



Computing Science
Sturgeon Composite High School

Course Outline

Instructor: K. Hubick
2018-2019 Semester I

CS20

“Robotics”

Computing Science 20 consists of five intermediate modules, each worth one credit if successfully completed. There is no final exam for this course. Students may choose to additionally complete extra one credit modules (enrichment modules) or any other introductory/intermediate module from the program of studies with the consent of the instructor.

Module 1 - CSE 2010 Computer Science 2

- Students explore hardware, software and processes at the intermediate level, learning how to layer modular programming approaches over structured programming techniques to improve program efficiency and robustness.
- Prerequisite: Computer Science 1 and Structured Programming 2

Module 2 - CSE 2110 Procedural Programming 1

- Students are introduced to a more formal modular programming approach incorporating subprograms
- Prerequisites: Computing Science 2

Module 3 - CSE 2120 Data Structures 1

- Students move beyond the use of primitive data types to the fundamental data structures “array” and “record” to efficiently handle lists of related data in this intermediate level module.
- Prerequisite: Procedural Programming 1

Module 4 - CSE 2140 Second Language Programming 1

- Students are provided the opportunity to master the basics of structured and modular programming in a second programming language in this intermediate level module.
- Prerequisite: Procedural Programming 1 or Structured Programming 2

Module 5 - CSE 2240 Robotics Programming 2

- Basic robotics programs are enhanced by employing procedural programming techniques and fundamental data structures to create programs displaying greater agency and autonomy in this intermediate level module.
- Prerequisite: Robotics Programming 1 and Structured Programming 2

Enrichment Module - ELT 1130 Robotics 1

- Students apply the fundamentals of robotics systems and basic robotic functions.
- This is a module at the introductory level in the Electro Technologies CTS stream (supporting the Robotics Programming 2 module) and has no prerequisite

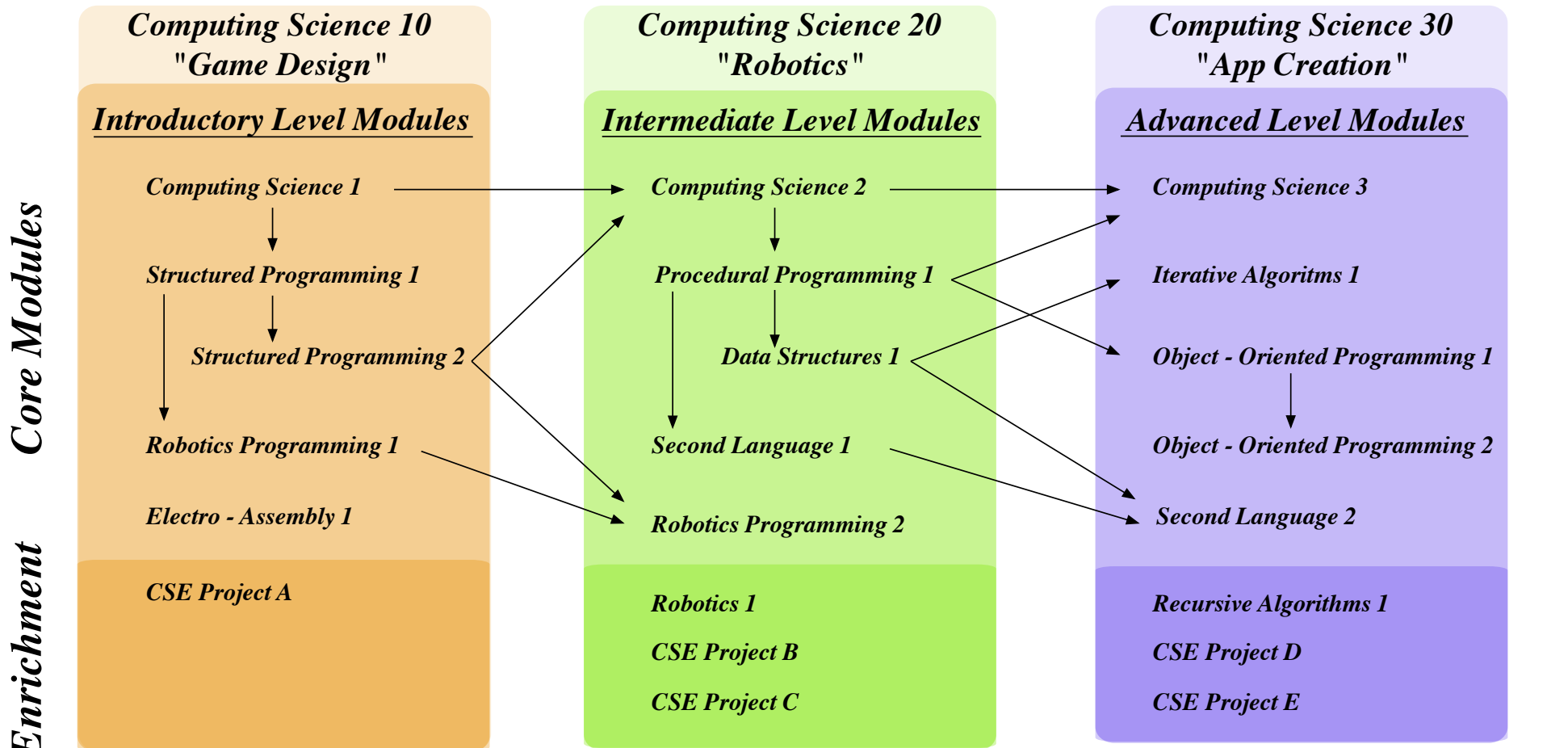
Enrichment Module(s) - CSE 2910 Project B and CSE 2920 Project C

- Student developed projects at the intermediate level 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 intermediate level module with no prerequisite

Note:

Students will have access to a basic computer provided by the school for the course but are encouraged to use their own device. There are several supporting CTS modules for the Robotics Programming 2 module in the Electro Technologies stream such as Electronic Power Supply 1 (ELT 1050), Robotics Applications (ELT 1140), Electro Assembly 2 (ELT 2010), Robotics 2 (ELT 2140), Robotics Sensor 1 (ELT 2160), Robotics Sensor 2 (ELT 2170), ... , that students may pursue within computing science 20 and through the robotics club.

Computing Science CTS Module Sequence



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