



Computing Science
Sturgeon Composite High School

Course Outline

Instructor: K. Hubick
2018-2019 Semester I

CS30

“Digital Maker
Space”

Computing Science 30 consists of five advanced 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 module from the program of studies with the consent of the instructor.

Module 1 - CSE 3010 Computer Science 3

- Students explore hardware, software and processes at the advanced level moving from a procedural programming to object-oriented approach.
- Prerequisite: Computer Science 2 and Procedural Programming 1

Module 2 - CSE 3110 Iterative Algorithms 1

- Students learn several standard iterative data processing algorithms (including exchange, insertion and selection sorts) useful for working with array data structures.
- Prerequisites: Data Structures 1

Module 3 - CSE 3120 Object-Oriented Programming 1

- This module represents the final stage in the natural progression that students have taken from modular programming and procedural programming techniques to object-oriented programming (OOP) in which modularity in program design is handled through objects.
- Prerequisite: Procedural Programming 1

Module 4 - CSE 3130 Object-Oriented Programming 2

- Students extend their knowledge of object-oriented programming (OOP) techniques by exploring association through classes.
- Prerequisite: Object-Oriented Programming 1

Module 5 - CSE 3140 Second Language Programming 2

- Provides students who have mastered procedural programming and data structures in one language the opportunity to explore these programming concepts in a second language
- Prerequisite: Second Language Programming 1 and Data Structures 1

Enrichment Module - CSE 3310 Recursive Algorithms 1

- Students apply the fundamentals of recursion to the binary sort algorithm producing the quick-sort and merge-sort algorithms
- Prerequisite: Iterative Algorithm 1 and Object-Oriented Programming 1

Enrichment Module(s) - CSE 3910 Project D and CSE 3920 Project E

- Student developed projects at the advanced 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. This course may be used as a “Group C” option for university admission upon the successful completion of five advanced level computing science modules.