

## ATYP AP Computer Science

2024

Instructor: Dr. Kelly Schultz phone: 269-387-3553 (work)  
email: Kelly.schultz@wmich.edu 269-760-4333 (cell)

Text: *Java Concepts, Cay Horstmann, 5<sup>th</sup> edition, Wiley 2008 (provided)*  
*A 2 gig or bigger flash drive to store your programs and software for the class is required.*  
Optional book to help prepare for the AP exam – *5 Steps to a 5 – AP Computer Science A 2024* by Klipp, Johnson, Paymer, McGraw Hill, ISBN 978-1265284220 (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
- Read and understand programs already created as well as modify those programs to enhance their functionality
- Be familiar with the AP subset of the Java programming language and to code fluently with it
- 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 in 2320 Sangren Hall*

Grading Policies: Discussion problems will be assigned each week. They should be done by Wednesday of that week. Most weeks, we will discuss these in class but some weeks they will 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. You should have access to a computer with Java and BlueJ loaded on it – you may download them free from <http://bluej.org>. There will be 2 exams during the year. The typical grading scale will apply (90-100% is an A, 80 – 89% is a B, etc.). Students will submit all work to E-learning.wmich.edu so students must know their GoWMU login and password.

AP Exam: AP Exam: All students are expected to take the AP exam. The AP exam will be given on **Wednesday, May 8, at 12 noon on campus**. More details will be sent home as the date approaches.

*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 (we will have a practice AP Test on Saturday, April 13 at 9 am):

Wk	Dates	Topic	Reading	Labs/PP	DQ
17	Jan 17	Inheritance	MBS Intro 10.1-10.2	MBS Intro, Demo 1, Demo 2	MBS Intro Analysis Questions
1	Jan 22 & 24	Inheritance	10.3-10.5, MBS	MBS part 1	R10.4, R10.5
2	Jan 29 & 31	Inheritance	10.6, MBS	MBS part 2	R10.6, R10.7
3	Feb 5 & 7	Inheritance	10.7, 10.8	MBS PP	R10.10
4	Feb 12 & 14	Testing/Debugging	3.6T, 5.5T, 7.8T, 8.10T 6.6T-6.7T	Percolation Lab	R5.19, R5.20, R5. 21
5	Feb 19 & 21	Designing Classes Abstract Classes*	8.1 -8.5, Adv Tpc 10.1*	Percolation PP	R8.1, R8.11, R8.15, R8.19
6	Feb 26 & 28	Designing Classes	12.1-12.3	Theater Seating Chart Lab	R12.3, R12.4, R12.6
7	Mar 4 & 6	Recursion, Static & Scope	8.6-8.9 13.1-13.4	Class Design Lab Recursion Lab	Recursion and ChessPiece Questions in eLearning
8	Mar 11 & 13	Computer Hardware	Online	CPU Simulator Lab	R8.20, R8.28 Practice Test
9	Mar 18 & 20	GUIs	2.11G-2.13G 9.6G-9.8G,	GUI Lab	<b>Test #2 – March 20</b>
		<b>Spring Break</b>	<b>No Class</b>	<b>March 25 &amp; 27</b>	<b>April 1 &amp; 3</b>
10	April 8 & 10	Sorting, Big Oh/AP Practice	14.1-14.5, 14.8	Insertion Sort	R14.3, R14.5, R14.7, R14.8, R14.9, R14.10, R14.11, R14.13
	<b>Saturday, April 13</b>	AP Practice Test	9 a.m. - noon		
11	April 15 & 17	Exception Handling/AP Practice	Chapter 11	P11.14, p 454	R11.7, R11.8, R11.14, R11.15
12	April 22 & 24	Ethics and Society Issues AP Practice		TBD	
13	April 29 & May 1	Final Project Design AP Practice		Start Final Project	
14	May 6	AP Practice		<b>No Class on</b>	<b>Wed, May 8 AP Exam at noon</b>
15	May 13 & 15	Final Project			
16	May 20 & 22	Final Project			<b>Final Project Due Friday, May 31</b>

\*[http://higheredbcs.wiley.com/legacy/college/horstmann/0470105550/features\\_chapter/at\\_10\\_01.pdf](http://higheredbcs.wiley.com/legacy/college/horstmann/0470105550/features_chapter/at_10_01.pdf)