

## COURSE SYLLABUS: COMPUTER AP JAVA

Instructor: Miss Elizabeth Carter  
Department of Computer Science

2005-2006 Year  
Portsmouth High School

### 1. Required Textbooks

**Content for the class will be derived from these main sources:**

Bravaco, Ralph and Shai Simonson, *Java and Object Oriented Programming*, Stonehill College, August 2003, revised June 2004.

Deitel, H.M. & Deitel, P.J. *Java: How to Program, 3<sup>rd</sup> Ed.*, Prentice Hall, 1999.

Knowlton, Todd. *Java: Introduction to Programming*. South-Western Educational Publishing, 1999.

Knowlton, Todd. *Activities Workbook to Java: Introduction to Programming*. South-Western Educational Publishing, 1999.

*The Advanced Placement Program® Marine Biology Simulation Case Study* developed by Alyce Brady of Kalamazoo College, 2002.

Java 2 Swing API files, ObjectDraw API files, other relevant API files.

Various materials gained from the Internet and other relevant sources.

### 2. Course Description

Computer AP in Java is a course designed for the advanced programming student. Considerable amount of time will be spent on learning the Java programming language and applying this knowledge to provide practical solutions to various paradigms. The students will be expected to be able to successfully program in Java by completion of this course. Near completion of this course, the student will be required to take one of the Advanced Placement Tests in Computer Science to receive credit for the course (as noted in the Program of Studies booklet). This is a demanding college-level course (e.g., a college level project may take a student 60 hours to complete). To do well, expect to put in at least 2 hours of homework (reading and studying) for every hour of class time. If you do this in the beginning you will hopefully survive the rest of the course.

### 3. Course Purpose

The primary purpose of Java AP is to provide students with the opportunity to learn Java and to provide solutions to various problems using an object orientated programming approach. The secondary purpose of Java AP is to prepare the student to successfully pass one of the Advance Placement Computer Science Exams offered by the College Board.

### 4. Course Objectives

The course objectives include increasing:

- Student accountability
- Core computer skills
- Basic computer knowledge
- Technology skills
- Ability to develop algorithms
- Problem solving skills
- Working knowledge of Java
- Working knowledge of the AP classes and case study
- Ability to solve problems and real-world situations using Java
- Ability to obtain college credit by passing an AP Computer Science Exam

- Awareness of the role computers play in modern society
- Awareness of the ethical and social implications of computer use

## 5. Learning Climate

The teaching method for this course includes the traditional lecture as well as hands on lab experience for the student. Learning is interactive; each student is expected to be responsible for his/her own commitment to and active participation in the learning process both inside and outside of the classroom. Furthermore, the hands-on exercises and projects require complete involvement by each student. The emphasis of this course is on learning the concepts of programming and problem solving using Java. Students will only be successful in class if they apply themselves to the material outside of class time as well.

## 6. Requirements for the Course

**Attendance:** Since much of the class progress will depend upon student involvement and participation, a pattern of sustained absence will present a problem. The student is required to actively participate in class. Please see the instructor in advance if you have a legitimate need to be absent; otherwise full attendance is expected.

**Class Participation:** All students are expected to actively and positively participate in class. This includes actively listening to lectures and participating in classroom discussions. Mere physical presence is unsatisfactory and any disruptive behavior will not be tolerated.

**Daily Homework:** All students are expected to actively review and study the material related to each class's work, on their own time. It is the student's responsibility to read, study, and do the necessary research to master the given material, **even if no explicit assignment is given! This is to be done on a daily basis.** Long term program assignments will be given to solve outside of class as well.

**Exercises/Worksheets:** Students will be assigned exercises from the text or will be provided with worksheets from the instructor. These will be completed and submitted, on a daily basis, to the instructor. Absent students' classroom assignments are due the day following their return.

**It is the student's responsibility to obtain missed assignments.**

**Projects:** Each student will complete projects relevant to the topic being presented. Some projects may be assigned to small teams of students for completion.

**Notebooks:** Notebooks containing all student work will be required of each student. Cumulative notebooks are graded intermittently throughout the year in addition to being graded during the last week of each quarter.

**Tests:** Tests will be given to evaluate the student's knowledge on a particular topic.

**Quizzes:** Quizzes may be announced or unannounced (hint: **expect a quiz every class period**).

## 7. Evaluation

Evaluation will be based upon attendance, participation, written assignments, tests, quizzes, and projects, as outlined in "CLASSROOM PROCEDURES AND GRADING POLICIES."

## 8. Classroom Procedures

Classroom Procedures are found in the document entitled "CLASSROOM PROCEDURES AND GRADING POLICIES."