

COS 160 Structured Problem Solving: Java

Department of Computer Science

Fall 2025

Instructor Info

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Office: C286 Science Building, Portland

Student Hours:

Wednesday 2:00 PM - 3:00 PM

Or by Appointment

Course Meetings

Science Building 290, Portland

Lecture: M/W 12:30 PM-1:45 PM

Lab: M 2:00 PM-2:50 PM



[Student Services and Policies Hub](#)

Contents

1. Course Information	2
2. Coursework & Grading	3
3. Class Schedule	5
4. Course-Specific Policies	8
5. Academic Services & Policies	9

1. Course Information

1A. Course Description

An introduction to the use of digital computers for problem solving, employing the Java programming language as a vehicle. Content includes elementary control structures and data representation methods provided by Java and the top-down programming methodology. Course requirements include a substantial number of programming projects.

1B. Course Materials & Books

Required Book

Please acquire the following book by 9/8/2025. All other reading materials will be provided free of cost in Brightspace.

- ***Building Java Programs: A Back to Basics Approach (5th edition)*** by Stuart Reges and Marty Stepp

Supplemental Books/Materials

The following books and/or materials are not required, but you may find them useful in completing course activities.

- ***Clean Code: A Handbook of Agile Software Craftsmanship*** by Robert C. Martin
- ***Code Complete*** by Steven McConnell
- ***Programming Pearls*** by Jon Bentley
- ***The Self-Taught Programmer*** by Cory Althoff
- [Learning Git Branching](#) and [Git Documentation Videos](#)

Required Technology

We will use the following technologies for class assignments. Please make sure you are able to access these. Review technology guidelines and/or contact the [Technology Support Center \(Help Desk\)](#).

- You will be using a **Java Development Kit (JDK)** and the **Eclipse Integrated Development Environment**. *The software is available for free*. Instructions for downloading and installing the software are available at: www.cs.usm.maine.edu/~boothe/cos160/JavaAndEclipseSetup.html
- The software for this course is also installed in all USM computer labs. You may want to

consider utilizing **Google Drive** or a **USB** drive for transferring your files to your local machine if you use the computer labs.

1C. Course Learning Outcomes

In this synchronous course, the student will demonstrate:

- significant problem solving skills.
- considerable expertise in Java.
- the ability to apply appropriate mathematics to computer programs.
- the ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

2. Coursework & Grading

2A. Course Assessment

Any assignments handed in late will incur a 10% a day reduction in the assignment grade.

Assessment Name	Value
Lecture attendance	5%
Lab attendance	5%
7 Quiz	10%
4 Homework	20%
8 Lab	40%
Midterm	8%
Final	12%
Total:	100%

2B. Attendance

Students are expected to attend all the classes in-person. You will be required to sign your name by the end of every class. More than three absences will result in an “L ” grade for this course, meaning the student has stopped attending. The attendance for lectures and lab sessions each accounts for 5% of the total grade.

2C. Quizzes

There will be seven quizzes given throughout the semester. The quiz is scheduled in lecture classes, and you will have a 15~25 minute window to complete it. A student's five best scores will be used to compute their quiz average. Since two quizzes will be dropped for all students, makeup quizzes will not be given.

2E. Homework

Assignments should be completed individually; they will be due on the day by 11:59 PM. For example, the first homework due is Sept 10, which means you should submit your work before Sept 10 at 11:59PM. All assignment reports (Microsoft Word or PDF file) and program source codes (Java executable file) will be submitted and graded through Brightspace. There is a total of four Homework assignments, each accounting for 5% of the total grade.

2F. Labs

A total of 8 lab programming assignments will be given, each accounting for 5% of the total grade. You are allowed to discuss them during lab sessions, but copying code is not permitted. If identical or nearly identical code is found, all students involved will receive a grade of 0 for that assignment.

2G. Midterm & Final Exam

Exams will be taken online through Brightspace and must be completed within the specified time.

2H. Grading System

Letter grades are assigned based on the final percent using the interval values:

Grade	% Bound
A	93 - 100
A-	90 - 92.99
B+	87 - 89.99
B	83 - 86.99
B-	80 - 82.99
C+	77 - 79.99
C	73 - 76.99

Grade	% Bound
C-	70 - 72.99
D	60 - 69.99
F	<60

3. Class Schedule

3A. Lectures

Week	Date	Topics	Readings	Start	Due
1	Sept 3	Introduction, class overview	Sec 1.1		
2	Sept 8	Java, programming basics	Sec. 1.2 - 1.3		
	Sept 10	Terminology, example programs	Sec. 1.2 - 1.3	HW1	
3	Sept 15	Variables	Sec. 2.1 - 2.2		
	Sept 17	Arithmetic operation	Sec. 2.1 - 2.2		Quiz 1
4	Sept 22	Math class and methods	Sec. 3.2		
	Sept 24	Boolean, character, strings	Sec. 2.1 - 2.2; Sec. 5.3		HW1
5	Sept 29	Graphics	Sec. 3G.1 - 3G.3		Quiz 2
	Oct 1	if/else	Sec. 4.1 - 4.2, Sec. 5.3	HW2	
6	Oct 6	Midterm Review			
	Oct 8	Midterm	online		
7	Oct 13	Fall Break no class			

	Oct 15	switch	Sec. 4.3		
8	Oct 20	while loops	Sec. 5.1 - 5.5		Quiz 3
	Oct 22	for loops	Sec. 2.3		HW2
9	Oct 27	Arrays	Sec 7.1 - 7.2	HW3	Quiz 4
	Oct 29	Array algorithms	Sec 7.3 - 7.4		
10	Nov 3	Two-dimensional arrays	Sec. 7.5 - 7.6		
	Nov 5	Methods, parameters, return	Sec. 3.1 - 3.4		Quiz 5
11	Nov 10	Methods with loops	Sec. 3.1 - 3.4		HW3
	Nov 12	Method array parameters	Sec. 7.1 - 7.4		
12	Nov 17	Programming Practice			Quiz 6
	Nov 19	I/O streams, formatting	Sec. 6.1 - 6.2	HW4	
13	Nov 24	File I/O	Sec. 6.3 - 6.4		
	Nov 26	Thanksgiving Break			
14	Dec 1	Objects and Classes	Sec. 8.1 - 8.2		
	Dec 3	Objects and Classes	Sec. 8.3 - 8.5		Quiz 7
15	Dec 8	Programming Practice			HW4
	Dec 10	Catch-up and Review			
	Dec 15	Final Exam	online		

3B. Labs

Week	Date	Topics	Start	Due
1	-	-	-	-
2	Sept 8	Using Eclipse and Printing a Face	Lab 1	
3	Sept 15	Integer variables and Expressions	Lab 2	Lab 1
4	Sept 22	Integer variables and Expressions		
5	Sept 29	Graphics	Lab 3	Lab 2
6	Oct 6	Cancel		
7	Oct 13	Fall Break no class		
8	Oct 20	if statements	Lab 4	Lab 3
9	Oct 27	For Loops	Lab 5	Lab 4
10	Nov 3	Arrays	Lab 6	Lab 5
11	Nov 10	Methods	Lab 7	
12	Nov 17	Methods		Lab 6
13	Nov 24	Reading files	Lab 8	Lab 7
14	Dec 1	Review		
15	Dec 8	Review		Lab 8

4. Course-Specific Policies

4A. Handing in Assignments

All assignments reports (Microsoft Word or PDF file) and program source codes (Java executable file) will be submitted and graded through Brightspace.

4B. Late Assignments

Late assignments will be marked down 10% per day that they are late (except under special circumstances such as illness or other unanticipated impediments). Late assignments will also not be accepted after the last class lecture unless a prior arrangement has been made.

4C. Plagiarism and Use of Artificial Intelligence (AI) in Coursework

Plagiarism is turning in work that is not your own. Searching the internet for answers or using answers created by others is plagiarism and may result in failing the course as well as appropriate disciplinary action. It is your responsibility to not leave your work where others might copy it.

While copying code is completely unacceptable in this course, sometimes it is useful to get advice. The best way to gain the problem solving skills taught in this course is to first try to solve the problem completely on your own. Sometimes you get stuck. Ideally, you have time to ask a question in class and I will be happy to help explain to you and the many others that probably have the same question. You can also do a web or a generative AI search on the area that you are having difficulty. Once you understand this other code, then you must translate it into your own code. A good way to do this is to set the code aside and write your own version. There should be no line by line copying or electronic copying. Every keystroke in your program is your own and the solution method is something you completely understand. One way to measure this is: could you reproduce the answer to the assignment in an hour without external help ? If I suspect there is copying of internet resources, I may call you in to ask you to reproduce your answer. Happy to explain this further if you have questions or concerns.

It is acceptable to work with other students in the analysis, design, and debugging phases of your programming assignments. However, unless it is a team project, do not write code as a team. Do not copy your code from or for another student. Please list the students with whom you collaborated, and the type of help you gave or received in a comment at the top of your program. Plagiarism will result in disciplinary action that may involve failure of the course.

5. Academic Services & Policies

Below you'll find a brief list highlighting some of the most crucial student services and supports.

- **Request disability accommodations** | (207) 780-4706 | dsc-usm@maine.edu
- **Report Interpersonal violence** | (207) 780-5767 | usm.titleix@maine.edu
- **Report on-campus emergencies and safety concerns** | (207) 780-5211 or your local police agency.
- **Get academic help** | mycampus.maine.edu/group/usm/learning-commons
- **Get technology help** | usm.maine.edu/computing/helpdesk
- **Meet with an academic advisor** | usm.maine.edu/advising

For USM's most complete and current information on services available to students, as well as academic policies, use the QR Code to go to the [Student Services and Policies Hub webpage](https://mycampus.maine.edu/group/usm/student-services-and-policies-hub)¹.



¹ <https://mycampus.maine.edu/group/usm/student-services-and-policies-hub>