

# CRHSD Computer Programming Sequence

**Current Course Offerings:** 4891 – Intro to Computer Programming  
4889 – Intro to Computer Programming Academy  
4893 – Visual Basic  
4892 – Advanced Visual Basic  
4894 –C++  
4898 – JAVA  
4897 – Web Design I

**Course Location:** M106 Computer Lab

**Suggested Resources:** All required storage media, articles, textbooks, readings, software and other electronic resources can be found in class and do not have to be purchased. A two-pocket folder or small notebook, not provided, is recommended to organize notes, assignment sheets, and other technical documents as necessary.

**Instructor's Name:** Ed Sayre

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## **Welcome!**

Greetings, and welcome to the computer programming languages sequence at Cumberland Regional High School. Know that I am very delighted to be your instructor for this class, and my hope is that you will find that all of the courses in this sequence will provide the tools to not only successfully write computer applications, but also enhance overall problem-solving and logical thinking skills.

Please do not hesitate to see me with any questions or concerns. Again, welcome to the computer programming languages sequence and I look forward to a rewarding semester.

## **GRADING PROCEDURES**

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Grading in computer programming courses is uniform throughout the sequence.

Every student will receive an assignment sheet for each chapter of study. All grades, along with any feedback notes or deductions will be recorded on this assignment sheet. Grading typically takes place on student terminals for immediate feedback.

All deliverable classwork, projects, and the like are graded based on a standard project evaluation rubric throughout the series. While project specifications and guidelines vary throughout a course and among course levels, grading is always shared among the following criteria:

- Project performance(programs works according to specifications)
- Accurate output
- Efficient logic
- Accurate accomplishment of all requirements
- Contributions to learning team
- Documentation
- User interface
- Standards and conventions
- Timeliness

## ***GRADE CALCULATION***

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Grades are calculated using the following weights in three categories:

- Classwork: 45%
- Projects: 20%
- Assessments: 35%

## ***CLASS POLICIES***

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Violations of computer lab policies will be dealt with according to the standard high school disciplinary policy. Additionally, lab-specific rules as identified in the Technology Contract are in effect. The contract must be signed by both student and parent/guardian and returned.

## ***COURSE DESCRIPTIONS***

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**Introduction to Computer Programming** This is an introductory course in computer programming and is a foundation for all other programming languages. The QBasic language will be taught, together with the algorithms and programming commands necessary for students to develop and write real-world applications using a variety of structures. Problem-solving, logical thinking skills and algebraic operations will be emphasized throughout this course. Simple games and computer graphics will also be explored during this course. Previous computer programming experience is not required. **Prerequisites:** none

**Visual Basic** Students will learn to create applications for Microsoft Windows. It includes tools that allow a programmer to create an application that has features similar to other Windows applications without having to write many lines of code. The course will cover a variety of topics such as using modules procedures, collections, arrays, using OLE control text file for input, calling sub procedures, next loop, and an array of other powerful VB applications. The course emphasizes problem-solving and logical thinking skills. Algebraic operations and informational text will be interwoven throughout this course. It is mandated that the core Introduction to Computer Programming be taken before students elect this course. **Prerequisites:** Intro to Computer Programming

**Advanced Visual Basic** This course provides the student who has successfully completed Visual Basic with an opportunity to review and enhance his/her skills. For students interested in computer careers, this course will provide a strong background with the skills necessary to continue at the college level. This course focuses on advanced object-oriented programming features, network communications, data files, and working with databases. Students who successfully complete this course will have the opportunity to enroll into a dual credit articulation agreement with Cumberland County College. Students enrolled in this course will also have the opportunity to earn an industry-based certification in the Microsoft Technology Associate series. **Prerequisites:** Visual Basic

**Advanced Pascal/C++** Students who have demonstrated proficiency in Advanced Visual Basic are eligible to take this course. The course will provide the students with experience in a structured language required by many colleges. Topics include simple data types, control structures, array and string and file data structures, and pointers to dynamic memory structures. Sorting and search algorithms will be examined to further develop understanding and skills with a variety of data structures. The course emphasizes good software engineering principles and developing fundamental programming skills in the context of a language that supports the object-oriented paradigm. Students enrolled in this course will also have the opportunity to earn an industry-based certification in the Microsoft Technology Associate series. **Prerequisites:** Advanced Visual Basic

**Programming in JAVA** This course allows the student who has demonstrated proficiency in Advanced Visual Basic/Pascal or Advanced Pascal/C++ to expand their programming study to the post-graduate level. Students will transfer previous learning situations and develop competence in a new structured programming language commonly used to control many current day applications such as websites, games, cell phones, kiosks, GPS systems, digital television, and cameras. Previous experience in object-oriented programming is required. **Prerequisites:** Advanced Visual Basic or C++

**Web Design I** Students will be introduced to the principles and concepts of designing a web site for the Internet along with studying the underlying structure of a web page. Students will learn the basics of HTML (Hypertext Markup Language) to create a home page that incorporates text and graphics. This course also covers additional features including Cascading Style Sheets (CSS), working with image maps, a short introduction to JavaScript, and optimizing media for viewing on the web. The present and future advancements of the Internet will be discussed. **Prerequisites:** Intro to Computer Programming