



Course Description/Rationale/Overview:

This course will introduce students to the essentials of computer programming. There are individual and group components in the course requiring significant initiative on the part of students.

Topics will include computer hardware and systems, the history of computers, problem solving and program planning, basic-level programming using the Turing language, an introduction to spreadsheet and database applications, binary numbers and computer codes, logic gates and circuits, and finally, applying problem solving and programming skills to programmable logic controllers.

Students completing TIK20 will be prepared to take grade 11 computer programming, ICS3M.

Class Requirements:

Students are expected to come to each class with a 3-ring notebook, extra blank paper, writing utensils and two floppy disks for personal storage and backup.

The textbook "Turing Tutorial Guide" will be provided. The replacement cost for this text is \$40.00 and must be paid if the text is lost for any reason. Other textbooks will be provided when needed and are for in-class use only.

Course Requirements/Department Policies

Late Assignments

Late assignments must be accompanied with a note signed by a parent or guardian stating the reason for tardiness of the assignment. The date must list the due date of the assignment and the actual date of submission.

If an assignment is handed in after it has been taken up or handed back, the student may not receive a mark for it.

Missed Tests

It is the student's responsibility to make arrangements, ahead of time, for any tests/quizzes that are missed. If a student misses a test/quiz for an unforeseen reason such as illness, the student must bring a note signed by a parent or guardian and be prepared to write the test/quiz immediately upon return to school. *Once a test or quiz has been taken up or handed back the student may not receive a mark for it.*

Assessment Strategies

Students will be assessed and evaluated using a variety of strategies including tests, quizzes, (programming) lab reports, skills evaluations, performance tasks, essays and presentations. Assessment and evaluation will be based on the provincial curriculum expectations and the achievement chart outlined in ministry curriculum documents.

Achievement Categories and Weighting

Knowledge/Understanding	20%
Thinking/Inquiry	20%
Communications	15%
Applications	15%
Summative Evaluation	30%

Curriculum strands:

- Computer hardware
- Integrated circuits
- Computer programming
- Computer interfacing
- Robotics

Learning Skills:

- Works Independently
- Team work
- Organization
- Work Habits
- Initiative

Evaluation & Final Mark

Each student's final mark will be in the form of a percentage grade based upon Ontario Ministry of Education expectations and their achievement in the four achievement categories. The year's work will make up 70% of the final mark and the final summative evaluation will make up the remaining 30%.

The final summative evaluation in grade 10 computer science will consist of a group of projects / tests encompassing more than one strand of the curriculum. This evaluation will be done in the months of May and June.

If a student misses any part of the final summative evaluation, that student must bring in a medical certificate explaining their absence in order to avoid a mark of zero.

All information above is tentative and may change as the department sees fit.



Course Outline TIK201/O8

Textbook

There is no textbook for this course. The Computer Department has several resource books available for the student to use during class time. Students are expected and responsible to take their own notes during class lectures.

Course Content: (Topics may not be presented in order shown.)

Problem Solving

5 Step Model

Software and Hardware

Components of a Computer

Types of Software

Turing (additional topics may be added)

Output - unformatted & formatted

Variables & Constants - Types

Input

Mathematical Functions - standard math operations, MOD, DIV, exponents

Decisions - IF & Relational Operators

Repetition - FOR, REPEAT UNTIL & DO... WHILE

Nested Loops

Simple error trapping - enter the correct input type

Digital Circuits and Number Systems

Gates: And, Or, Not, Nand, Nor, Xnor

Number Systems: Binary and Hexidecimal

Robotics

Lego MindStorms and Robolab