Computer Programming 9

In this course you will learn computer coding and web design. You will have an opportunity to improve your ability to think abstractly and to work within a logical framework that is outside your regular mental processes. As you learn computer programming, you will learn how to break problems down into many interrelated components. You will also focus on the principles of design, paying attention to the aesthetics of what you create.

Course Content

- text-based coding
- binary representation of various data types, including text, sound, pictures, video
- drag-and-drop mobile development
- programming modular components
- development and collaboration in a cloud-based environment
- design and function of networking hardware and topology, including wired and wireless network router types, switches, hubs, wireless transfer systems, and client-server relationships
- functions of operating systems, including mobile, open source, and proprietary systems
- current and future impacts of evolving web standards and cloud-based technologies
- design for the web
- strategies for curating and managing personal digital content, including management, personalization, organization, maintenance, contribution, creation, and publishing of digital content
- relationships between technology and social change
- strategies to manage and maintain personal learning networks, including content consumption and creation
- keyboarding techniques

Curricular Competencies

Applied Design

Understanding context

- Engage in a period of research and empathetic observation in order to understand design opportunities

Defining

- Choose a design opportunity

- Identify potential users and relevant contextual factors
- Identify criteria for success, intended impact, and any constraints

Ideating

- Take creative risks in generating ideas and add to others' ideas in ways that enhance them
- Screen ideas against criteria and constraints
- Critically analyze and prioritize competing factors, including social, ethical, and sustainability considerations, to meet community needs for preferred futures
- Choose an idea to pursue, keeping other potentially viable ideas open

Prototyping

- Identify and use sources of inspiration and information
- Choose a form for prototyping and develop a plan that includes key stages and resources
- Evaluate a variety of materials for effective use and potential for reuse, recycling, and biodegradability
- Prototype, making changes to tools, materials, and procedures as needed
- Record iterations of prototyping

Testing

- Identify sources of feedback
- Develop an appropriate test of the prototype
- Conduct the test, collect and compile data, evaluate data, and decide on changes
- Iterate the prototype or abandon the design idea

Making

- Identify and use appropriate tools, technologies, materials, and processes for production
- Make a step-by-step plan for production and carry it out, making changes as needed
- Use materials in ways that minimize waste

Sharing

- Decide on how and with whom to share their product and processes
- Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures, using appropriate terminology
- Critically evaluate the success of their product, and explain how their design ideas contribute to the individual, family, community, and/or environment
- Critically reflect on their design thinking and processes, and evaluate their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain an efficient co-operative work space

- Identify new design issues

Applied Skills

- Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments
- Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed

Applied Technologies

- Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks
- Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use
- Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies

Learning Materials and Assessment

All assignments, resources and assessment rubrics will available at

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transformativesuccess.ca
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Content

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01 Imaging - File Formats
02 Imaging - Layers and Masking
03 Imaging - Expertly Remove Background
04 Imaging - Clipping Mask Effects
05 Imaging - Design Principles
06 HTML - Getting Started
07 HTML - Header and Nav
08 HTML - Section and Aside
09 HTML - Articles and Classes
10 HTML - Class Child
11 HTML - Flex Box Image Link
12 HTML - Finalizing Your Site
13 HTML - Applied Design Project
14 HTML - CSS Variables with JavaScript
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Expectations

- Respect Yourself and Others
- Always demonstrate respectful behavior
- Respect Effort and Learning
- Respect your Community and the Environment
- Attend class on time
- Attend tutorials to complete work
- Always put forth your best effort
- Listen to the teacher and to your work-partners
- Absolutely no food or drink in the computer labs
- Be careful not to damage school equipment. Don't unplug any of the computer cabling without the direction of the teacher