



Course Information and Overview

Course number and name: CS110 section 001, Introduction to Computer Science

CRN: 10491, 4 credits, 3 lectures, plus one lab/week)

Instructor: Mohammad J. Ahmad (MJ)

Email: mohammad.ahmad@mail.wvu.edu (Emails sent to my @mix.wvu.edu account will be ignored)

Office: 360 AERB

Office hours: Monday and Wednesday 11:15AM-12:45PM, and by appointment.

Class meets: @ MWF 1:00PM-1:50PM in ESB-E G39 or via eCampus Collaborate

Pre-requisite: MATH 126 and 128 OR Math 129 OR score of 600 Math SAT/26 Math ACT

Lab information

Labs instructor: Denny Hood

Lab instructor Email: denny.hood@mail.wvu.edu

Lab location: 137 AERB

Lab Section 002 CRN: 12055 Wednesdays from 3 PM - 5:50 PM

Lab Section 003 CRN: 10497 Thursdays from 6:30 PM - 9:20 PM.

On-Line Postings: eCampus

Course description

Introduction to computer science will introduce students to computer programming using Java. Emphasis on the fundamentals of programming concepts to gain understanding of basic knowing of programming history, skills, documentation, and techniques. The lecturer will foster an environment for theoretical discussion (no programming is done in class) which will be paired with practical implementation in the CS110 Lab.

Upon the completion of this course, still will be able to achieve the following **learning outcomes**:

1. Write, document, test, and debug computer programs using Java code at a beginner level.
2. Adopt **Pseudo code** to solve different computer programming problems and tasks.
3. Read, **trace**, explain, and analyze introductory Java programs.
4. Employ and understand the use of **arithmetic operations and expressions**.
5. Implement logical decisions using **IF statements** and **switches**.
6. Employ different **loop** techniques to implement various programming tasks.
7. Read and write data from different data sources such as **users' inputs** and **text files**.
8. Use and define **classes, objects, methods, fields**, different **data types, input/output** techniques, **looping**, and **data structures** such as arrays and multi-dimensional arrays.
9. Employ and compare different data **sorting algorithms** including bubble sort, insertion sort, selection sort and quicksort.
10. Employ **recursion** and analysis of **algorithms' time complexity** to design efficient solutions to different problems and compare several available solutions.
11. Compare and understand the differences between **object-oriented** to **procedural** programming
12. Understand the goals and **principles of software engineering** as it applies to an introductory programming language.
13. Employ the use of dialog boxes and Graphical Use Interfaces (GUI)

Strongly recommended text: Java Concepts: Early Objects by Cay Horstmann, 8th edition,

ISBN: 978-1-119-05650-8 PRINTED EDITION

OR

FROM WILEY: The interactive edition **Java Concepts: Early Objects, Interactive Edition, 8th Edition,**

ISBN: 978-1-119-14163-1. There are no assigned readings from the book, but there will be assigned readings from other online resources.

Grading

The first table shows the assessments used in this class which you are graded on and points each is worth. The second table shows the total cumulative points you could earn for your final grade in this course. The bonus points are announced during the semester which could be achieved by delivering or requirements. The quizzes are given their dates are unannounced and any quiz will receive 0 points (no makeups are offered under any circumstances).

Assessment	Count	Points	Total	Grade	Points
Quizzes 1-5	5	30	150	A	900-1000
Project 1	1	110	110	B	800-899
Labs 1-9	9	40	360	C	700-799
Quizzes 6 & 7	2	50	100	D	600-699
Project 2	1	200	200	F	<=599
Labs 10 & 11	2	40	80		
Bonus		100	100		
Total			1,100		

extra assessments in class or lab and students who miss

Students will be offered up to 12 quizzes, and the 5 lowest quizzes will be automatically dropped at the end of the semester. The 7 remaining grades total 250 points. This course will have 2 take-home individual projects. For each of the projects, the instructor releases a requirements document. A penalty of 25% per late day will be applied for projects submitted after the date. The last project should be submitted on time, no late work is accepted for that project. Quizzes will most likely be distributed as hard copy at the beginning or the end of lectures and labs, whereas projects will be posted on eCampus. The instructor will grade quizzes and projects and will deliver grades in a reasonable time. The lab instructor will grade the lab assignments and post the grades on eCampus.

Academic Integrity

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at <http://www.arc.wvu.edu/admissions/integrity.html>. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me *before* the assignment is due to discuss the matter.

Notes:

- * If you are learning, sensory, or physically disabled student, and feel you need special assistance regarding lectures, reading assignments, or testing, please contact me after class or during my office hours. The beginning of the semester is the best time to speak to me about this.
- * West Virginia University is committed to social justice. I concur with this commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our university does not discriminate based on race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious

attention.

Class Policies:

Audits: This class cannot be taken for audit credit.

- **Attendance:** In this fast-paced class, attendance is NOT REQUIRED for lectures. But you are strongly encouraged to attend. Quizzes and in-lab assignments can only be submitted in-class and labs. Students who miss either cannot take makeup quizzes or labs.
- Students are responsible for all material covered in the course, keeping track of assignments and examination dates. Attendance in lab is **REQUIRED**
- No **make-up exams** are scheduled and will be given only in case of emergency. The instructor must approve any absence from an examination. All exams will be in the regular classroom during the regular class time

- Your quizzes, projects and labs must be submitted in the expected formats by the given due dates, and any late work may be rejected without a grade except when a policy indicates otherwise. You should keep secure copies of your work in case of data loss. Ensure that your conduct in this course is appropriate. Be attentive to the instructor and work only on assigned material. **Do not arrive late or leave early without notice**. Do not converse disruptively. Treat all staff and students in a courteous and professional manner. Do not harass or be disruptive to the common morale. Do not vandalize or compromise course resources or technology. Do not foster a hostile or distracting environment. Violators are subject to similar sanctions as those for academic fraud. Studies show that students who use electronic devices during lectures and even those students who sit near them do not learn or perform as well as students who take handwritten notes free of such distractions. Therefore, **electronic devices are prohibited** in lecture sessions except for accessibility accommodations or by special permission from the instructor. Laptops, tablets, and hybrid devices are allowed in lab sessions only for course work. Phones and wearable devices must be silenced.

- **Course material** is primarily from the lectures, and readings from the assigned resources. Approximate reading assignments are included in the semester schedule. Fine-tuned reading assignments will be given in class. Regular problem assignments will be given in class. Most will be collected and graded. You will also be given programming projects throughout the semester, to illustrate the concepts covered in class.

- **Academic Dishonesty:** You are expected to work alone on quizzes, projects, and in the completion of programming problems and lab assignments. Evidence that the projects or homework were not done entirely by the student will be regarded as cheating. The first instance of cheating will result in a zero for the assignment and deduction of 50 points. The second instance of cheating will be reported to the University and will result in, minimally, an unforgivable F in the course. **This includes, but is not limited to, all the following:**
 - **Developing solutions to assignments with another student that result in identical or nearly identical solutions and that are submitted individually.**
 - **Posting homework/lab assignments online, and submitting solutions provided to you by other individuals.**

- Copying all or part of another student's solution to homework or lab assignments.
- Submitting code that you find online as your solution to a homework or lab assignment.
- Having a tutor create a solution for your homework or lab assignment.
- Bringing cheat sheets, note cards or other material to exams.
- Copying from another student's paper during an examination.
- Whispering to another student or passing paper to another student during an examination.

* **Short Laboratory assignments** will be given in lab daily/ These are expected to be completed during lab, and illustrate concepts being covered in lecture. In addition, **longer programming** projects will be released in timely manner. Congrats, if you are reading this then you are doing your job going over the syllabus. As a result, you will receive 5 points. Email me a picture of your pet if you have any (I hope it's a cat) no later than 1/17.2020, otherwise just Email me saying you read the syllabus. I encourage you not to tell other students about this secret message.

* **Due Dates:** Laboratory projects and lecture homework assignments are due on the assigned date. There is no provision for late assignments.

- All project assignments will be posted on eCampus. IT IS THE STUDENT'S RESPONSIBILITY TO CHECK ECAMPUS DAILY FOR POSTINGS.
- There is no late submission of quizzes or lab assignments.
 - Programming projects and labs that do not compile will immediately receive a 50% deduction.
- Lab assignments must be submitted to your TA, via the submission vehicle that he/she chooses, no later than midnight on the specified due date.
- Lecture Quizzes must be submitted in written form in the lecture.
- Projects and labs cannot be submitted via email.
- On ALL homework assignments you must show your work.
- Projects and lab SOLUTIONS SCRIBBLED ON A PRINTOUT OF THE ASSIGNMENT WILL NOT BE GRADED.
- No makeup is offered for missed quizzes and labs. Penalties of 25% per late day will be applied for projects submitted late.

Required software for class:

The following applications are required to have successful access and implementation of this course's content.

- Web browser: required to access eCampus and other online references.
- Internet access
- An Integrated Development Environment (IDE): Eclipse IDE is recommended and is free to [download](#). You are free to install any other IDE. All computer labs in AERB are equipped with Eclipse. I strongly encourage you to have it installed on you own machine. Instructions on how to install Eclipse will be covered in the first lab.
- Recommended: text editor, such as Microsoft Word. All WVU students are offered free [download](#) and installation.

Semester Schedule

The following schedule is the preliminary semester plan. This schedule might be modified during the semester if needed. The instructor will notify students in case of any changes.

Day and Date	Topic	Assessment
1/13/2020	Course overview and syllabus	
1/15/2020	Programming structure and binary and print	
1/17/2020	Variable and scanners	
1/20/2020	No class MLK	
1/22/2020	Arithmetic operations	
1/24/2020	Discuss project 1	Release project 1
1/27/2020	Arithmetic expressions 1/2	
1/29/2020	Arithmetic expressions 2/2	
1/31/2020	Math library	
2/3/2020	Strings	
2/5/2020	String and regular expressions	
2/7/2020	If statements	
2/10/2020	If and switches	
2/12/2020	For loops	
2/14/2020	while loops	
2/17/2020	File I/O read	
2/19/2020	File I/O write	
2/21/2020	Discuss project 2	Project 1 due.
2/24/2020	File I/O and regular Expressions	
2/26/2020	Methods 1/3	
2/28/2020	Methods 2/3	
3/2/2020	Methods 3/3	
3/4/2020	Classes 1/3	
3/6/2020	Classes 2/3	
3/9/2020	Classes 3/3	
3/11/2020	Arrays 1/2	
3/13/2020	Arrays 2/2	
3/16/2020	Spring break (no classes)	
3/18/2020	Spring break (no classes)	
3/20/2020	Spring break (no classes)	
3/23/2020	Multi-dimensional Arrays 1/2	
3/25/2020	Multi-dimensional Arrays 2/2	
3/27/2020	Discuss project 3	
3/30/2020	Online 1 st class	Release project 2
4/1/2020	Recursion	
4/3/2020	Recursion	
4/6/2020	Recursion	
4/8/2020		
4/10/2020	Sorting algorithms 1/2	
4/13/2020	Sorting algorithms 2/2	
4/15/2020	Special topics	
4/17/2020		

4/20/2020 Special topics

4/22/2020 Special topics

4/24/2020 Special topics

Project 2 due

4/27/2020

4/29/2020

5/1/2020
