Syllabus: Computer Science Principles (Pilot)

For the 2011-2012 School Year

Contact Information

Dr. Torbert: Room 115, 6560 Braddock Road, Alexandria, VA 22312
smtorbert@fcps.edu, Tel 703-750-8338, Fax 703-750-5010

Mr. S. Rose: Room 236, 6560 Braddock Road, Alexandria, VA 22312
srrose@fcps.edu, Tel 703-750-8300, Fax 703-750-5010

Course Description

For the standard course: "Students are introduced to the academic discipline of computer science with emphasis on problem solving using the current College Board computer language. At this time, the language is Java. The course introduces Object Oriented Programming (OOP) and uses an Objects first approach. Skills in defining, writing, and running computer programs on a windows based networked personal computer are developed. Students work with both mathematical and non-mathematical problems. Students will also be introduced to computer graphics, Graphical User Interfaces (GUI), data storage and data processing, boolean algebra, and computer number systems. No prior computer knowledge is needed. This course is usually offered during summer school and as summer self-study for those students who wish to place out of this introductory course and begin their computer science studies with Advanced Placement Computer Science."

For the pilot: The programming language is Python. No prior experience is assumed. Software for home-use is available for free at www.python.org which is linked from the course website. (Download 2.7, not 3.) This course is experimental in nature and is related to a new NSF/College Board project called "CS Principles." More information about the national effort can be found at www.csprinciples.org which is also linked from the course website.

Grading

Your grade for the year will be determined as follows:

Grade Event	Points	Quantity	Total
Quarter Grade Final Percentage Earned	100	4	400
Class Participation Appropriate Behavior	40	1	40
TOTAL POINTS	–	–	440

There is no final exam. The class participation grade will appear on your report card as the final exam grade for the course and is earned over all four quarters. On the last day of each quarter there will be an in-class culminating activity.

Each quarter grade will be determined as follows:

Grade Event	Points	Quantity	Total
Program Turn-In Lab Write-Up	5	10	50
In-Class Closed Book Quiz	10	5	50
Last-Day Culminating Activity	5	1	5
TOTAL QUARTER POINTS	–	–	105

The current FCPS grading scale:

Letter Grade	Quality Points	Half-Open Percentage Intervals	
		$\geq$	$<$
A	4.0	92.5	$100+\epsilon$
A-	3.7	89.5	92.5
B+	3.3	86.5	89.5
B	3.0	82.5	86.5
B-	2.7	79.5	82.5
C+	2.3	76.5	79.5
C	2.0	72.5	76.5
C-	1.7	69.5	72.5
D+	1.3	66.5	69.5
D	1.0	64.0	66.5
F	0.0	0.0	64.0

There is no extra credit.

All quiz topics are unannounced and there is no formal review session prior to a quiz.

In the case of unplanned absences, students should make arrangements for any necessary makeup immediately upon return to school. For each class absence, students have one class session for makeup. No extension is provided for new work assigned after the student has already returned to school. For an approved prearranged absence, it is the student's responsibility to make arrangements in advance of the absence.

For program turn-in lab write-ups a paper copy must be submitted by the time buses leave. No email. The location for submissions will be clearly indicated and if all else fails use the mailboxes in the main office. There is a grace period of two school days following all due dates except at the end of the quarter. After the grace period ends, late work may be turned in by the end of the next school day (even if our class does not meet that day) with a penalty of one point, or on subsequent days with a cummulative penalty of one point per calendar day. The total penalty will not exceed five points but all assignments must be turned in by 8 AM on the first teacher workday after the quarter to receive any credit.

Textbook

The textbook is Schneider and Gersting, <u>An Invitation to Computer Science</u>, 5th edition. The ISBN is 0-32-478859-2 and the cost is $139.95. The course will use this book for supplemental material only.

Website

All course materials are posted at www.tjhsst.edu/compsci/cspilot and no login is required.

Lab Hours

Lab 115 is generally open before school, during lunch, and eighth period. You can also connect to remote.tjhsst.edu using ssh or PuTTY, and transfer files using sftp or WinSCP.

Lab 232A is generally open during eighth period, or at least one of the other Math/CS labs will be. You can also access and transfer your files using TJ's Intranet.

Fire Drills

Lab 115, Exit via the back door of the lab. This leads directly to the outside. Bear left toward the fenceline on the side of the school to avoid the people coming out of the trailers.

Upstairs, Exit the room or lab and head down the back stairs to leave the building. Continue walking all the way across to the other side of the road.

Crisis Situations

"Secure the Building": neighborhood incident, students in rooms with doors locked.
"Lockdown": threat on property, students on floor with lights out and blinds pulled.

Computer Ethics

All students are expected to comply with the Fairfax County Network User Guidelines and an easy way to do this is to be engaged exclusively on work for this class at all times.

Other Guidelines

All students are expected to adhere to the TJ Honor Code and the FCPS Dress Code. This class encourages collaboration and sharing which means talking together about a lab assignment. Plagiarism is copying another person's work and presenting it as your own.

Repeated or one-time grossly unacceptable behavior will be reported to the guidance department, the administration, and your parents.

Schedule

September	Simulation
October	User Interaction
November	Graphics
December	Visualization
January	Efficiency
February	Fractal Geometry
March	Recursion
April	Classes and Objects
May	Projects
June	Java for AP (optional)