AP® Computer Science A (APCS)

James Madison High School - Career & Technical Education
Course Syllabus and Guidelines- 2016-2017

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I.   Class Overview

Recommended Prerequisite: Algebra I.
This course is recommended for students in Grades 9-12.

> The necessary prerequisites for entering the AP Computer Science A course include knowledge of basic algebra and experience in problem solving. A student in the AP Computer Science A course should be comfortable with functions and the concepts found in the uses of functional notation, such as `f(x) = x + 2` and `f(x) = g(h(x))`. A computer science course builds upon a foundation of mathematical reasoning that should be acquired before attempting such a course.

II.   Textbooks and Materials

Texts: Lewis, J., Loftus, W., Cocking, C. *Java™ Software Solutions for AP Computer Science* 3rd Ed. Boston, MA: Pearson Ed. Inc.: 2011.

Schram, Leon. *Exposure Java 2011*. Royse City, TX: Leon Schram, 2011.
http://www.schram.org

College Board. *AP Case Study*. New York: College Entrance Examination Board, 2006.
http://apcentral.collegeboard.com

Schram, Leon. *Multiple Choice & Free Response Questions In Preparation For The AP Computer Science Examination* 7th Ed. New York: D&S Marketing: 2009.
http://www.dsmarketing.com

A pen drive or portable storage device, minimum of (1GB), will be required for saving projects.

III.   Course Description

> The AP Computer Science A course is an introductory course in computer science.
> Because the design and implementation of computer programs to solve problems involve skills that are fundamental to the study of computer science, a large part of the course is built around the development of computer programs that correctly solve a given problem. These programs should be understandable, adaptable, and, when appropriate, reusable. At the same time, the design and implementation of computer programs is used as a context for introducing other important aspects of computer science, including the development and analysis of algorithms, the development and use of fundamental data structures, the study of standard algorithms and typical applications, and the use of logic and formal methods. In addition, the responsible use of these systems is an integral part of the course.

IV.   Syllabus at a Glance

General Topics	Week
Introduction to Computer Systems	1-2
Objects and Java Primitive Data Types	3-4
Program Statements – Conditional	5-6
Program Statements – Iteration	7-9
Writing Classes	10-12
Enhancing Classes	13-15
Semester Review	16
Semester Finals	17
1D Arrays / 2D Arrays / Searching	18-21
Lists / ArrayLists / Selection and Insertion Sorts	22-24
Inheritance	25-27
Recursion / Merge and Quick Sorts	28-30
AP Test Practice Exam / AP Review	31-33
Ethical and Social Implications of Computer Use; AP Examination	34
Post-AP Project – RoboCode	35-37
Semester Finals	38

V.   Course Outline

Java SS, Ch. 1.3-1.5
Exposure Java, Ch. 1
http://www.computerhope.com/history/

Week 1-2

Computer Systems

Numerical representations; limitations of finite
representations; number bases and conversion; hardware
(primary and secondary memory); programming
languages; and language interpreters and compilers.

- Reading: *Java Software Solutions,* sections 1.0
  (Digital Computers and Binary Numbers only), 1.1
  (Main Memory and Secondary Memory only), 1.3-
  1.4; Summary of Key Concepts (redacted).
- Exercises: *Java Software Solutions,* Self-Review
  Questions 1.3-1.5, 1.7, 1.15-1.17.
- Exercises: Syntax Index Cards for Java
  applications.
- Exercises: Base Conversion and Java Error
  Messages Worksheets. **[CR1]**
- Lab: *Java Software Solutions,* Programming
  Project 1.1. (Implement and test a simple
  application program.)
- Lab: *Java Software Solutions,* Programming
  Project 1.2. (Test a simple application program
  after introducing specific errors.)
- Review: Clicker Questions – *Java Software
  Solutions,* Multiple Choice 1.1-1.8; True/False 1.1,
  1.5, 1.7-1.10
- Test: Multiple Choice Exam.

Evaluations

Objective Quizzes/Exercises

Lab Assignment
This is a general computer information chapter
without program language information. There is no
lab assignment yet.

M.C. Chapter test

CR1— The course teaches students
to design and implement computer-
based solutions to problems.

Week 3-4

Java SS, Ch. 2.0-2.7
Exposure Java, Ch. 2
http://www.jcreator.com/
http://java.sun.com/javase/downloads/index.jsp

Objects & Primitive Data

Simple data types (`int`, `boolean`, `double`, `char`); declarations (variable and constant); assignment and arithmetic expressions; console output (`System.out.print/println`); primitive types vs. objects; using classes to create objects; references; Java library classes (`String`, `Integer`, `Double`, `Math`, `Scanner`); and creating random numbers. **[CR5]**

- Reading: Java Software Solutions, sections 2.0-2.5, 2.7 (except Autoboxing), 2.8 (except The Random Class), 2.9; and Summary of Key Concepts (redacted).
- Exercises: Java Software Solutions, Self-Review Questions 2.1-2.14, 2.16-2.20.
- Exercises: Syntax Index Cards for types, constants (literals and symbolic), declaration, assignment, and concatenation.
- Exercises: Declaration, Assignment, and Arithmetic Expression Worksheets.
- Lab: Pretty Print – Implement and test a program to print a table using escape sequences. [CR1]
- Lab: Base Convert – Implement and test a program to convert numbers from base 10 to 4-digit numbers in a chosen base 2-9. [CR1]
- Review: Clicker Questions – Java Software Solutions, Multiple Choice 2.1-2.10; True/False 2.1-2.7; AP-Style Multiple Choice 2.1-2.3.
- Test: Multiple Choice Exam.

Evaluations

Objective Quizzes/Exercises

Lab Assignment   **Copy, Compile and Execute**
Copy a short, provided, application program to demonstrate compile/execute skills

M.C. Chapter test

CR5— The course teaches students to use elements of the standard Java library from the AP Java subset in Appendix A of the AP Computer Science A Course Description.

Week 5-6

Java SS, Ch. 3.0 - 3.10
Exposure Java, Ch. 3
http://java.sun.com/docs/books/tutorial/java/nutsandbolt s/datatypes.html

Program Statements – Conditional

Software Development Process; control flow (sequential and conditional); Boolean expressions, laws, and truth tables; using conditional expressions in `if, if-else`, and nested `if` statements; and `More` operators (increment, decrement, compound assignment).

- Reading: Java Software Solutions, sections 3.0-3.4; Summary of Key Concepts (redacted).
- Reading: Magpie Introduction and Activities 1-4 (APCS A Labs).
- Exercises: Java Software Solutions, Self-Review Questions 3.1-3.11.
- Exercises: Syntax Index Cards for if statements.
- Exercises: Boolean Expression and Decision Making Statement Worksheets.
- Lab: Java Software Solutions, Programming Project 3.2 – Design, implement, and test a program that determines if a given year is a leap year. [CR1]
- Lab: Magpie Activities 1-4 (APCS A Labs). [CR4]
- Review: Clicker Questions – Java Software Solutions, Multiple Choice 3.1-3.3, 3.9, 3.10; True/False 3.1-3.6, 3.8-3.9; AP-Style Multiple Choice 3.2, 3.6.
- Test: Multiple Choice Exam.

CR1— The course teaches students to design and implement computer-based solutions to problems.

CR4— The course teaches students to code fluently in an object-oriented paradigm using the programming language Java.

Evaluations

Objective Quizzes/Exercises

Lab Assignment **Inches to Miles** or **Milliseconds to Hours**
Write a program that converts a number of inches to miles, yards, feet and inches.
Write a program that converts a number of milli-seconds to hours, minutes, seconds and milli-seconds.
GridWorld Lab 01

M.C. Chapter test

Week 7-9

Java SS, Ch. 3.5 – 3.13
Exposure Java, Ch. 4
http://java.sun.com/docs/books/tutorial/java/javaOO
        /classvars.html

Program Statements – Iteration

Flow of control (iteration); using `while` and `for` statements; infinite and nested loops; and analysis of algorithms (informal comparisons of running times and exact calculation of statement execution counts). **[CR3]**

- Reading: Java Software Solutions, sections 3.5, 3.7 (expect Iterators and For Loops); Summary of Key Concepts (redacted).
- Exercises: Java Software Solutions, Self-Review Questions 3.12-3.13
- Exercises: Syntax Index Cards for while, and for statements.
- Exercises: Loop Worksheets.
- Lab: Java Software Solutions, Programming Project 3.6 – Design, implement, and test a program to count odd/even/zero digits. [CR1]
- Lab: Java Software Solutions, Programming Project 3.10 – Design, implement, and test a hi-lo guessing game program. [CR1]
- Lab: Java Software Solutions, Programming Project 3.12 – Design, implement, and test a program that prints two-dimensional patterns of asterisks. [CR1]
- Lab: Java Software Solutions, Programming Project 3.14 – Design, implement, and test a program that plays a Rock Paper Scissors game with the user. [CR1]
- Review: Clicker Questions – Java Software Solutions, Multiple Choice 3.4-3.8; True/False 3.7; AP-Style Multiple Choice 3.1, 3.3-3.5.
- Test: Multiple Choice Exam.

Evaluations

Objective Quizzes/Exercises

Lab Assignment   *Cube, Sphere, Triangles*
Write a program that displays a cube, sphere and triangles in an applet.

Chapter test

CR4— The course teaches students to code fluently in an object-oriented paradigm using the programming language Java.

CR3— The course teaches students to select appropriate algorithms and data structures to solve problems.

Week 10-12

Java SS, Ch. 4.0 – 4.10
Exposure Java, Chapter 5
http://www.geekinterview.com/articles/Control-
Structures.html

Writing Classes

Anatomy of classes, constructors, and methods;
declarations (class, interface, instance variable, method,
and parameter); method overloading; method
decomposition; object relationships; reasoning about
programs (assertions, pre- and post-conditions); data
abstraction and encapsulation; and designing and
implementing a class.
•   Reading: Java Software Solutions, sections 4.0-4.5;
         Summary of Key Concepts (redacted).
•   Reading: Elevens Introduction and Activity 1 (APCS
         A Labs).
•   Exercises: Java Software Solutions, Self-Review
         Questions 4.1-4.12.
•   Exercises: Syntax Index Cards for classes.
•   Lab: Elevens Activity 1 – Card Class (APCS A
         Labs). **[CR4]**
•   Lab: Pongtastic Lab – Implement, and test three
         new classes that complete an OOP Pong game.
         [CR1] See
         http://nifty.stanford.edu/2003/pong/
•   Review: Clicker Questions – Java Software
         Solutions, Multiple Choice 4.1-4.10; True/False 4.1-
         4.10; AP-Style Multiple Choice 4.1-4.6.
•   Test: Multiple Choice Exam.

Evaluations

Objective Quizzes/Exercises

Lab Assignment   Curved Straight Lines
Write a program that draws multiple straight lines in a pattern
     that displays curves.

M.C. Chapter test

CR4— The course teaches students to
code fluently in an object-oriented
paradigm using the programming
language Java.

CR1— The course teaches students to
design and implement computer-
based solutions to problems.

Week 13 - 15

Java SS, Ch. 5.0-5.10
Exposure Java, Ch. 6
http://forum.java.sun.com/thread.jspa?threadID=474112
&messageID=2196028

Enhancing Classes

References, exceptions, and class design; == vs .equals;
object parameter passing; error handling (runtime
exceptions, throwing runtime exceptions); interfaces and
abstract classes; Java library classes (Comparable and
List interfaces) **[CR5]**; and identifying reusable
components from existing code using classes and class
libraries.

- Reading: Java Software Solutions, sections 5.0-5.3
  (except Iterator and ListIterator Interfaces);
  Summary of Key Concepts (redacted).
- Exercises: Java Software Solutions, Self-Review
  Questions 5.1-5.6.
- Exercises: Parameter Passing Worksheet.
- Lab: Java Software Solutions, Programming Project
  5.2 – Modify an existing Rational class to change
  its definition of equals and to make it
  Comparable; test the modified Rational class.
  [CR1]
- Lab: Java Software Solutions, Programming Project
  5.6 – Design and implement a Lockable interface;
  modify a Coin class to make it Lockable; test the
  modified Coin class. **[CR1]**
- Review: Clicker Questions – Java Software
  Solutions, Multiple Choice 5.1-5.10; True/False 5.1-
  5.10; AP-Style Multiple Choice 5.1-5.6.
- Test: Multiple Choice Exam.

Evaluations

Objective quizzes/exercises

Lab Assignment
Write a program that displays random lines, random squares and
random ovals with random colors.

M.C. Chapter test

CR5— The course teaches students to
use elements of the standard Java
library from the AP Java subset in
Appendix A of the AP Computer
Science A Course Description.

CR1— The course teaches students to
design and implement computer-
based solutions to problems.

Week 16

Semester Review

Week 17

Semester Exam

Week 18-21

Java SS, Ch. 4.1, 4.5-4.6
Exposure Java, Ch. 8
http://java.sun.com/docs/books/tutorial/java/concepts/

1D Arrays / 2D arrays / Searching [CR2a] [CR2b]

One- and two-dimensional arrays (creation, insertions, deletions, traversals, algorithms); searching algorithms and comparison (sequential and binary); and choosing appropriate data representation and algorithms.

- Reading: Java Software Solutions, sections 6.0-6.2, 6.6; Summary of Key Concepts (redacted).
- Reading: PictureLab Introduction and Activities 1-9 (APCS A Labs).
- Reading: CodingBat Java Arrays and Loops at http://codingbat.com/ doc/java-array-loops.html.
- Exercises: Java Software Solutions, Self-Review Questions 6.1-6.9.
- Exercises: Array Worksheets.
- Exercises: Create Working Solutions for 10 CodingBat Array-2 Problems at http://codingbat.com/java/Array-2.
- Lab: Java Software Solutions, Programming Project 6.4 – Design, implement, and test a program that inputs integers and produces a histogram. **[CR1]**
- Lab: Picture Lab Activities 1-9 (APCS A Labs). **[CR4]**
- Review: Clicker Questions – Java Software Solutions, Multiple Choice 6.1-6.5, 6.8; True/False 6.1-6.7; AP-Style Multiple Choice 6.1-6.5.
- Test: Multiple Choice Exam.

CR2a— The course teaches students to use and implement commonly used algorithms.

CR2b— The course teaches students to use commonly used data structures.

CR1— The course teaches students to design and implement computer-based solutions to problems.

CR4— The course teaches students to code fluently in an object-oriented paradigm using the programming language Java.

Evaluations

Objective exercises
Objective quiz and free response quiz
The chapter finishes with 25 programs that make mistakes with using methods and parameters.
For each program students need to identify the problem and offer a solution.

Lab Assignment   *The Rational Class*
Write a program that performs arithmetic operations with rational numbers. A rational number can be represented as a/b where a and b are integers and b is non-zero. A Rational class needs to be designed and implemented so as to perform each one of the binary operations. Additionally, the Rational class needs a computeGFC method that will be used to represent the final fraction in reduced format.

M.C. Chapter test

Week 22-24

Java SS, Ch. 6.0 – 6.12
Exposure Java, Ch. 9
http://en.wikipedia.org/wiki/Inheritance_(
computer_science)

Lists / ArrayLists / Selection and Insertion Sorts

`Lists` and `ArrayLists` (creation, insertions, deletions, traversals, algorithms); **[CR2b] [CR5]** sorting algorithms and comparison (selection and insertion) **[CR2a] [CR3]**; and choosing appropriate data representation and algorithms. **[CR3]**
•   Reading: Java Software Solutions, sections 6.3-6.4, 6.7; Summary of Key Concepts (redacted).
•   Reading: Elevens Activities 2-4 (APCS A Labs).
•   Exercises: Java Software Solutions, Self-Review Questions 6.10, 6.12.
•   Exercises: List/ArrayList Worksheets.
•   Lab: Elevens Activities 2-4 – Deck Class (APCS A Labs). **[CR4]**
•   Review: List Algorithms Worksheet.
•   Test: Multiple Choice Exam.

CR4— The course teaches students to code fluently in an object-oriented paradigm using the programming language Java.

CR2b— The course teaches students to use commonly used data structures.

CR5— The course teaches students to use elements of the standard Java library from the AP Java subset in Appendix A of the AP Computer Science A Course Description.

Evaluations

Objective exercises
Objective quiz and free response quiz

Lab Assignment   *Open Ended Inheritance/Composition Graphics Program*
Write a graphics program that displays both inheritance and composition. The program is open-ended, because there is no required output shown. The program needs to be in the style of the *JackO'lantern* class which **is-a** *Pumpkin* and **has-a** *Face*. This lab assignment is done with three or four students working together as a team.

M.C. Chapter test

Week 25-27

Java SS, Ch. 7.0 – 7.12
Exposure Java, Ch. 10
D&S Marketing, APCS Exam Prep, Chapter 2, Boolean
    Algebra
http://en.wikipedia.org/wiki/Boolean_algebra

Inheritance

Inheritance (subclasses, overriding, hierarchies, using class members, polymorphism, and class hierarchy design); interfaces and abstract classes; Java library classes (`Object`) **[CR5]**; reading and understanding class specifications and relationships among classes ("is-a" and "has-a"); understanding and implementing a given class hierarchy; extending a given class using inheritance; and applying functional decomposition.

*   Reading: Java Software Solutions, sections 7.0-7.7; Summary of Key Concepts (redacted).
*   Reading: Elevens Activities 6-9 (APCS A Labs). [CR4]
*   Exercises: Java Software Solutions, Self-Review Questions 7.1-7.12.
*   Lab: Elevens Activities 6-9 – Board and `AbstractBoard` Classes (APCS A Labs).
*   Review: Clicker Questions – Java Software Solutions, Multiple Choice 7.1-10; True/False 7.1-10; AP-Style Multiple Choice 7.1-7.6.
*   Test: Multiple Choice Exam.

<u>Evaluations</u>

Objective Quizzes/Exercises
Quiz on D&S Marketing, APCS Exam Prep, Chapter 2

Lab Assignment
This a mathematical chapter designed to help students design program that use compound conditions in control structures. There is no lab assignment.

M.C. Chapter test

CR5— The course teaches students to use elements of the standard Java library from the AP Java subset in Appendix A of the AP Computer Science A Course Description.

Week 28-30

Java SS, Ch. 8.0 – 8.10
Exposure Java, Ch. 11
D&S Marketing, APCS Exam Prep, Chapter 1, Control Structures
http://java.sun.com/docs/books/tutorial/java/nutsandbolts/expressions.html

Recursion / Merge and Quick Sorts

Recursive thinking, programming, and sorting; flow of control (recursion); sorting algorithms (merge **[CR2a]** and quick) and comparison with other sorts. **[CR3]**

•   Reading: Java Software Solutions, sections 8.0-8.3; Summary of Key Concepts (redacted).
•   Exercises: Java Software Solutions, Self-Review Questions 8.1-8.9
•   Exercises: Tracing Recursion Worksheet.
•   Lab: Numbrix – Implement and test an OOP recursive program which solves Numbrix puzzles. **[CR1]** See http://www.parade.com/numbrix
•   Review: Clicker Questions – Java Software Solutions, Multiple Choice 8.1-8.10; True/False 8.1-8.10; AP-Style Multiple Choice 8.1-8.6.
•   Test: Multiple Choice Exam.

Evaluations

Objective exercises
Objective quiz and free response quiz
Quiz on D&S Marketing, APCS Exam Prep, Chapter 1

Lab Assignment   *Watch What You Borrow Program*
Write a program that enters information pertaining to loan/credit card balances, interest rates and payback time. The program then computes the amount of a monthly payment, an amortization schedule, a credit card payoff and also displays the total payments and total interest paid.

M.C. Chapter test

CR2a— The course teaches students to use and implement commonly used algorithms.

CR3— The course teaches students to select appropriate algorithms and data structures to solve problems.

CR1— The course teaches students to design and implement computer-based solutions to problems.

Week 31-33

Barron's AP Computer Science A
Exposure Java, Ch.12
D&S Marketing, APCS Exam Prep, Chapter 3, Static
  Arrays
http://www.janeg.ca/scjp/lang/arrays.html

AP Test Practice Exam / AP Review
AP Computer Science A Examination (practice, content, materials, timing, tips).

•   Reading: Barron's AP Computer Science A, Chapters 1-8.
•   Exercises: Barron's AP Computer Science A, Chapters 1-8 MultipleChoice Questions.
•   Exercises: Create Working Solutions for all 21 CodingBat AP-1. Problems at http://codingbat.com/java/AP-1
•   Test: AP Practice Examination.
•   Quizzes: Daily 3-4 question multiple-choice quizzes (questions from Barron's AP Computer Science A, Multiple-Choice Questions).

Evaluations

Objective Quizzes/Exercises
Quiz on D&S Marketing, APCS Exam Prep, Chapter 3

Lab Assignment *Sieve of Erasthenes* and *Graphics Sorting*
Write a program that computes prime number using the "Sieve of Erasthenes."
Write a program that generates random rectangles, which are displayed on half the screen.
Magic square assignment.

M.C. Chapter test

Week 34

Java SS, Ch. 5.1, 5.3, 6.7, 9.0 - 9.1
Exposure Java, Ch.13
D&S Marketing, APCS Exam Prep, Chapter 6,
ArrayList Class
http://java.sun.com/docs/books/tutorial/collections
/interfaces/index.html

Ethical and Social Implications of Computer Use; AP Examination

Responsible use of computer systems (system reliability, privacy, intellectual property, legal issues, and social and ethical ramifications of computer use). **[CR7]**

•   Reading: one student-chosen chapter of Blown to Bits.
•   Assignment: Prepare a one-page summary of the chapter and participate in a classroom discussion of it. **[CR7]**

CR7— The course teaches students to recognize the ethical and social implications of computer use.

Evaluations

Objective and free response exercises
Objective and free response quizzes
Quiz on D&S Marketing, APCS Exam Prep, Chapter 6

Lab Assignment *The Student Records Program*
Repeats the Lab18 program, but now use ArrayList objects

M.C. Chapter test

Week 35-37

Java SS, Ch. 4.3 - 4.5, 5.0 -5.1, 5.3 - 5.5, 7.1
Exposure Java, Ch. 14
D&S Marketing, APCS Exam Prep, Chapter 8, OOP
http://en.wikipedia.org/wiki/Object-
      oriented_programming

Post-AP Project – RoboCode

Cooperative programming; research; reading code; and
comparing strategies and algorithms.

- Reading: Robocode website –
  http://robocode.sourceforge.net/
- Lab: RoboWarrior – Work in pairs to design,
  implement, and test a competitive Robocode robot.

Evaluations

Objective Quizzes/Exercises
Quiz on D&S Marketing, APCS Exam Prep, Chapter 8

Lab Assignment

M.C. Chapter Test

Week 38

Semester Finals

Campus Tardy Policy

Part 1: Tardy Station Sweeps will be held periodically by the administration to address students who are tardy. These students will be **issued a detention each time they are at the tardy station**. Detention must be served within a two day window, excluding Fridays. The dates(s) and location will be on the slip.

Part 2: At the sound of the bell, teachers will begin instruction. Those students entering the classroom late will be recorded as tardy minute 1-5.

Tardy Infractions	Consequence
1-3	**Warning from teacher, tardy recorded by teacher. Recommend parent contact.**
4	*Teacher **will make a phone call /contact home** to notify parent that student has received warnings and will have detention as a next step. No exemption may be awarded (refer to exemption criteria).*
5	**Classroom Detention 8:15-8:30 or 4:15-4:30** *-Teachers will issue a classroom detention.* *-Students conduct mark cannot be higher than a "S" at this step.*
6-9	**Teacher will…** *-Make parent contact.* *-Students conduct mark cannot be higher than a "N" at this step.*
10	**Teacher will…** *-Turn in a referral to the assistant principal -Conduct mark should reflect a "U"*
10+	**Repeat the process**

Mr. Williams	Dr. Joiner	Mr. Herrera	Mr. Uribe	Ms. Scott	Mr. Ramirez
A-COF	COG-GOF	GOG-LIL	LIM-PAR	PAS-SF	SG-Z

*Cumulative tardies are recorded by 9 week period. A tardy committee will meet once a month to discuss the effectiveness of the tardy policy as written and coordinate efforts to proactively encourage students to get to class on time.

Grading

Grades will be based on attendance, participation, and successful completion of various assignments, and projects throughout this course. Quizzes and tests will be given periodically to check your knowledge and skills.

Grading Guidelines	
Daily Assignments	25%
Quizzes/Tests	50%
Projects	25%
Total	100%

Grading Scale	
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	<60%

Lab Component

Programming projects will be graded on a varying scale based on difficulty from 50pt versions up to 110 pt versions. A 0 will be given for failure to turn in a programming project.

Writing computer programs is critical to understanding the course material. I assign at least one lab per unit. These assignments are typically completed on an individual basis. I use a program to randomly assign students to computers each day. This encourages collaboration among a variety of students, while at the same time discouraging copying among a few. Many students complete their lab assignments during class. I provide ample open lab time before and after school for students who need or want it.

AP Computer Science A Labs are integrated into the course at appropriate times based on their content, which account for a minimum of 20 hours of hands-on lab work (e.g., four hours on Magpie labs, six hours on PictureLab labs, and ten hours on the Elevens labs). **[CR6]** Students complete the Magpie labs to help them develop their conditional statement skills. They complete the PictureLab labs to practice two-dimensional array algorithms. I have distributed the Elevens labs across the school year to complement different portions of my object-oriented curriculum. Students complete all of the required activities of the AP Computer Science A Labs. I utilize some of the optional sections of the labs for extra credit assignments.

Late Work

A. Late work is defined as any assignment that is not submitted on the due date and class period with the exception of make-up work for absences or approved school activities.

B. A 20% deduction from the total grade earned will be taken for late assignments.

C. Late assignments will be accepted until the material has been assessed summatively or within a three week grading period.

D. Extenuating circumstances may occur that prevent the completion and turning in of assignments on the due date. It is the parent/guardian and/or student's responsibility to inform the teacher and/or an appropriate administrator of any such circumstances so that an exception to the rule may or may not be granted. The teacher and/or appropriate administrator shall have the authority to render a final decision on the granting of any exceptions.

James Madison High School

Career & Technical Education Department

Receipt of AP® Computer Science A (APCS) Syllabus

I have read the AP® Computer Science A (APCS) Syllabus and understand the expectations and mature behavior that are expected for students who take the course.

Student Name: _____

Student Signature: _____

Parent's Name: _____

Parent's Name: _____

Parent Signature: _____   Date: _____

Home Phone Number: _____

Mom's Cell Phone No.: _____

Dad's Cell Phone No.: _____

E-mail Address: _____

Home Address: _____

Zip Code: _____