Grand Valley State University
School of Computing and Information Systems
CIS 163 – Computer Science II
Winter 2020

Instructor Information

Instructor:	Dr. Erin Carrier
Office:	C-2-211 MAK
Office Hours:	Tuesdays 5:00pm – 6:00pm (Eberhard 618a - downtown)
	Wednesdays 11:00am – 12:00pm (Student Success Center)
	Fridays 2:00pm – 3:00pm (MAK C-2-211)
Phone:	331-2439
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Course Description

Programming methodology, design and analysis of algorithms, and an introduction to data structures. Examples from a wide range of computing applications will be discussed.

Prerequisite

CIS 162 (Computer Science I) – Previous students of CIS163 suggest a B or better

Course Materials

- Text Book: John Lewis, Peter DePasquale, and Joseph Chase, *Java Foundations – Introduction to Program Design & Data Structures*, 3rd, 4th edition, 5th edition Addison Wesley
- Supplemental materials on Blackboard in the "Course Documents" folder

Course Objectives

After completing the course, students will be able to:

- Develop good quality programs in Java consisting of several collaborating classes Manipulate fundamental data structures: arrays, strings, linked lists, stacks, and queues
- Solve problems using object-oriented principles (inheritance, polymorphism, abstract and interface classes, containers/collections, and iterators)
- Use UML class diagrams to represent design of object-oriented programs
- Develop graphical user interfaces and event-driven programs
- Analyze run-time performance of algorithms using Big-Oh notation
- Use an IDE (Eclipse/NetBeans/IntelliJ) for Java program development
- Interpret technical programming documentation (Java API)

Course Topics

- Arrays
- Inheritance, Polymorphism
- Interfaces
- Exceptions
- Graphical User Interfaces
- Recursion

- Searching and Sorting
- Analysis of Algorithms
- Generics and Collections, Lambda and Streams
- Data Structures – Linked Lists, Stacks, and Queues
- Testing and Debugging
- UML Class diagrams

Instructor's Expectations

The instructor expects students to:
- Attend class **regularly** and **on time**
- Participate in class activities
- Ask questions in class
- Write professional-quality Java code: well-designed, well-formatted, well-commented, and readable

Special Needs

If there is any student in this class who has special needs because of a disability, please contact Disability Support Services (DSS) at 616-331-2490.

Academic Honesty

All students are expected to adhere to the academic honesty standards set forth by Grand Valley State University. In addition, students in this course are expected to adhere to the academic honesty guidelines as set forth by the School of Computing and Information Systems, the details of which can be found at http://www.cis.gvsu.edu/Academics/Honesty/.

Grading

- Last day to drop a course with a grade of "**W**" is **Friday, March 6, 2020, 5:00pm**.
- **IMPORTANT: The instructor reserves the right to invoke the following:** In order to pass this course with a grade of C or better, you must have an average of at least 60% in exams (tests, final exam, and Lab exam).
- Your grade in the course will be determined based on all the work assigned (see table below) in the course using the grading scale shown below.

Programming Project 1	10%
Programming Project 2	10%
Programming Project 3	10%
Programming Project 4	10%
Test 1 (mid term)	15%
Final Exam	20%
Lab Exam	15%
Attendance/Participation in Labs	10%

Grading Scale

A	94%	**C**	73%
A-	90%	**C-**	70%
B+	88%	**D+**	67%
B	84%	**D**	60%
B-	80%	**F**	below 60%
C+	77%		

Programming Projects

Programming projects require **considerable** amount of time outside of class. I advise you to budget your time properly. You are encouraged to discuss the assignment specifications with your instructor (and with your fellow students). However, anything that you submit for grading must be your own work.

Programming Projects – Submission & Late Policy.

- Late penalty is 20% first day, non first day 10% per day (unless stated in the assignment). Weekend counts as one weekday. Projects will not be accepted after one week late.
- You will be required to demo your project to the instructor.

Course Policies

- All homework and programming projects, unless otherwise specified by the instructor, are to be completed individually. Students are encouraged to consult each other for instructional assistance only.
- The instructor reserves the right to modify course policies, the course calendar, and assignment point values and due dates.

Labs

- Attendance in labs is mandatory. You will receive 50% credit for simply showing up. To receive 100% credit you must make a meaningful attempt at completing the lab.
- You may complete the labs with a partner (but you are also free to complete them individually if you prefer).

Piazza

We will be using Piazza for communication. Important announcements will be posted on Piazza and it is your responsibility to monitor Piazza for these announcements. If you have a question or a concern, please post it on Piazza. Most questions can be posted publicly. However, if you are asking a question about your specific grades or some other private matter, you may post the question/note privately. Do not post solutions (answers, code etc.) publicly on Piazza.

Please post on Piazza in place of emailing the course staff. This is both to assist other students who may have similar questions and to ensure you receive the fastest response as emails are far more likely to be buried in an inbox with hundreds of other emails.

While Piazza is a fantastic resource, it is typically not appropriate for helping students debug code, which requires a more back and forth conversation. If you need assistance debugging your code, please come to office hours. If you can describe your problem in words, feel free to post, but you should not simply be posting your code and asking why it is not working.

Tentative Schedule

Week	Week Of	Lecture	Special Dates/Events	Lab / Projects due at start of Lab
1	1/6	CIS 162 Review: Chapters 1 – 5 Using IDE (Eclipse) References – Review, JUnit		**Assign: Project 1** Lab 1 Intro to IntelliJ
2	1/13	Complete JUnit, Arrays – Chapter 7 Inheritance – Chapter 8;		Help with Project 1 and requirements Lab 2 JSG and debug
3	1/20	UML & Dia Tool; GUI, chap 6, Debugging Help with Project 1 / 2.	Monday is MLK day	**Assign: Project 2** Lab 3 Help with Project 1.
4	1/27	Complete chapter 8; polymorphism – Chapter 9; interfaces		**Due Project 1** Lab 4 UML and Dia
5	2/3	Exceptions – Chapter 10 Recursion – Chapter 17		Lab 5 Help with Project 2
6	2/10	Lambda, Collections		Lab 6 Recursion **Due: Project 2**
7	2/17	Review	**Exam 1** **Friday** **(mid term grades due 25th)**	**Assign: Project 3** Lab: Lambdas, Streams
8	10/24	Complete Streams, Lambdas, Collections Details of Searching and Sorting – Chapter 18 Selection, Insertion, Merge, Quick		Lab 7 TBA
9	3/2	Winter Break		Lab 8 TBA
	3/9	Complete Stream, Searching and Sorting help with project 3		
10	3/16	Analysis of Algorithms – Chapter 11 Big O.		**Assign: Project 4 (only if you have project 3 done, since the starting code for project 4 has the solution for project 3)** Lab 9: Big O
11	3/23	Linked Lists – Chapter 13		**Due: Project 3** Lab 10 Linked list single
12	3/30	Double Linked Lists – Chapter 13	**Lab Exam**	Lab Exam
13	4/6	Stacks and Qs– Chapter 13, 14 Go over Lab Exam		**Due project 4.** **NO "lates" for this project!** **Lab 11 Link List double**
14	4/13	Catch up and Review for Final		Review in Lab for Final exam
		Final exam	**Final exam** **Saturday, April 18 2020** **At 9AM**	

Event	Date
Registration Drop and Add	March 18 - January 10
Payment Deadline	December 13 by 5:00 pm
Classes Begin	January 6
100% Tuition Refund Deadline	January 10 by 5:00 pm ⓘ
Last Day to Add, Register, or Pay	January 10 by 5:00 pm ⓘ
Martin Luther King, Jr. Day Recess	January 20
75% Tuition Refund Deadline	January 31 by 5:00 pm ⓘ
Mid-term Evaluations	February 17-21
Mid-term Grades Due from Faculty	February 25 by 12:00 pm
Mid-term Grades Available to Students	February 27
Spring Break	March 1-8
Drop with a "W" Grade Deadline	March 6
Classes End	April 18
Examination Week	April 20-25
Commencement	April 24-25
Semester Ends	April 25
Grades Due from Faculty	April 28 by 12:00 pm
Grades Available to Students	April 30