

# AP Computer Science A

Course Outline

Michael Lew

**TEXT:** Head First Java, 2<sup>nd</sup> Edition, Kathy Sierra and Bert Bates  
Barron's Review Book for AP Computer Science

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## **COURSE OVERVIEW:**

The purpose of this class is to introduce the student to the object oriented programming paradigm using the Java language. Concepts such as classes, objects, inheritance, polymorphism, and code reusability will be covered. Individual hands-on laboratory work will help solidify each concept taught. Students will complete a long-term programming project and will create a formal presentation demonstrating the project.

## **COURSE OBJECTIVES:**

The student will:

1. develop an understanding of the concept of a class and an object.
2. develop an understanding of how objects model real world objects.
3. implement inheritance to construct an object inheritance hierarchy.
4. implement polymorphism to process collections of objects.
5. study and extend the GridWorld case study project.
6. design and implement a long-term programming project and formally present the project.

## **GRADE ALLOCATION:**

|                   |     |
|-------------------|-----|
| Personal Points:  | 5%  |
| Reading Questions | 10% |
| Quizzes           | 15% |
| Programs          | 25% |
| Tests             | 45% |

## **GRADING SCALE (all numbers are in percent):**

|    |                             |    |                             |
|----|-----------------------------|----|-----------------------------|
| A  | Grade $\geq 95$             | D+ | $67 \leq \text{Grade} < 70$ |
| A- | $90 \leq \text{Grade} < 95$ | D  | $63 \leq \text{Grade} < 67$ |
| B+ | $87 \leq \text{Grade} < 90$ | D- | $60 \leq \text{Grade} < 63$ |
| B  | $83 \leq \text{Grade} < 87$ | F  | Grade $< 60$                |
| B- | $80 \leq \text{Grade} < 83$ |    |                             |
| C+ | $77 \leq \text{Grade} < 80$ |    |                             |
| C  | $73 \leq \text{Grade} < 77$ |    |                             |
| C- | $70 \leq \text{Grade} < 73$ |    |                             |

## **SENIOR PROJECT MEETINGS:**

There will be NO on-campus meetings during the month of January during the Senior Project, although there will be a large-scale programming assignment assigned during this time.

# Advanced Placement Computer Science Personal Point Agreement

I, \_\_\_\_\_, understand that at the beginning of each semester I will receive 100 personal points, which is part of my total point total for the semester. I will be able to maintain my 100 points of “personal points” unless the any one of the following rules are violated:

**Please initial each violation in the left hand margin  
as they are read in class.**

1. BE A NICE GUY – Do NOT disrupt class (not taking notes, talking during lectures, horseplaying in lab, eating/drinking in class, inappropriate language, etc.)
2. BE A GOOD STUDENT – Bring all class supplies to class (book, notebooks, pencil, pen, calculator, or NOT bubbling in name on scantrons for tests and quizzes, usage of electronic devices for non-physics purposes, sleeping in class, using bathroom during class\*, getting water during class\*\*.)
3. BE A NEAT PERSON – Do NOT leave trash in your area, pick up any existing trash in your area, place all lab equipment back in its original location, place computers back into laptop cart and plug in power adapters when you are done using the computer.)

\*Each student will be allotted two “bathroom passes” per semester.

\*\* Each student may bring a bottle of “pure, non-flavored” water to class to drink in classroom area.

The first violation of these rules will result in a 10 point deduction from your “personal point” total. Each successive violation will result in a deduction of points in a geometric fashion (i.e. second violation = -20 points, third violation = -40 points, fourth violation = - 80 points, fifth violation = - 160 points...).

It is therefore possible to have a negative “personal point” total which will be averaged in to your point total for the semester (i.e. severely damage your grade).

I completely understand the above violations and rules for point deductions.

Name: (print) \_\_\_\_\_

Name: (sign) \_\_\_\_\_

Date: \_\_\_\_\_