Course Outline

Instructor: K. Hubick & V. Joo
2021-2022 Semester II

CS10

"Game Design"

Computing Science
Sturgeon Composite High School

There are five modules in Computing Science 10, each module worth one credit if successfully completed. Modules are broken into a series of small tasks that demonstrate mastery of a specific course outcome. There is no final exam for this course. Students may choose to complete an additional one credit project (enrichment module) or any other introductory module from the program of studies with the consent of the instructor.

Module 1 - CSE 1010 Computer Science 1 (Tuesday February 1 to Friday February 25)

- Students explore hardware, software and processes. This includes an introduction to the algorithm as a problem-solving tool, to programming languages in general and to the role of programming as a tool for implementing algorithms.
- This is first module in computing science at the introductory level and does not have a prerequisite

Module 2 - CSE 1110 Structured Programming 1 (Tuesday February 28 to Thursday March 24)

- Students are introduced to general programming environments in which they write simple structured algorithms and programs that input, process and output data, use some of the more basic operators and data types and follow a sequential flow of control.
- This is an introductory level computing science module and does not have a prerequisite

Module 3 - CSE 1120 Structured Programming 2 (Monday April 4 to Friday May 6)

- Students work with structured programming constructs by adding the selection and iteration program control flow mechanisms to their programming repertoire. They write structured algorithms and programs that use blocks of code to introduce an element of modularity into their programming practice.
- This is an introductory level computing science module with a prerequisite of Structured Programming 1

Module 4 - CSE 1240 Robotics Programming 1 (Monday May 9 to Wednesday June 15)

- Students use an appropriate robot control language (RCL) to design, develop, implement and debug robotics programs that employ standard structured programming constructs and simple data structures. In the process, they develop a general understanding of robots and the robotics environment.
- This is an introductory level computing science module with a prerequisite of Structured Programming 1

Module 5 - ELT 1010 Electro-Assembly 1 (Monday May 9 to Wednesday June 15)

- Students apply basic fabricating and servicing techniques to construct and test electronic and electromagnetic devices and cables.
- This is the first module at the introductory level in the Electro Technologies CTS stream (supporting the Robotics Programming 1 module) and has no prerequisite

Enrichment Module - CSE 1910 Project A (upon completion of CSE 1240 and ELT 1010)
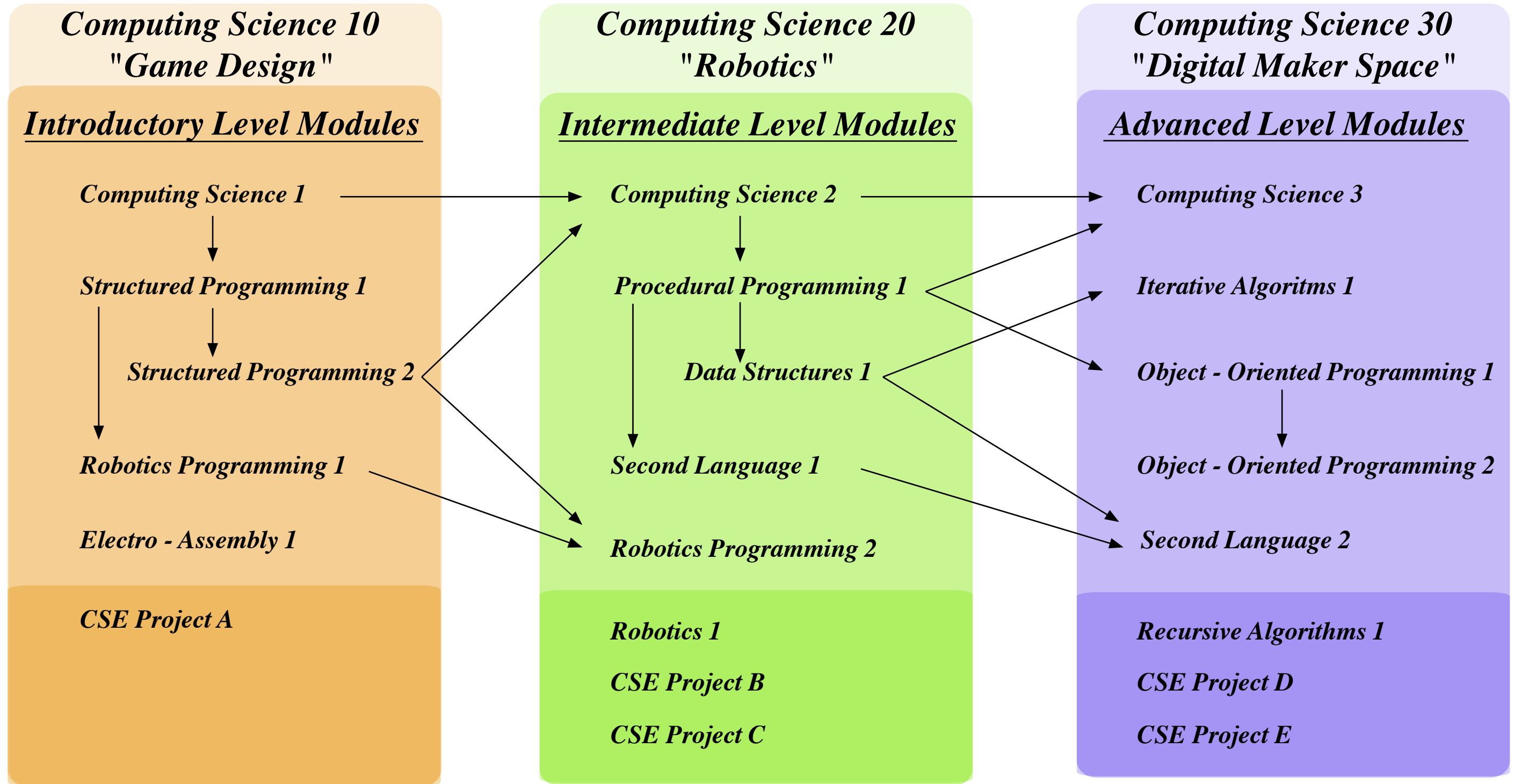
- A student developed project focussing on design and management skills that extend and enhance competencies and related skills in Computing Science and other CTS courses through contacts that are personally relevant.
- This enrichment module is an introductory level module with no prerequisite

Note:

Students are encouraged to bring their own personal device for programming assignments. Although a Chrome Book and, in a limited manner, an iPad may suffice in the first module, a personal laptop is far better suited for the programming requirements for all computing science modules. Students will have access to a basic computer provided by the school for the course if they do not wish to use their own device.

Computing Science CTS Module Sequence

Computing Science 10 "Game Design"

Introductory Level Modules

Core Modules

Computing Science 1

Structured Programming 1

Structured Programming 2

Robotics Programming 1

Electro - Assembly 1

Enrichment

CSE Project A

Computing Science 20 "Robotics"

Intermediate Level Modules

Computing Science 2

Procedural Programming 1

Data Structures 1

Second Language 1

Robotics Programming 2

Robotics 1

CSE Project B

CSE Project C

Computing Science 30 "Digital Maker Space"

Advanced Level Modules

Computing Science 3

Iterative Algoritms 1

Object - Oriented Programming 1

Object - Oriented Programming 2

Second Language 2

Recursive Algorithms 1

CSE Project D

CSE Project E

Notes:

- Students can earn a possible 6 credits
- Students must pass Structured Programming 2 to proceed to Computing Science 20
- Additional credits could be earned by completing extra modules within the Robotics Club

- Students can earn a possible 7 or 8 credits
- Students must pass both Procedural Programming 1 and Data Structures 1 to proceed to Computing 30
- Additional credits could be earned by completing extra modules within the Robotics Club

- Students can earn a possible 7 or 8 credits
- Additional credits could be earned by completing extra modules within the Robotics Club
- Computing Science 30 may be used for university entrance (Group C Option) by completing 5 modules at the Advanced Level