



New York Mills High School

Curriculum Document

Curriculum Area: **Business Education**

Course Name: **Software Engineering**

Common Course Catalog Number: **10152**

Length of Course: **One Semester**

Pre-Requisite: **None**

Grade Level: **10-12**

Course Description:

In Software Engineering the students will have the opportunity to learn and explore the following programming and engineering systems: 3-D Gaming, Advanced HTML, Web CSS, Javascript, Perl, Visual Basic, Microsoft C++, Java Applets, Microsoft C#, XML, DHTML, Database design. Students will research topics such as; FORTRAN, COBOL, AJAX, MySQL, Oracle, and design projects using your favorite programming language and tools.

Essential Learner Outcomes:

- Understand software engineering and explain its importance
- Show documentation of visual basic skills
- Develop and write a software project proposal
- Develop and write a Software Requirements Specification
- Use various software systems to create professional programs
- Document the design and implementation of different software systems
- Understand various software architectural styles and models

Units of Study:

- Visual Basics Software
 - Chapter 1-8: History of VB, Program and Graphical User Interface Design, Program Design and Coding, Variable and Arithmetic Operations, Decision Structures, Loop Structures, Creating Web Applications, Using Procedures and Exception Handling, Visual Studio Tools for Office
- Microsoft C++ and C#
 - Problem-Solving Process, Variables and Constants, Using Data, writing and compiling C#, using GUI objects, looping, selection and repetition structure, using arrays and methods, using strings and classes for objects

- 3-D Gaming, Visual Basics Gaming and Visual C# Gaming
 - Methods and techniques, forms and controls, real-time animation, adding objects, add bitmaps and characters, using sound effects and music, use portals
- Java Programming
 - Creating your first Java program, java applets and GUI outputs, use constants and variables with methods, classes and objects, understand if and if...else statements, create looping, strings, arrays and swing components