| **HILLCREST HIGH SCHOOL**  **Science Department** | Hillcrest_Logo.gif |
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**COURSE NAME:** Computer Science, Grade 11, University Preparation

**COURSE CODE: ICS3U Prerequisite:** None

**COURSE OVERVIEW:** This course introduces students to computer science. Students will design software independently and as part of a team, using industry-standard programming tools and applying the software development life-cycle model. They will also write and use subprograms within computer programs. Students will develop creative solutions for various types of problems as their understanding of the computing environment grows. They will also explore environmental and ergonomic issues, emerging research in computer science, and global career trends in computer-related fields.

**Course Strands & Overall Expectations:**

| 1. **Programming Concepts and Skills** | |
| --- | --- |
| **A1** | Demonstrate the ability to use different data types, including one-dimensional arrays, in computer programs. |
| **A2** | Demonstrate the ability to use control structures and simple algorithms in computer programs |
| **A3** | Demonstrate the ability to use subprograms within computer programs. |
| **A4** | Use proper code maintenance techniques and conventions when creating computer programs. |
| **B.**  **Software Development** | |
| **B1** | Use a variety of problem-solving strategies to solve different types of problems independently and as part of a team. |
| **B2** | Design software solutions to meet a variety of challenges |
| **B3** | Design algorithms according to specifications. |
| **B4** | Apply a software development life-cycle model to a software development project. |
| **C. Computer Environments and Systems** | |
| **C1** | Relate the specifications of computer components to user requirements |
| **C2** | Use appropriate file maintenance practices to organize and safeguard data |
| **C3** | Demonstrate an understanding of the software development process. |

| **D. Topics in Computer Science** | |
| --- | --- |
| **D1** | Describe policies on computer use that promote environmental stewardship and sustainability |
| **D2** | Demonstrate an understanding of emerging areas of computer science research |
| **D3** | Describe postsecondary education and career prospects related to computer studies. |

**ASSESSMENT AND EVALUATION:**

Assessment and evaluation of student work will take into consideration the student’s level of achievement in meeting all the overall expectations outlined in the Ontario Secondary Curriculum. As well, achievement and evaluation follows the four categories of knowledge and skills in reading and writing – Knowledge/Understanding,Thinking/Inquiry, Communication, and Application. These categories encompass all the curriculum expectations in the course.

Teachers use a variety of assessment strategies to collect information about student learning. These strategies include observation, student-teacher conversations, and student products. Teachers can gather information about learning by: designing tasks that provide students with a variety of ways to demonstrate their learning; observing students as they perform tasks; posing questions to help students make their thinking explicit; create classroom and small-group conversations that encourage students to say what they are thinking. Teachers then use the information gathered to adjust instruction and provide feedback. (Growing Success 34)

Evidence of student achievement for evaluation is collected over time from three different sources – observations, conversations, and student products. “Student products” may be in the form of tests or exams and/or assignments for evaluation. Assignments for evaluation may include rich performance tasks, demonstrations, projects, portfolios, conferences and/or essays. (Growing Success 39)

The following conversion chart shows how the four levels of achievement are aligned to percentage marks:

| **Achievement**  **Level** | 4+ | 4 | 4- | 3+ | 3 | 3- | 2+ | 2 | 2- | 1+ | 1 | 1- |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Percentage Mark Range** | 95-100 | 87-94 | 80-86 | 77-79 | 73-76 | 70-72 | 67-69 | 63–66 | 60-62 | 57-59 | 53-56 | 50–52 |

Below Level 1 (R) signifies additional learning is required to demonstrate competency in the expectation being evaluated.

The term mark will be based on evaluations conducted throughout the course and should reflect the student’s most consistent level of achievement of overall expectations. The summative mark addresses the full range of overall expectations and is administered towards the end of the course.

**Text Book**

There is no textbook for this course.

**ACADEMIC INTEGRITY**

Work that is plagiarized or is not the student’s original material will not be included among the evaluation evidence that is considered for grading purposes.