

COURSE INFORMATION SHEET

DATE: 20-
SECONDARY SCHOOL: *BISHOP ALLEN ACADEMY*
DEPARTMENT HEAD:
TEACHER:
DEPARTMENT: *Computer Studies / Business*



CURRICULUM POLICY DOCUMENT		Ontario Curriculum, Computer Studies, Grades 10 to 12 - Revised	
COURSE TITLE	Computer and Information Science	COURSE CODE	ICS3U1
PRE-REQUISITE	None	GRADE & TYPE	11 University/College
FULL YEAR / SEMESTER	Semester	CREDIT VALUE	1

COURSE DESCRIPTION
<p>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.</p>

LISTED IN ORDER OF INSTRUCTIONAL DELIVERY		
STRAND / UNIT TITLES	HOURS	OVERALL EXPECTATIONS / UNIT DESCRIPTION
<p>Computer Systems And Hardware</p>	15	<p>This unit focuses on basic computer and information science skills. Students identify computing options available, determine various computer uses and relate them to the necessary hardware components.</p> <ul style="list-style-type: none"> • relate the specifications of the internal components of a computer (<i>e.g., CPU, RAM, ROM, cache, hard drive, motherboard, power supply, video card, sound card</i>) to user requirements; • relate computer specifications (<i>e.g., processor type, bus speed, storage capacity, amount of memory</i>) to user requirements, using correct terminology; • relate the specifications of common computer peripheral devices (<i>e.g., printer, monitor, scanner, keyboard, mouse, speakers, USB flash drive</i>) to user requirements; • identify the computer components involved in executing programming operations (<i>e.g., assignment statements store a value in RAM, arithmetic operations are performed in the CPU</i>). • Build a virtual dream computer by researching the necessary components and explaining their use in the system.
<p>Software Operating Systems and Applications</p>	10	<ul style="list-style-type: none"> • Understand the different platforms and operating systems available for computer CPUs • explain the difference between source code and machine code; • explain the difference between an interpreter and a compiler; • explain the difference between the functions of applications, programming languages, and operating systems.

<p style="text-align: center;">Ethics Stewardship and Sustainability</p>	<p>15</p>	<p>This unit focuses on Computer Ethics. Students examine issues surrounding privacy, security, and the ethical use of information and technology:</p> <ul style="list-style-type: none"> • describe policies on computer use that promote environmental stewardship and sustainability; • demonstrate an understanding of emerging areas of technology and computer science, and explore “policy vacuums” that have been created.; • copyright • privacy <p>identity theft, computer crime, fraud</p>
<p style="text-align: center;">Beginning to Program Using Visual Basic Express</p>	<p>10</p>	<p>This unit focuses on basic programming structures. Students write simple programs, using variable assignment, repetition, and decision structures, and develop effective testing, validating, and documenting skills. They also explore roles of effective communicators and reflective thinkers when following a problem-solving model (e.g., user inputs a series of marks, each value is validated, the average is calculated, and a grade is assigned).</p>
<p style="text-align: center;">Code Maintenance</p>	<p>15</p>	<ul style="list-style-type: none"> • demonstrate the ability to identify and correct syntax, logic, and run-time errors in computer programs; • use workplace and professional conventions (<i>e.g., naming, indenting, commenting</i>) correctly to write programs and internal documentation; • demonstrate the ability to interpret error messages displayed by programming tools (<i>e.g., compiler, debugging tool</i>), at different times during the software development process (<i>e.g., writing, compilation, testing</i>); • use a tracing technique to understand program flow and to identify and correct logic and run-time errors in computer programs; • demonstrate the ability to validate a program using a full range of test cases.
<p style="text-align: center;">Data Types and Expressions</p>	<p>15</p>	<p>By the end of this course, students will:</p> <ul style="list-style-type: none"> • use constants and variables, including integers, floating points, strings, and Boolean values, correctly in computer programs; • demonstrate an understanding of how a computer uses various systems (<i>e.g., binary, hexadecimal, ASCII, Unicode</i>) to internally represent data and store information; • use assignment statements correctly with both arithmetic and string expressions in computer programs; • demonstrate the ability to use Boolean operators (<i>e.g., AND, OR, NOT</i>), comparison operators (i.e., equal to, not equal to, greater than, less than, greater than or equal to, less than or equal to), arithmetic operators (<i>e.g., addition, subtraction, multiplication, division, exponentiation, parentheses</i>), and order of operations correctly in computer programs; • describe the structure of one-dimensional arrays and related concepts, including elements, indexes, and bounds; • write programs that declare, initialize, modify, and access one-dimensional arrays.

Control Structures and Simple Algorithms	10	<ul style="list-style-type: none"> • write programs that incorporate user input, processing, and screen output; • use sequence, selection, and repetition control structures to create programming solutions; • write algorithms with nested structures (<i>e.g., to count elements in an array, calculate a total, find highest or lowest value, or perform a linear search</i>).
Putting It All Together	20	<p>This unit is the culminating challenge for applying knowledge and skills in an integrated and meaningful task. Students follow the software design life cycle to find the best solution to a challenge (e.g., a movie reservation system), demonstrating the mastery of course expectations. The teacher should choose the challenge with students to allow students to express their creativity while at the same time demonstrating knowledge and skills. Students examine the effect and influence on society of emergent technologies.</p>

STUDENT EVALUATION CRITERIA				
TERM – 70%		FINAL – 30%		FINAL REPORT CARD GRADE CALCULATION – 100%
10 ≤ RELATIVE EMPHASIS / WEIGHTING ≤ 40		RELATIVE EMPHASIS / WEIGHTING		TERM TOTAL + FINAL TOTAL = REPORT CARD MARK
KNOWLEDGE/UNDERSTANDING	20	Final Exam	15	
INQUIRY/THINKING	15	Group Study Project	15	
COMMUNICATION	15			
APPLICATION	20			
TERM TOTAL	70	FINAL TOTAL	30	

ASSESSMENT FORMAT USED ✓					
WRITTEN		PERFORMANCE		OTHER	
Multiple Choice Tests		Group Work		Teacher Observation	
Short Answer		Programming Project		Lab Assignments	
“Ideal Computer” Report		Programming Assignments		Case Studies	
3 and 5 paragraph essay responses					

RESOURCES	
REFERENCE TEXTBOOK	1. Computer Concepts (4 th Edition)
	2. Computers and Problem Solving
	3. An Intro to Programming Using Visual Basic
	4. Using Visual Basic (2 nd Edition)
JOURNALS	Selected articles from Journals, Newspapers and Magazines
COMPUTER USE	Selected software and Programming Language (Visual Basic)
COURSE RELATED WEBSITES	Selected use only – site lists will be provided throughout course

CLASSROOM POLICIES & PROCEDURES

Late Assignments	Refer to BA Late Policy
Plagiarism	See “School Code of Behaviour”
Homework	Homework is assigned to review and complete class work: average 2 hours/week. Major Assignments when assigned will substitute for regular homework.
Teacher Contact	luigi.calomeni@tcdsb.org
Extra Help	A buddy-system is established for peer assistance. Pre-school assistance is provided each morning ½ hour before class.
MISSED TESTS	Upon proper proof of legitimate absence, the teacher will either provide a make-up test, or use the final exam mark in place of the missed tests. Failure to write a make-up test within a reasonable time of when it is offered results in an evaluation of 0.

LEARNING SKILLS CRITERIA	
IN EACH REPORTING PERIOD, REPORT ON THE QUALITY OF THE LEARNING SKILLS DEMONSTRATED BY THE STUDENT IN EACH OF THE CATEGORIES IDENTIFIED ON THE REPORT CARD USING THE FOLLOWING LETTER SYMBOLS.	
E–EXCELLENT	G–GOOD
S–SATISFACTORY	N–NEEDS IMPROVEMENT
SKILL: WORKS INDEPENDENTLY	
INDICATORS:	
<ul style="list-style-type: none"> • accomplishes tasks independently • accepts responsibility for completing tasks • follows instructions • regularly completes assignments on time and with care • demonstrates self-direction in learning • independently selects, evaluates, and uses appropriate learning materials, resources, and activities 	<ul style="list-style-type: none"> • demonstrates persistence in bringing tasks to completion • uses time effectively • uses prior knowledge and experience to solve problems and make decisions • reflects on learning experiences
SKILL: ORGANIZATION	
INDICATORS:	
<ul style="list-style-type: none"> • organizes work when faced with a number of tasks • devises and follows a coherent plan to complete a task • follows specific steps to reach goals or to make improvements • revises steps and strategies when necessary to achieve a goal 	<ul style="list-style-type: none"> • manages and uses time effectively and creatively • demonstrates ability to organize and manage information • follows an effective process for inquiry and research • uses appropriate information technologies to organize information and tasks
SKILL: INITIATIVE	
INDICATORS:	
<ul style="list-style-type: none"> • seeks out new opportunities for learning • responds to challenges and takes risks • demonstrates interest and curiosity about concepts, objects, events, and resources • seeks necessary and additional information in print, electronic, and media resources • identifies problems to solve, conducts investigations, and generates questions for further inquiry • requires little prompting to complete a task, displaying self-motivation and self-direction 	<ul style="list-style-type: none"> • approaches new learning situations with confidence and a positive attitude • develops original ideas and devises innovative procedures • attempts a variety of learning activities • seeks assistance when needed • uses information technologies in creative ways to improve learning for self or others
SKILL: TEAMWORK	
INDICATORS:	
<ul style="list-style-type: none"> • works willingly and cooperatively with others • shares resources, materials, and equipment with others • responds and is sensitive to the needs and welfare of others • solves problems collaboratively • accepts various roles, including leadership roles • takes responsibility for his or her own share of the work to be done • works to help achieve the goals of the group or the class • helps to motivate others, encouraging them to participate • contributes information and ideas to solve problems and make decisions 	<ul style="list-style-type: none"> • questions the ideas of the group to seek clarification, test thinking, or reach agreement • shows respect for the ideas and opinions of others in the group or class • listens attentively, without interrupting • in discussions, paraphrases points of view and asks questions to clarify meaning and promote understanding • recognizes the contribution of group members by means of encouragement, support, or praise • seeks consensus and negotiates agreement before making decisions
SKILL: WORK HABITS/HOMEWORK	
INDICATORS:	
<ul style="list-style-type: none"> • completes homework on time and with care • puts forth consistent effort • follows directions • shows attention to detail • uses materials and equipment effectively 	<ul style="list-style-type: none"> • begins work promptly and uses time effectively • perseveres with complex projects that require sustained effort • applies effective study practices

NOTE: The above chart is a reformatting of the skills identified in the Ministry of Education’s *Guide to the Provincial Report Card, Grades 9 – 12 : Appendix C: pages 27 to 29*.