

Advanced Placement (AP) Computer Science
No. of credits: 1

Instructor: Mrs. Susan Wilson
Grade level: 11-12

Prerequisites: A strong background in math, logic, and problem solving with the ability to perform some numerical algorithms. (85% or higher in Math A and B.) Above all, students should be willing to **work hard** to earn college credit.

Contact Information: 744-1600 ext. 3067 or swilson@rockypoint.k12.ny.us

Course Description: The goals of the AP Computer Science course are comparable to those in the introductory courses for computer science majors offered in college computer science departments. It is not expected, however, that all students in an AP Computer Science course will major in computer science when attending college.



AP Exam: Tuesday, May 8, 2007 (**mandatory**)

Classroom Expectations/Rules:

To make this semester in AP Computer Science the most productive and enjoyable it can be, I have developed a few simple guidelines. Following these will help you to be an active learner and an asset to the class environment.

1. **Be on time to class** Be seated at your computer and ready to work by the time the bell rings. Lateness will not be tolerated.
2. **Be prepared for class** You should have all your books with you when you arrive to class (i.e. not in your locker) daily. If you miss a class, you are responsible for finding out what work you missed and then making it up by the due date.
3. **Be involved** Participate in class, offer your ideas and share your thoughts.
4. **Be respectful** Appropriate behavior is expected at all times. Cursing will not be tolerated.

Class time is an important commodity. It is not to be wasted. If you need to make up work you missed, it is your responsibility. Students are expected to abide by the school's Acceptable Use Policy at all times. Accounts will be suspended if a student violates the policy in ANY WAY. Your quarterly grades will reflect class work, quizzes/tests, and projects. Student success is important to me. I will be available for extra help on Wednesdays and Thursdays throughout the year. It is expected that students will complete in a minimum of 3 hours of homework each week.

Materials:

- ✓ AP Java Concepts by Cay Horstmann
- ✓ Advanced Placement Computer Science Study Guide by Fran Trees
- ✓ Notebook (your choice)
- ✓ 1 1/2" binder & loose-leaf paper
- ✓ Thumb drive (256 meg minimum)

Students should have access to a computer at home and download the **FREE** programs that are used to program in JAVA to complete their assignments. These programs include, but are not limited to:

1. Eclipse downloaded from www.eclipse.org
2. Alice downloaded at www.alice.org
3. BlueJ downloaded at www.blueJ.org
4. Java SDK 1.5 downloaded at www.sun.org
5. Marine Biology Case Study downloaded at www.collegeboard.com/prod_downloads/ap/students/compsci/JavaMBS.zip

Course Overview: Upon the completion of the course, students should be able to:

- Design and implement computer-based solutions to problems in a variety of application areas
- Use and implement well-known algorithms and data structures
- Develop and select appropriate algorithms and data structures to solve problems
- Code fluently in an object-oriented paradigm using the programming language Java
- Students are expected to be familiar with and be able to use standard Java library classes from the AP Java subset
- Read and understand a large program consisting of several classes and interacting objects
- Students should be able to read and understand a description of the design and development process leading to such a program
- Identify the major hardware and software components of a computer system, their relationship to one another, and the roles of these components with in the system and recognize the ethical and social implications of computer use

About the Exam:

During the three-hour exam, you won't be tested on minor points of syntax. All exam code is consistent with the **AP Java subset**. On both the multiple-choice and free-response sections, the exam includes a **quick reference** to both the case study and the AP Computer Science A subset classes.

Section I: Multiple-Choice

You'll have one hour and 15 minutes for the 40 question multiple-choice section. Along with topics from the course outline, the multiple-choice section includes at least five questions based on the **AP Marine Biology Simulation Case Study**.

Unlike other multiple-choice tests, random guessing can hurt your final score. While you don't lose anything for leaving a question blank, one quarter of a point is subtracted for each incorrect answer on the test. But if you have some knowledge of the question and can eliminate one or more answers, it's usually to your advantage to choose what you believe is the best answer from the remaining choices.

Section II: Free-Response

The free-response section contains 4 questions to be completed in 1 hour and 45 minutes. This section requires you to demonstrate the ability to solve problems involving more extended reasoning. Along with topics from the course outline, the free-response section includes one question based on the **AP Marine Biology Simulation Case Study**.

Scoring the Exam:

The multiple-choice and free-response sections are each worth half of your final score. Please remember: Because the exam is designed to cover all of the subject matter in Computer Science A, you're not expected to answer all of the multiple-choice questions and free-response questions correctly to earn a passing grade.