FALL 2019

CSC 203: Problem Solving with Objects

Lecture - MW : 5.05 – 6.20 PM LIBART 207

Lab – W : 6.35 – 8.35 PM DRAKE 0044

Instructor Details

Dr. Jerry Ajay

Office: 104 Brown Building

Email: JAjay@brockport.edu

Webpage: https://jerryajay.com/cse-203-fall-2019/

Office Hours

Will be finalized on the 1st day of week 2. There's a 'Meet and Greet the Professor' office hour this Friday – Aug 30th between 10am to 5pm. It's essential that everyone meets the Professor at 104 Brown and lets the professor know their preferred time of office hours for this course.

Textbook

Y.D. Liang, Introduction to Java Programming: Comprehensive Version plus MyProgrammingLab, 11th Edition, Pearson, Boston, MA, 2018 (ISBN: 978-0134670942)

Prerequisite

CSC 120: Introduction to Computing

MTH 122: Pre-calculus

Course Description from the CS Department Handbook

Covers fundamentals of algorithms and object-oriented software development. Includes these topics: primitive and reference data types, classes, methods, selection, iteration, parameters, recursion, exception handling, arrays, file I/O, inheritance, polymorphism, program testing and documentation, introduction to GUIs and introduction to sorting and searching techniques and other basic algorithms. Requires extensive programming and supervised laboratory sessions. 4 credits.

Learning Outcomes

A student who has successfully completed CSC 203 has the ability to:

- Use BlueJ (or a similar IDE) to create, compile, debug and execute Java programs
- Design solutions to simple programming problems in a systematic way: design top-level algorithm, use step-wise refinement to produce detailed algorithms, and translate algorithms into Java code
- Develop systematic test cases for simple Java programs and test them
- Write a good documentation, following Java standards (Javadoc)
- Use common built-in classes and their methods, such as String, Math and ArrayList
- Design and implement simple classes containing constructors, accessor, mutator and other methods
- Implement algorithms for search, select, sort, and merge with arrays of primitive types and arrays of objects
- Write programs using object-oriented (OO) features such as inheritance, polymorphism, abstract classes and interfaces
- Write programs that deals with text files and handles exceptions
- Use Java GUI components to create simple graphics
- Writes recursive methods for simple problems

Nature of the Course

This course deals with fundamental concepts in computer problem-solving and programming. Computer problem-solving and algorithm development can be summed up in one word – it is **demanding**. It is an intricate process requiring considerable thought, careful planning, logical precision, persistence, and attention to detail. In order to be really successful, you need the precision of a mathematician, curiosity of a scientist and the design skills of an engineer. For the same reason, problem solving can be **challenging and exciting –** a satisfying experience with considerable room for **personal creativity and expression**. The material taught in this course is so basic that every higher-level course in computing is built on top of it. You must plan on complete mastery of the subject matter. It is simply not enough to get a passing grade. This is a 4-credit course with 3 hours of lecture and 2 hours of supervised laboratory work per week. It is expected that you will work 6-10 hours per week outside the class in order to complete all your assignments and fully understand the material.

Software

We will program in Java language with the BlueJ integrated development environment (IDE). If you have a personal computer and Microsoft Windows, you may want to download and install the free software. Access http://www.bluej.org/ and download BlueJ (version 4.2.1) installer which inherently contains the Java Development Kit (JDK) for Java 11.

Course Evaluation

Assignments	50%

6 Homework Assignments (10 Points each)
 	
    10 Lab Assignments (10 points each)
 	
    2 Programming Assignments (20 Points each)	

Exams	50%
2 In class exams (55 Points each) Comprehensive final exam (90 Points)	

Participation

Students should be prepared to actively participate and discuss weekly readings in class. The lecture sessions are designed to facilitate the instructor speak, whereas the lab sessions are designed to help the student self-learn with minor involvement by the instructor. Both class and lab participation is mandatory.

Assignments

Homework assignments are due at the beginning of class. No credit will be given for late assignments.

Exams

There will be two in-class exams and there will be a comprehensive final exam. There are no make-up quizzes or exams unless in dire circumstances with appropriate medical/official/legal documents.

Grading Policy

The passing grade in CSC 203 is D-.

A	Greater than 90%
A-	Greater than 87% but less than 90%
B+	Greater than 83% but less than 87%
B	Greater than 80% but less than 83%
B-	Greater than 77% but less than 80%
C+	Greater than 73% but less than 77%
C	Greater than 70% but less than 73%
C-	Greater than 67% but less than 70%
D+	Greater than 63% but less than 67%
D	Greater than 60% but less than 63%

D-	Greater than 57% but less than 60%
E	Less than 57%

Note: For Computer Science and Computer Information Systems majors, the passing grade in this course is **C**. That is, if you receive a grade of **C-** or less, you must repeat this course to graduate. The passing grade for others in this course is **D-**.

Assignments and Academic Integrity

All homework assignments are to be completed on individual basis, i.e., on your own. Group efforts are not acceptable. Academic dishonesty is unacceptable and considered grounds for failure and other disciplinary actions as stipulated in the College Policy on Academic Dishonesty. All assignments are due at the beginning of class on the day they are due. Late assignments will not be accepted. No credit will be given for late assignments.

Exams

Students will not receive any credit for missed exams. If you will not be able to attend an exam you must notify me at least a week in advance to make arrangements at some other time.

Blackboard

Grades for the assignments will be distributed through Blackboard. Access Blackboard via :
https://brockport.open.suny.edu

Email

Email is the preferred method of communication. However, please ask your questions on Piazza for an immediate response either by the instructor or other classmates (link for Piazza sign-up given in homepage: https://jerryajay.com/cse-203-fall-2019/).

Attendance and Classroom Conduct

Faculty Senate legislation mandates student attendance in all classes. Students who are unable to attend the examinations or meet deadlines for assignments on particular days due to religious or familial beliefs, must contact me ahead and work out alternate arrangements. Students are expected to behave as reasonable adults, motivated to explore the subject matter with proper guidance from the instructor. Late arrivals and early departures disturb the entire class and should be avoided. As per Senate policy, students whose unexcused absences exceed 15 percent of the scheduled classes and laboratories may receive a lowered grade or failure at my discretion.

Disability Statement

Students with documented disabilities may be entitled to specific accommodations. The College at Brockport's Office for Student with Disabilities makes this determination. Please contact the Office for Students with Disabilities at (585) 395-5409 or osdoffic@brockport.edu to inquire about obtaining an official letter to the course instructor detailing any approved accommodations. The student is responsible for providing the course instructor with an official letter. Faculty work as a team with the Office for Students with Disabilities to meet the needs of students with disabilities.

Title IX Compliance

Sex and Gender discrimination, including sexual harassment, are prohibited in educational programs and activities, including classes. Title IX legislation and College policy require the College to provide sex and gender equity in all areas of campus life. If you or someone you know has experienced sex or gender discrimination, sexual harassment, sexual assault, intimate partner violence, or stalking, we encourage you to seek assistance and to report the incident through resources available at https://brockport.edu/about/title_ix/. Confidential assistance is available on campus at Hazen Center for Integrated Care and RESTORE. Faculty are NOT confidential under Title IX and will need to share information with the Title IX & College Compliance Officer. For these and other policies governing campus life, please see https://www.brockport.edu/support/policies/student.php.

Statement of Non-discrimination

"The College is committed to fostering a diverse community of outstanding faculty, staff, and students, as well as ensuring equal educational opportunity, employment, and access to services, programs, and activities, without regard to an individual's race, color, national origin, religion, creed, age, disability, sex, gender identity, sexual orientation, familial status, pregnancy, predisposing genetic characteristics, military status, domestic violence victim status, or criminal conviction. Employees, students, applicants or other members of the college community (including but not limited to vendors, visitors, and guests) may not be subjected to harassment that is prohibited by law or treated adversely or retaliated against based upon a protected characteristic."

Statement of Equity and Open Communication

"I recognize that each class I teach is composed of diverse populations and am aware of and attentive to inequities of experience based on social identities including but not limited to race, class, assigned gender, gender identity, sexuality, geographical background, language background, religion, disability, age, and nationality. This classroom operates on a model of equity and partnership, in which we expect and appreciate diverse perspectives and ideas. If anyone is experiencing exclusion, intentional or unintentional aggression, silencing, or any other form of oppression, I encourage open communication with myself and/or the class as a whole."

Emergency Alert Statement

In case of emergency, the Emergency Alert System at The College at Brockport will be activated. By signing up for RAVE, you can receive warnings and emergency information via the web, your cell phone, email and other technologies. Students can sign-up for RAVE using the link on the College's Emergency Information website, https://www.brockport.edu/support/emergency. Included on the website are detailed information about the College's Emergency Action Plan, Classroom Emergency Preparedness, Official Evacuation Procedures, Emergency Communication, and Contacts (phone numbers, email addresses, etc.). In addition, students are encouraged to familiarize themselves with the Emergency Procedures posted in classrooms, halls, and buildings and all college facilities.

Weather Conditions and Class Cancellations

I have no authority to cancel classes, no matter what the weather condition is. Only the President of the College makes that decision. On days of severe weather conditions, please listen to WBSU (89.1 FM) and WHAM (1180 AM) for class cancellations. You may also call (585) 395-COLD at the College. If I have any information, I will try my best to send an email.

Help

Listed in the decreasing order of the quickest response time:

1. Ask on Piazza. Apart from the instructor, other classmates could help too.
2. See me during office hours. It's highly recommended to schedule an appointment if wanting to meet me apart from the regular office hours.
3. If either of the above two approaches doesn't work, then send me an email. I'll either respond via email, or in case of general questions, I'll redirect the question to Piazza as well as discuss it in class or in lab to benefit other classmates who may have similar questions. Be assured that your question will be answered some way or the other.

Laboratory Work

There are 14 scheduled laboratory sessions in Drake 0044 computer lab. Laboratory sessions are ideal for seeking individual help from the instructor.

Course Schedule

Week 1: 08/26/2019

Topics	Java basics and conventions
Readings	Chapters (1-2) Omit sections 1.11 and 1.12

Week 2: 09/02/2019

Topics	Java basics and conventions
	Object orientation: String, Math and Scanner classes
Readings	Chapters (3-4)
Wed 09/04	**Assignment 1**

Week 3: 09/09/2019

Topic	Algorithm development and testing
	Program modularization: Methods and parameter passing
Readings	Chapter (5-6)
Wed 09/11	**Assignment 2**

Week 4: 09/16/2019

Topic	Creating classes
Readings	Chapter 9

Week 5: 09/23/2019

Topic	More on classes and objects
Readings	Chapter 10
Wed 09/25	**Assignment 3**

Week 6: 09/30/2019

Topic	Arrays and arrays of objects
Readings	Chapter 7 (sections 7.1 - 7.9)

Week 7: 10/07/2019

Topic	Search, selection sort and command-line arguments
Readings	Chapter 7 (sections 7.10 – 7.13)

Wed 10/09   Exam 1

Week 8: 10/14/2019

Topic   Review all material

Readings   All chapters covered so far

Week 9: 10/21/2019

Topic   Two- and multi-dimensional arrays

Readings   Chapter 8

Thurs 10/23   Assignment 4

Week 10: 10/28/2019

Topic   Inheritance and polymorphism

Readings   Chapter 11

Week 11: 11/04/2019

Topic   Inheritance and polymorphism

Readings   Chapter 11

Week 12: 11/11/2019

Topic   Exception handling and text I/O

Readings   Chapter 12

Thurs 04/18   Exam 2

Thurs 04/18   Assignment 5

Week 13: 11/18/2019

Topic   Abstract classes and interfaces

Readings   Chapter 13

Thurs 04/25   Assignment 6

Week 14: 11/25/2019

Topic   Java FX basics

Readings   Chapter 14

Week 15: 12/02/2019

Topic   Recursion

Readings   Chapter 18

Week 16: 12/09/2019

Final Exam Week (Review all material – either in lecture/Piazza/Office hours).