

Frequently Asked Questions for Java Programming:

Q1: What are the prerequisites for this course?

Q2: What is Java, anyway?

Q3: There are many computer languages to learn - why learn Java?

Q4: How difficult is it to learn Java programming?

Q5: What is the workload like?

Q6: Is this a yearlong course?

Q7: What parts of the language does this course cover?

Q8: Are there other computer programming courses at CCHS?

Questions and Answers:

Q1: What are the prerequisites for this course?

A: Because computer programming and computer science are heavily reliant on programmers' ability think logically and their facility with variables, functions, arrays, and other mathematical concepts, the prerequisite for Intro. to Java Programming is a strong background in Algebra 2. This does not mean that a student with CP2 Algebra 2 or Precalculus cannot be successful in computer science, but they would have a challenge that those students with more fluency in mathematics would not have. However, if a student has had significant previous experience with Java or another programming language, they may be exempt from the mathematics requirement. Students should speak with Mr. Beckwith if they feel they should be exempt. The prerequisite for Adv. Java Programming is successful completion of the Intro. course.

Q2: What is Java, anyway?

A: Computer Science is a field involving computer programming, algorithm design, application design, and controlling the behavior of hardware and software. Java is one of the hundreds of computer languages one can study. Computer languages have a vocabulary, syntax, and grammar. They allow the programmer to control digital devices in an almost unlimited way, by piecing together blocks of code to accomplish the task desires. Programming in Java involves understanding all the aspects of the language and defining variables, functions (called "methods"), and "classes" and knowing how to work with external libraries of code, all through typing in (not selecting from menus) code to describe the interaction between all of these pieces.

Q3: There are many computer languages to learn - why learn Java?

A: The Advanced Placement test in Computer Science taken by high school students around the country is in the Java language (it was previously in C++). Millions of devices around the world run Java. In 2010, eWeek voted Java the "#1 programming language to keep you employed". That being said, there are plenty of arguments for learning other excellent computer programming languages and some might argue that Java is a bit complex for a course that introduces the concepts of computer programming. Until the school can commit to more computer science offerings, however, Java will likely be the language of choice at CCHS.

Q4: How difficult is it to learn Java programming?

A: It is true that Java is an "object-oriented" programming language, which means that it is more complex than a "procedural" language. For some students, they struggle with the concepts and may find that they are not quite ready for the abstract nature of the language. For others, they pick it up very quickly and become comfortable enough with the language to be able to write all kinds of apps in Java. A third group of students involves those that enter the course, struggle with understanding the syntax and concepts of objects, classes and constructors, but then a "light bulb goes on" and an entire world opens up and they join the second group just described. It is sometimes hard to tell which students are struggling and not ready vs. those for whom that exciting light bulb is about to turn on.

Q5: What is the workload like?

A: There are two sides to the nature of this course: 1. This course is an elective and students are often taking it in addition to a courseload of other rigorous academic courses. 2. Java is a language, and like learning French, Latin, Chinese, or Spanish, it takes on the feeling of an academic course, in terms of the work it takes to understand a new language. That being said, the workload is probably less than a typical math class. There is plenty of time provided during class for working on programming projects, although some work on those projects must be done at home. There are somewhat regular homework assignments, although there is often more than one day given to complete them. There are regular programming project assignments, increasing in complexity as the year goes on. Some students do need significant help outside of class, when they are struggling with the concepts.

Q6: Is this a yearlong course?

A: There are two semesters: Intro. to Java Programming in Sem.1 and Advanced Java Programming in Sem.2. The Intro course is accessible (in terms of ability to be successful) to a wider set of students, while the Advanced course requires a good mastery of the Intro. topics and a high level of sophistication to be able to handle the even more complex concepts of the second semester.

Q7: What parts of the language does this course cover?

A: The first semester covers variable definition, basic I/O, operators, conditionals, looping mechanisms, method definition, 1D and 2D arrays and arraylists, class definition and constructors, and some basic graphics. The second semester covers inheritance, file I/O, exceptions, interfaces, abstract classes, and graphics, including JFrames, layout managers, canvases, JButtons and listeners.

Q8: Are there other computer programming courses at CCHS?

A: Starting in 2014-2015, an Intro. and an Advanced Python programming course will be offered (see the Math Dept. website for more information). There will potentially be an *Advanced Problem-Solving with Java* course offered in 2015-2016.