AP Computer Science A Syllabus

1. Introduction to AP\* Computer Science A
   1. AP\* Computer Science Introduction
   2. Downloading the Software
2. Computer Basics
   1. Introduction to Computers
   2. Numerical Systems
3. Java Basics
   1. Problem Set #1
   2. Print Statement
   3. Variables
   4. Comments
   5. Arithmetic Operators
   6. Escape Sequences
   7. Concatenation
   8. Input & Output
   9. Casting
   10. Introduction to Methods
   11. Section Overview
   12. Problem Set #1 Answers
   13. Exam #1
4. Expressions, Operators, and Control Structures
   1. Problem Set #2
   2. Relational Operators
   3. Logical Operators
   4. Short-Circuit Logical Operators
   5. Assignment Operators
   6. Increment and Decrement Operators
   7. Operator Precedence
   8. If - else statement
   9. While Loops
   10. For Loops
   11. Problem Set #2 Answers
   12. Exam #2
5. Introduction to Object-Oriented Programming
6. Methods, Classes, and Objects
   1. Section Overview
   2. Warning
   3. Methods, Classes, and Objects Introduction
   4. Objects
   5. Classes
   6. Public, Private, and Static
   7. Methods
   8. Scope
   9. References
   10. Exam #4
7. Important Classes
   1. The Object Class
      1. equals Method
      2. compareTo Method
   2. The String Class
   3. Wrapper Classes
   4. The Math Class
   5. Exam #5
8. Arrays and Arraylists
   1. Problem Set #3
   2. 1D Arrays
   3. Traversing 1D Arrays
      1. for -each loop
   4. Standard Algorithms w/ 1D Arrays
   5. 2D Arrays
      1. Include how to traverse through them
   6. ArrayList & ArrayList Methods
   7. Standard Algorithms w/ ArrayLists
   8. Problem Set #3 Answers
   9. Exam #2
9. Searching & Sorting
   1. Searching
   2. Sorting
   3. Exam #8
10. Inheritance & Polymorphism
    1. Creating Superclasses and Subclasses
    2. Writing Constructors for Subclasses
    3. Overriding Methods
    4. super Keyword
    5. Creating References Using Inheritance Hierarchies
    6. Polymorphism
    7. Abstract Classes
    8. Interfaces
    9. Exam #6
11. Recursion
    1. Recursion
    2. Fibonacci Sequence
    3. Recursive Searching & Sorting
    4. Exam #7
12. Exceptions
    1. ArithmeticException
    2. NullPointerException
    3. IndexOutOfBoundsException
    4. ArrayIndexOutOfBoundsException
    5. IllegalArgumentException
    6. Exam #9
13. AP Exam Preparation
    1. Multiple Choice Section
    2. Free Response Section
14. After AP Exam