**COMPUTER SCIENCE 40S**
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**Course Description**



Grade 12

This course is designed for students who enjoyed CS30S programming and who will potentially continue to study Computer Science after high school. In this course you will learn to solve problems, accomplish tasks, and express creativity, both individually and collaboratively. Since programming languages and techniques continue to evolve rapidly, you will need to adapt changes and learn new information. This will require you to be an independent learner. However, teamwork and problem solving are also important skills in computer programming. Therefore, there will be opportunities to work collaboratively to solve various problems. The course will end with students working on a major project. Students will work on more practical and more complexity programming projects in this level.

## **Topics**

Throughout the course we will be learning programming techniques and the syntax of one or more programming languages. The learning will be facilitated through various sources such as Khan Academy, the Hour of Code, Scratch, Gamemaker, Alice, etc.

* Strategies for independent learning, communication, and teamwork
* History of computer programming
* Impact of information and communication technologies (ICT) on society and the environment
* Ethics
* Exploring careers in ICT
* Programming standards and conventions
* Problem solving
* Programming concepts

– Documentation

– Variables and data types

– Input/output

– Debugging

– Branching (if/then/else), nested branching

– Looping (definite and indefinite)

– Using functions/methods

– Built-in graphic functions

– Writing subprograms without parameters

– Writing Classes and Creating Objects

**Expectations**

My expectations for this course are simple – always do your best! Effort and determination will ensure success. Due to the nature of the work, independent work is crucial to success. Students are required to take part in the course, cooperate with classmates, exhibit a positive attitude, follow the basic expectations of the teacher and behave in an appropriate manner.

**Be on time and be prepared**. Bring all of the necessary materials to class with you. Earphones or headphones are required for each class as you will need to listen to videos on some assigned websites. Please keep a set in your locker so that you will not forget these.

**Food and drinks** are not permitted in the computer lab at any time.

**Be responsible**. If you have to miss a class, you are required to find out what lesson notes/handouts you need. If you are absent the day of a test, you will write the test the first day you return.

 **Teaching Methods**

* Presentation lectures
* Collaborative class discussions
* Demonstrations (hands-on)
* Programming examples
* Skill assignments
* Creative Projects
* Fun activities
* Review quizzes and tests
* Final Project

**Evaluation**

The following reflects the breakdown of the evaluation process for Computer Science 40S:

Knowledge & Understanding 40%

Application 40%

Communication 10%

Inquiry/Thinking 10%

Students who miss deadlines will receive a score of M (missing) until such a time that the missing work is submitted and graded (with possible late penalty). Work that is deemed exceptionally late may not be accepted at all. See “Expectations” above for missing a test.

### Academic Integrity

Guidelines for academic integrity are outlined in your agenda book. Please read this information carefully. In particular, take note of the following acts of academic dishonesty:

* Copying another student’s work for any required assignment.
* Providing another student with an assignment for the purpose of plagiarism.
* Sharing information when assignments are to be done individually.

Computer Rules

Computer rules at MBCI are strictly enforced. Misuse or abuse of the Internet will result in consequences include: suspension, loss of credit, expulsion, and in some cases police agencies may also intercede. Every student has an individual ID and password. DO NOT SHARE this password with anyone. ALL computer activities are monitored, logged and traceable. All users are held accountable for their actions. There is no such thing as anonymous when using a computer here.

Cell phone Rules

Please keep your phone turned off and out of sight AT ALL TIMES unless you have permission from your teacher to use it for research. Students who choose to use their phone in class will be asked to place it in the phone bin at the front of the room. If you can’t resist the urge to use your phone in class you will be asked to drop off your phone in the phone bin EVERY CLASS so that you may participate in class in a productive way. Of course you can always choose to drop your phone off in the bin proactively.