

# Genesee Community College Syllabus – CIS221 – Computer Programming 2 – Spring 2020

**Instructor:** Ken Mead

**Email:** [kjmead@genesee.edu](mailto:kjmead@genesee.edu)

**Office location:** D395 Math Science Area, Building D, Main Campus

**Office hours:** To Be Announced.

**Phone:** 585-343-0055 x 6381

**Homepage:** <http://faculty.genesee.edu/kjmead>

**IMPORTANT – TESTS WILL BE PROCTORED.** See the **Proctored Testing** section below.

## Catalog description:

A continuation of CIS219. Demonstrates advanced computing system concepts, problem solving and systematic program development in problems from a variety of application areas. Topics include program development, program testing and documentation, functions, files, advanced data structures, pointers, stacks, queues, linked lists, recursion, trees, sorting, searching, and object-oriented concepts. Students should plan sufficient time to complete the necessary programming projects using the college's computing facilities. Spring only.

**Prerequisite:** CIS219

## Course Learning Outcomes (CLOs):

Upon the successful completion of this course, a student will be able to:

1. Use multi-dimensional arrays or nested lists, in a high level language such as Java, to store tables of related data.
2. Use appropriate techniques to process the data stored in multi-dimensional arrays or nested lists.
3. Write classes using abstraction, composition, or encapsulation as needed to promote reusable and efficient code.
4. Apply the concepts of inheritance and polymorphism as needed to promote reusable and efficient code.
5. Apply exception handling techniques to control program flow.
6. Store data to, and access data from, files on a filesystem.
7. Create basic Graphical User Interfaces.
8. Write code to add listeners to objects, and process events from actions on these objects.
9. Access databases using SQL inside a program.

## Content Outline:

1. Review of CIS219, conditions, loops, arrays.
2. Multidimensional arrays
3. Review (and introduction to) Objects
4. Object-Oriented Thinking
5. Inheritance and Polymorphism
6. Exception Handling and Text I/O
7. Abstract Classes and Interfaces.
8. GUI Programming and JavaFX

9. Event Driven Programming
10. Accessing Databases with Java
11. Extra topics to be determined.

## Course Overview:

In this course, we'll be focusing on the Java programming language to learn how to program. Java is the most popular language in use on the planet (see the Tiobe Index at <https://www.tiobe.com/tiobe-index/>), and is running on 3 billion + devices around the globe.

Here is a very general week-by-week description of the content of the course. This is by no means set in stone and should only be used as a guideline.

### Week 1

Review of CIS219

### Week 2

Multidimensional Arrays

### Week 3

(Re)Introduction to Objects

### Week 4

Object-Oriented Thinking

### Week 5

Object-Oriented Thinking

Review for Test 1

### Week 6

Test 1

Inheritance and Polymorphism

### Week 7

Inheritance and Polymorphism

### Week 8

Exception Handling

Text I/O

Spring Break

### Week 9

Abstract Classes and Interfaces

### Week 10

Finish Abstract Classes and Interfaces

Review for Test 2

### Week 11

Test 2

Intro to GUI programming with JavaFX

Week 12

More GUI programming

Week 13

Using Java to access databases

SQL

Week 14

Finish Databases

Additional Topics

Week 15

Finish Additional Topics

Review for Test 3

Week 16

Test 3 and Semester Wrap Up.

## Required materials:

Textbook: Introduction to Java Programming and Data Structures, Comprehensive Version (11th Edition), Daniel Liang, Pearson Publishing, ISBN: 978-0134670942

Access to a computer with Java JDK installed.

## Proctored Testing:

Students in this course should plan to take exams in class on the dates listed below. Missed exams will result in a grade of zero unless the student has an unavoidable reason for missing the test AND you notifies his/her instructor in advance (either in person, by sending email, or by phone call and leaving voicemail).

Students who are not local, or cannot attend class on the date and time scheduled, should make arrangements to take each test either:

- a) with the instructor at a different time, or
- b) at one of GCC's testing centers during their regularly scheduled testing hours. (see <https://www.genesee.edu/offices/testing/> for all the details on testing hours and locations).

In either case, **the student needs to notify the instructor at least 7 days in advance with the game plan.** Your instructor understands that the campus centers have very limited testing hours, and he will work with you to allow you to take your test within a reasonable window (usually a couple of days, either way) around the scheduled test date.

If driving to campus or a campus center to take tests is not feasible, then the student may arrange to take proctored tests at a local library or school. Please contact your instructor for more information.

## Grading:

Final grades are assigned according to the following scheme, with the final average rounded to the nearest integer (in %): 92 or higher = A, 90-91 = A-, 88-89 = B+, 82-87 = B, 80-81 = B-, 78-79 = C+, 72-77 = C, 70-71 = C-, 68-69 = D+, 62-67 = D, 60-61 = D-, 59 or less = F.

### Grades will be weighted as follows:

- 50% - **three in-class exams on 2/18, 3/31 and 5/5.**
- 50% - Programming projects and homework assignments. Homework assignments will collectively count as a single project grade.

\* See “Proctored Testing” section above if you are not local to Batavia and can't take your tests on the scheduled date and time in Batavia, NY.

### Breakdown of Projects and Assignments:

There will be many short homework assignments that must be completed throughout the semester. Generally speaking, these will be graded on a scale of 0-10. Most often, the grade will either be 0 (not done or not acceptable), 5 (done, but with serious defects), 9 (almost perfect), and 10 (perfect). However, there may be exceptions. You should complete homework assignments as soon as possible after they are assigned. The deadline for submitting homework assignments for full credit will be one week after the homework was assigned. The firm deadline will be the date and time of the next scheduled exam. Homeworks submitted after the due date but before the firm deadline will receive a 2 point reduction for each week late. Homeworks submitted after the firm deadline will not be accepted for credit at all.

There will also be between 4 and 5 larger programming projects which must be completed to specifications provided by the instructor. Projects must be submitted on time or will be assessed a penalty of 10% if submitted within a week of the due date, 20% if submitted between 8-14 days late, 50% if submitted later than 2 weeks. If a project is not submitted at all, you will receive a grade of zero (0) AND will have 2 points deducted from your final average!

## Student Responsibilities:

- Attend class and/or view the class video as soon as possible.
- Take your exams! If you must miss an exam due to extenuating and unavoidable reasons, you need to contact your instructor beforehand to re-schedule. Missing an exam without permission and a good reason will result in a grade of zero. If you are taking exams at a campus center or some other locale, please contact your instructor with your plans at least 10 days before the scheduled date.
- Complete homeworks and projects on time! Late penalties will apply. See above.
- Stay engaged! Come up with ideas for problems to solve! When viewing the videos, make sure you solve any problems as you view. Enjoy the material because it's really good stuff!!!
- Put the phone away. Respect your classmates. Don't be disruptive. No spitballs or flame throwing.

## **Plagiarism and Cheating:**

***Cheating*** is obtaining or intentionally giving unauthorized information to create an unfair advantage in an examination, assignment, or classroom situation. ***Plagiarism*** is the act of presenting and claiming words, ideas, data, programming code or creations of others as one's own. Plagiarism may be intentional – as in a false claim of authorship – or unintentional – as in a failure to document information sources using MLA (Modern Language Association), APA (American Psychological Association) Chicago or other style sheets or manuals adopted by instructors at the College. Presenting ideas in the exact or near exact wording as found in source material constitutes plagiarism, as does patching together paraphrased statements without in-text citation. The purchasing or sharing of papers or projects between students or the re-use of papers or projects submitted for more than one assignment or class also constitutes plagiarism.

In short - **do your own work!** This means no cutting and pasting code from the internet. Students are encouraged to discuss programming assignments and projects, and even develop overall strategies for solving problems together, but must ultimately write their own code. Any evidence of plagiarism, or of cheating or sharing answers on a test, will result in a grade of zero for the assignment, project or test. Multiple offenses will result in a grade of F for the course.

**Accessibility Statement:**

If you have a physical, psychological, medical or learning disability that may impact your course work or participation in this class, please contact the Assistant Dean of Student Services/Disabilities Coordinator, Success Coach, or Academic Advisor who will arrange an intake meeting. The Assistant Dean/Coordinator will determine with you what accommodations are necessary, appropriate and reasonable. All information and documentation is confidential.

*The instructor reserves the right to make any reasonable and necessary modifications to the statements above. This document is subject to change.*