

ATYP AP Computer Science

2009-2010

Instructor: Dr. Kelly Schultz phone: 324-0546 (home)
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Text: *Java Concepts, Cay Horstmann, Wiley 2005 (provided)*
Optional Book to help prepare for the AP exam – Advanced Placement CS Study Guide to Accompany Cay Horstmann’s Java Concepts, by Frances P. Trees, Wiley 2006, ISBN 0-471-71861-0 (not provided)

Goals: Students in this course will learn to

- Design and implement computer-based solutions to problems in a variety of contexts
- Select and develop appropriate algorithms and data structures to solve problems
- Be familiar with the AP subset of the Java programming language and to code fluently with it.
- Read and understand a large program like the AP Case Study Grid World
- Identify the components of the hardware & software of a computer and describe their functions & relationships
- Recognize the social and ethical implications of computer use

Class: *Mondays and Wednesdays*
2 – 3 pm in 1231 Trimpe Hall, 3 – 3:50 pm in 1505 Wood Hall

We will spend the first portion of class in the classroom where we will discuss the topic of the day. Then will walk to the lab together as a class to work on the computers until 3:50 pm.

Grading Policies: Discussion problems will be assigned each week. They should be done by Wednesday of that week. We will discuss these in class but they will not be turned in. You do not need to write up solutions to all problems but be able to answer each question if called on. Each week at least one computer based assignment will be due. These may have to be worked on at home so you should have access to a computer with Java loaded on it. BlueJ is the programming environment we will be using in lab – you may download it free from <http://bluej.org/download/download.html>. There will be 4 exams during the course of the year. The typical grading scale will apply (90-100% is an A, 80 – 89% is a B, etc.).

AP Exam: All students are expected to take the AP exam. The fee for the exam is paid for by the ATYP program. The AP exam will be held at Lee Honors College on Tuesday, May 4, 2010 in the morning. Details will be sent home closer to the exam.

Please let me know if you are having any problems with this course. Difficulties are easier dealt with early before they turn into a mountain! Let me know how you are doing! Phone calls are welcome at any time from both students and parents.

Schedule:

Wk	Dates	Topic	Reading	Labs/PP	DQ
1	Sep 14 & 16	Simple Java Statements, Introduction to Objects	Chapter 1	Create program, Banner PP	R1.2, R1.11, R1.12
2	Sep 21 & 23	Using Objects	2.1-2.2	GridWorld API P2.7, P2.8 Grid Project	R2.4, R2.5, R2.6,
3	Sep 28 & 30	Introduction to Methods	3.1-3.2,	Creating Fish,	R3.7, R3.8, R3.10
4	Oct 5 & 7	Introduction to Classes	4.1-4.4	Adding Features	R4.2, R4.6, R4.7
5	Oct 12 & 14	Selection Statements; Conditionals	6.1-6.2	Talking Robot	R6.7
6	Oct 19 & 21	More on Conditionals	6.3-6.4	Talking Robot PP	R6.1, R6.6, R6.9, R6.17
7	Oct 26 & 28	Loops	7.1-7.2	Moving Fish,	R7.2, R7.3
8	Nov 2 & 4	More on Loops	7.3-7.5	Histograms	R7.4, R7.7
9	Nov 9 & 11	Array Lists	8.2 – 8.4	More Fish	R8.11, R8.12
10	Nov 16 & 18	Arrays and Algorithms	8.1, 8.5	Histogram PP	R8.3, R8.5, R8.7, R8.9, R8.17 a-d, i
	Nov 23 & 25	No Class			Thanksgiving Week
11	Nov 30 & Dec 1	Repetition and Object Use Review	Practice Exam	Grid Plotter	Object and Loop Homework Repetition Practice
12	Dec 6 & 8	Implementing Classes	2.3-2.7, 3.3-3.8	Grid Plotter PP	R2.8, R2.10, R3.1, R3.2
13	Dec 13 & 15	Design	19.6, 19.7, Test #1	Fish with Class	Repetition Practice part 2
	Dec 16 – Jan 4	No Class			Winter Break

Student Grader: Matthew Weaver

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743-9130

Tutor Hours are Sundays from 5-7 pm in the Resource Room behind the Student Lounge at the Lee Honors College beginning Sunday, September 20. Computers are available in the room to work on.