming contests. By having our own judge, CPT is able to host its own in-house contests, providing students with a greater selection of challenges to choose from.

CS COURSES FOR MACS STUDENTS

Below is a map of the course pathways in Computer Science that a MaCS student can take.

All Grade 9 MaCS students must take ICS 2O3 in grade 9 meaning that in grade 10, they have the option to continue with ICS 3U3. If they choose to take ICS 3U3 in grade 10, they may also take either ICS 4U3 OR ICS 4U0. This is "fast-tracking," meaning students will take the Grade 11 course in semester 1 of their grade 10 year, then take the grade 12 course in the second semester of the same year. Many MaCS students choose to "fastrack" resulting in them completing all high school Computer Science courses by the end of their grade 10 year. Many MaCS students also choose the AP route. MaCS students have done very well in the AP course and have achieved high scores of 4 and 5 on the AP standardized exam. (Highest score is a 5, most universities offer credits for students who have achieved a score of 4/5).
*Please Note: ICS 2O3 and ICS 3U3 offer both co-ed and girls-only classes.

In ICS2O3, students are introduced to computer programming and will use the programming language Turing, a great language for beginners that leads well into Java, the language used in ICS 3U3, ICS 4U3, and ICS 4U0. Students will learn about fundamental programming concepts and will create simple programs with their knowledge. Computer hardware, software selection, operating system functions, networking, safe computing practises, ethical issues related to computer use, and many more subjects will also be taught.

****Mandatory in Grade 9 for MaCS****
GRADE 10 MACS
Introduction to Computer Studies
ICS2O3/F

(Elective course for Grade 10 MaCS)
GRADE 11 MACS
Introduction to Computer Studies
ICS3U3/F

In ICS 3U3, students will build upon their concepts from grade 10 and apply them to the programming language Java. Students will learn Java concepts and solve/create problems both in teams and individually. They will also investigate environmental and ergonomic issues as well as CS research and future fields.

(Elective course for Grade 10 MaCS)
GRADE 12 MACS
Computer Science
ICS4U3

(Elective course for Grade 10 MaCS)
GRADE 12 Advanced Placement
AP Computer Science A
ICS4U0

In ICS 4U3/0, students will continue to develop their skills in Java. Students will be creating complex and fully documented programs according to industry standards. Students will form teams and manage a large software development project from the planning stage to project review. Algorithms will be investigated as well as ethical issues of computing. Environmental issues, emerging technologies, CS research and career fields will be further explored. The AP course will also thoroughly prepare students for the standardized exam in May. Students will learn all required concepts of the AP curriculum and also complete labs provided by the CollegeBoard.