

## COMPUTER PROGRAMMING, ADVANCED

*This is an advanced course in computer programming/software engineering and applications. It reviews and builds on the concepts introduced in Computer Programming 1 and 2. It introduces students to dynamic data structures, advanced utilization of classes, and applications of recursion through the application of mathematical concepts. This course will also highlight the differences between the many different languages of computer programming.*

- Students will develop applications which make advanced use of the skills and concepts developed in Computer Programming 1 and Computer Programming 2.
- Students will use searching and sorting algorithms.
- Students will utilize multidimensional arrays.
- Students will properly employ dynamic data structures/abstract data types (ADTs).
- Students will design and implement advanced object-oriented concepts.
- Students will use Unified Modeling Language (UML) to design object-oriented programs.
- Students will develop a program of significant complexity as part of a portfolio.

