Course: Honors AP Computer Science
Instructor: Mr. Jason A. Townsend
Email: jtownsend@parkwayschools.net

Course Description: The material for this course is the equivalent of one to two semesters of an entry level college program. The emphasis is on programming methodology, algorithms, and data structures. Object Oriented Programming will be introduced early and used often. This course will prepare students to take the AP Computer Science exam at the end of the year. The prerequisite for the course is a C or higher in Geometry A / Honors Geometry, or permission of the instructor.

Materials
Textbook: *Fundamentals of Java, Comprehensive Edition,* Lambert, Osborne.
Software: BlueJ compiler in the PC windows environment.
Notes can be taken on paper or in a Word document. Pens/Pencils should be brought to class. Portable storage devices are not required, but can be very helpful.

Grading
Grades will be comprised of short and long-term programming assignments. Other assessments will be given, the format of which is still to be determined.

Programs not turned in by the due date will result in no credit for the assignment unless previous arrangements have been made with the instructor.

Grades will be based on the following scale:
        H   96 – 100
        A   90 – 95
        B   80 – 89
        C   70 – 79
        D   60 – 69
        F   0 – 59

Grades will NOT be rounded.

Student Expectations
        -Keep a detailed set of notes.
        -Ask questions and participate in class discussions.
        -Make attendance a priority.
        -Be in class on time everyday.
        -Challenge yourself and THINK !

This is an honors class. You are expected to be creative and push yourself beyond your comfort level.

This is an AP course. The AP exam may be taken in May for college credit.
All students are encouraged to sign up for this exam, but they are not required for credit in this course.

There will be synchronous class time every day unless otherwise noted by the instructor. Most days there will also be asynchronous requirements and homework.

Attendance Policy
(In Person)
In the event of an excused absence, students may make up any missed homework, quizzes, and tests. Students will have five school days starting from the day of return to complete any missed items. Anything not made up in the given time frame will be counted as a zero. In the event of an extended absence (3 or more consecutive days) the student will work out a timetable with the teacher. Failure to do so will result in loss of points for the missed work. Any assignments, quizzes, or tests missed due to an unexcused absence will also be counted as zeros. This is the responsibility of the student, there will be no exceptions.

(Virtual)
Students will log in each day, on-time to the virtual meeting. In the event of illness or other type of absence, the instructor should be notified in advance. It is the responsibility of the student to obtain all information and materials from the missed synchronous session.

Classroom Guidelines
(In Person)
You will come to class on time. Two tardies per semester will be excused. On the third and any subsequent infractions, there will be consequences at the discretion of the instructor.

Other than a calculator, no electronic devices should be seen or heard in the classroom. Headphones and games should be put away before entering the room. Phones will be checked in before class and may be picked up at the end of the hour.

We will be meeting via Google and/or Zoom. Students should be on camera at all times. Microphones should be muted unless called upon by the instructor. Comments and questions can be submitted via the chat options. Students should be dressed school appropriate. Any backgrounds used should be generic and school appropriate.

Student Resources

Group Q & A: Tuesday and Thursdays from 2:30 – 3:30
Individual Appointments Available (20 minute blocks): Daily 7:30 – 9:30.
Student Support Block: Wednesdays from 11:30 – 12:25

There will be a weekly discussion board for all students and the instructor to use.
Individual questions can also be sent via email to jtownsend@parkwayschools.net

Semester 1 Outline

Unit 1: Java Basics
- Background Information
- Basic Program Elements
- Java Syntax and Arithmetic
- Number Systems
- Input and Output
- Programming Errors

Unit 2: Control Structures
- Operators and Random Numbers
- If and If / Else Statements
- The For Loop
- The While and Do / While Loops
- Text Files
- Boolean Logic
- Nested Control Structures

Unit 3: Introduction to Defining Classes
- Class Structure
- Objects
- Using Classes
- Structure and Behavior of Methods
- Scope and Lifetime of Variables

Unit 4: Introduction to Arrays
- Concept of an Array
- Declaring and Using Arrays
- Two Dimensional Arrays
- Enhanced For Loops
- Arrays and Methods
- Arrays of Objects