



# GEORGE S. HENRY ACADEMY COURSE OUTLINE



## Computer Engineering Grade 11

<b>COURSE CODE</b>	TEJ3M01	<b>GRADE</b>	11
<b>TEACHER(S)</b>	Ms Hakimi	<b>CREDIT VALUE</b>	1
<b>DEPARTMENT</b>	Computer Studies	<b>PREREQUISITE</b>	None

This course examines computer systems and control of external devices. Students will assemble computers and small networks by installing and configuring appropriate hardware and software. Students will develop knowledge and skills in electronics, robotics, programming, and networks, and will build systems that use computer programs and interfaces to control and/or respond to external devices. Students will develop an awareness of related environmental and societal issues, and will learn about college and university programs leading to careers in computer technology. \_ The Ontario Curriculum Grades 11 and 12: Technological Education.

### Overall Expectation:

1. describe how computer components function, and discuss trends in the development of computer hardware;
2. describe the functions of BIOSes and operating systems, and how they interact with each other and with computer hardware;
3. describe the function of electronic components and the use of these components in control systems and other circuits, and calculate values for circuit components;
4. describe network concepts, services, and security;
5. demonstrate an understanding of the use of binary numbers, hexadecimal numbers, and Boolean algebra in computer logic and data processing.
6. build, configure, and maintain a computer system, and connect peripheral devices;
7. demonstrate an understanding of career opportunities and career development in a rapidly changing technological environment, and maintain a portfolio of their work as evidence of their qualifications for future education and employment. describe environmental issues related to the widespread use of computers and associated technologies

Additional information can be found at: <http://www.edu.gov.on.ca/eng/curriculum/secondary/subjects.html>

### COURSE DESCRIPTION:

### COMMUNICATION

Please direct all questions or concerns regarding student progress or program of study to the course teacher. Please call the main office to leave a message at 416-395-3240.

### CONCRETE LEARNING RESOURCES

No formal textbook

### DIGITAL LEARNING RESOURCES

Class lessons, assignments, announcements and important dates can be found on the class website on Bright Space under **Desire to Learn**

## GEORGE S. HENRY ACADEMY'S COURSE WORK POLICY

For each evaluation, the teacher will inform students of the **due date** and the **ultimate deadline**. The ultimate deadline is the last opportunity for students to submit an assignment for evaluation. Teachers may also use a variety of other methods for dealing with late and missed assignments at their discretion.

### Strategies to assist students in meeting deadlines include:

- Peer tutoring
- Using the school app
- Using a personal agenda
- Seeking extra help from teachers
- Requesting for assistance with time management and organizational skills
- Getting help from parents/guardians
- Getting help from a caring adult in the school

## ASSESSMENT AND EVALUATION OF STUDENT ACHIEVEMENT

Each course follows an achievement chart which enables teachers to make judgements about student work that are based on clear performance standards and on a body of evidence collected over time. Additional information can be found on the Ministry of Education website noted within the course description.

## ACHIEVEMENT CHART CATEGORIES

**Knowledge and Understanding (K & U):** Subject-specific content acquired in each course (knowledge), and the comprehension of its meaning and significance (understanding)

**Thinking (T):** The use of critical and creative thinking skills and/or processes

**Communication (C):** The conveying of meaning through various forms

**Application (A):** The use of knowledge and skills to make connections within and between various contexts

## COURSE WORK (70% of your overall grade)

Categories	%	Possible Assessments of Learning
<b>K &amp; U</b>	<b>17.5%</b>	<p><b>Knowledge of content</b> (facts, terms, procedural skills, use of tools) <i>Ex. (write example here)</i></p> <p><b>Understanding of content</b> (Understanding of mathematical concepts) <i>Ex. (write example here)</i></p>
<b>T</b>	<b>17.5%</b>	<p><b>Use of planning skills</b> – understanding the problem (e.g., formulating and interpreting the problem, making conjectures) – making a plan for solving the problem <i>Ex. (write example here)</i></p> <p><b>Use of processing skills</b> – carrying out a plan (e.g., collecting data, questioning, testing, revising, modelling, solving, inferring, forming conclusions) – looking back at the solution (e.g., evaluating reasonableness, making convincing arguments, reasoning, justifying, proving, reflecting) <i>Ex. (write example here)</i></p> <p><b>Use of critical/creative thinking processes</b> (e.g., problem solving, inquiry) <i>Ex. (write example here)</i></p>
<b>C</b>	<b>14%</b>	<p><b>Expression and organization of ideas and information</b> (e.g., clarity of expression, logical organization), using oral, visual, and written forms (e.g., pictorial, graphic, dynamic, numeric, algebraic forms; concrete materials) <i>Ex. (write example here)</i></p> <p><b>Communication for different audiences and purposes</b> (e.g., peers, teachers) and purposes (e.g., to present data, justify a solution, express a mathematical argument) <b>in oral, visual,</b></p>

		<b>and written forms</b> <i>Ex. (write example here)</i> <b>Use of conventions</b> (e.g., terms, symbols) in oral, visual, and written forms <i>Ex. (write example here)</i>
<b>A</b>	<b>21%</b>	<b>Application of knowledge and skills in familiar contexts</b> <i>Ex. (write example here)</i> <b>Transfer of knowledge and skills to new contexts</b> <i>Ex. (write example here)</i> <b>Making connections within and between various contexts</b> (e.g., connections between concepts, representations, and forms within mathematics; connections involving use of prior knowledge and experience; connections between mathematics, other disciplines, and the real world) <i>Ex. (write example here)</i>

### FINAL EVALUATION (30% of your overall grade)

Type	Description	30%
Culminating Task(s)	Culminating Assignment combination of Electronic Circuit Design and programming using hand made parallel port connection cable: It may be to design and create a Decimal 2-Digits dcounter using 7-Segment Display	K/T/A/C
Exam	There is no exam in this course	

### UNITS OF STUDY/COURSE ROAD MAP (subject to change)

#### Unit 1: Computer Hardware, Operating Systems & Networking

1. Computer Construction & Components	K/T/A
2. Operating Systems and Networking	K/T/A
3. Virtual Design	K/C/A
4. A Computer Disassembly & Assembling	K/T/A
5. Final Evaluation May Be an Unit Test	K/T/A/C

#### Unit 2: Web Design

1. Web Design Using HTML & CSS	K
2. Code Academy Practice	K
3. Final Evaluation May Be to Design a Website to Show Your Own Personal Profile, Interests, and Ideas Project	K/T/C/A

### Unit 3: Electronic Circuits

1. Basic Elements of an Electronic Circuit	K/T
2. Electronic Components /Resistors/ Capacitors	K/T/A
3. Series and Parallel Circuits	K/T/C/A
4. Series and Parallel Circuits Lab	
5. Final Evaluation Can Be a Unit Test	K/T/C/A

### Unit 4: Digital Circuits

1. Introducing Logic Gates	K/T/A
2. AND/OR/NAND/NOR/NOT Gates	K/T/A
3. Logic GATES Lab	K/T/A
4. Final Evaluation Can Be Can Be a Unit Test	

### Unit 5: Programming

1. Introduction to Turing Programming	K/T
2. Input/Output/Variables/Loop/Condition	K/T/A
3. Graphics and Animation	K/T/A
4. Final Evaluation Can Be an Animation Project	K/T/C/A

### Unit 6: Communication technologies, job opportunities and environmental effect

1. Effect of the Communication technology on Environment Research	C
2. Job Opportunity Research	C
3. Final Evaluation can be Research Report and Presentation	C

**The date they are scheduled is flexible due to different learning curves for classes. Tests are not given until the teacher believes the class is ready. The order of the units in this table is not necessarily the order in which they will be presented in this course**

### **GEORGE S. HENRY ACADEMY'S LATE & MISSED EVALUATION POLICY**

It is the responsibility of the student to make arrangements with their teacher for any missed course material and/or assignments. Extenuating circumstances will be considered on a case-by-case basis.

### **GEORGE S. HENRY ACADEMY'S ACADEMIC DISHONESTY POLICY**

Cheating and plagiarism will not be condoned. For more information, refer to the Academic Honesty Policy found in the Student Handbook. The Student Handbook can be found in the George S. Henry Academy app.

### SPECIALIST HIGH SKILLS MAJOR (SHSM) REQUIREMENTS

GRADE 11 AND 12 CREDITS	ENVIRONMENT	HEALTH & WELLNESS	HOSPITALITY & TOURISM
Major Credits	4	4	4
English ( <i>including a CLA*</i> )	2	1	1
Mathematics ( <i>including a CLA</i> )	1	1	1
Science or Social Sciences and Humanities ( <i>including a CLA</i> ) ( <i>May be substituted with 1 coop credit</i> )	-	1	-
Business Studies or Science ( <i>including a CLA</i> ) ( <i>May be substituted with 1 coop credit</i> )			1
Cooperative Education	2	2	2
<b>TOTAL</b>	<b>9</b>	<b>9</b>	<b>9</b>

\*Contextualized Learning Activity