CMSC 132   Object–Oriented Programming II   Fall 2021

sections 010X and 020X *only*

In addition to the policies in this syllabus, various University policies concerning attendance, absences, academic integrity, etc., apply to students. These are summarized in or linked to from www.ugst.umd.edu/courserelatedpolicies.html.

1   Important details for this semester

- Lectures and discussion sections will be recorded in case any students become ill or have to quarantine. The videos are not intended to be a replacement for class attendance, and everyone seems to agree that learning from videos is not as effective as being in class. (The videos will be provided for those who cannot come to class and have no other alternative.)

  There may be a delay of one or more days after each class until the video is available on ELMS.

  Video from one discussion section each day will be provided; which discussion it is will vary from day to day. So the video will usually not be of your own discussion section, just one of the discussion sections.

- At least for the first part of the semester, and perhaps all semester, my office hours will be via Zoom instead of in person. Zoom information for my office hours will be provided separately. I will announce it during the semester I add some in–person office hours.

- The TAs will have a combination of in–person and Zoom office hours; further information will be provided soon.

- There will be a limited schedule (to be provided soon) of both my office hours and the TAs' office hours for the first several days of the semester. After that a new office hours schedule with full hours will be given.

- There will be a few days during the semester when I will not be able to teach lecture. I will provide videos for those classes instead. I will let you know in advance during class and via the News feed what those days will be. The videos will probably not be available until some time after the canceled lecture.

2   Prerequisites and description

This course is 4 credits. Its prerequisites are: a C− or better in CMSC 131 (or a score of 5 on the Java A AP exam, or passing the CMSC department's placement exam), and a C− or better in MATH 140.

CMSC 132 is an introductory course in fundamental data structures (lists, trees, hashing, heaps, graphs, etc.) and their efficiency. Inheritance, concurrency, and design/implementation of problem solutions using object–oriented methods are also emphasized. Programming is done in Java. It is the second part of a two–semester course sequence that is required for computer science and computer engineering majors.

3   Course materials and textbook

Course materials will be provided via the University's ELMS site https://myelms.umd.edu/courses/1307900. Registered students (and the top five on the waitlist in each section during the registration period) will automatically get access to ELMS for the course.

Essential announcements will be made via ELMS that students are responsible for reading. These will be on the main ELMS page, called the "News feed". Be sure to look for new announcements in the News feed every day.

The recommended textbook is *Data Structures and Algorithms in Java, 6th Edition*, Goodrich, Tamassia, & Goldwasser, Wiley, January 2014, ISBN 978–1–118–77133–4. A digital edition (ISBN 978–1–118–80314–1), with the same content but cheaper, is available via the book link next to the course sections in the University's online Schedule of Classes. Because this course is one of the 100 largest on campus, McKeldin Library has a copy of the text, which you can check out and read for 4 hours at a time by asking for it at the Library Services Desk. (Please do not use an illegal copy of the textbook; read the one in the library for free instead.)

4   The instructional staff, email, office hours, and course evaluations

When the teaching assistants and their duties are finalized, a separate handout will be provided with their information.

4.1   Instructor

Instructor:	Larry Herman
Office hours:	TBA
Phone:	(301) 405–2762

4.2   Office hours and email

Office hours will be provided separately soon. While assistance for projects is available from the TAs during office hours, you are ultimately responsible for developing and debugging them yourself; learning these skills is part of the coursework you're being graded for. If you come to office hours for help with program debugging, the TAs will often point you in the right direction, after which it would be up to you to continue working on the problem on your own. A student will be able to receive help in the TAs' office hours with writing or debugging projects at most **two times in a day**. You can get as much help leaning the course material in office hours as you want– there is no restriction for this kind of help. (But of course the TAs' time may be limited due to needing to talk with other students as well.)

Due to the class size we (this applies to me as well as the TAs) will not use email (ELMS messages) except in a few specific special situations. Instead, we will be able to discuss questions and concerns verbally during office hours (which may be in person or via Zoom). Questions can also be asked during, before, or after lecture and discussion section, as time permits. The instructional staff is generally not able to explain course material, discuss administrative issues, assist with programming projects, etc., other than verbally.

Even in case of urgent issues that **must** be discussed electronically, the instructional staff will **only** use the ELMS message system (click on *Inbox* in ELMS). Due to the class size messages may only be read every week or so. (If you have a question or issue that takes an exchange of several messages to answer or resolve, this would take much longer than discussing it verbally.) Even in urgent situations requiring electronic contact, do **not** send a message to all members of the instructional staff. (There is no problem that requires 20 or so people to address it.)

4.3   Course evaluations and feedback

Course evaluations are important, and the department and instructors take student feedback seriously. Please complete your evaluation later in the semester at www.courseevalum.umd.edu. However, rather than waiting until the end of the course to give feedback, please bring any suggestions or concerns to our attention verbally during the semester. Although we cannot guarantee to be able to change anything that is brought up, we welcome hearing any comments or questions, that you may have, and will see if they can be addressed.

5   Course topics

The duration and order of topics may vary according to the pace of lecture, so this list is approximate:

Topic	# lectures
Course introduction	1/2
Review of some CMSC 131 Java concepts (Ch. 1)	1 3/4
Inheritance and object–oriented design (Sec. 2.1 & 2.2)	2 1/2
Abstract classes (Sec. 2.3)	1/2
Error handling & exceptions (Sec. 2.4)	1 1/2
Generics (Sec. 2.5)	1 3/4
Inner classes (Sec. 2.6)	3/4
Linear data structures (Ch. 3)	3 1/2
Algorithm analysis (Ch. 4)	3 3/4
Recursion (Ch. 5)	2
Stacks and queues (Ch. 6)	1

Topic	# lectures
Iterators and Java collections (Ch. 7)	1
Trees and binary search trees (Ch. 8 & Sec. 11.1)	2 3/4
Heaps and priority queues (Ch. 9)	1 1/4
Hashing, sets, and maps (Ch. 10, except Section 10.4)	3 1/4
Graphs (Ch. 14)	2 3/4
Concurrency and threads	3 1/2
Sorting (Ch. 12)	2 3/4
Introduction to networking	1 1/4
Algorithm strategies	1
Introduction to software engineering and testing	1

Some topics not listed here will be covered only in discussion section.

6   Class, attendance, absences and excused absences, and accommodations

Class locations and times are available in the Schedule of Classes at https://ntst.umd.edu/soc. Students are responsible for all academic and administrative material discussed in lecture and discussion section, whether they were in class to hear it or not. Other than cases of excused absences (see Section 6.2 below) or University cancellations, students are expected to attend all lectures and discussion sections.

Electronic devices (laptops, tablets, cell phones, etc.) may not be used in lecture.

On a regular basis students <u>must</u> attend the lecture and discussion section they are registered for, unless they have a convincing reason to regularly attend a different one and discuss the situation with me verbally during office hours. (This is partly to avoid overcrowding in some sections, which is an especially important consideration at this time.) In–class graded coursework may not be counted if it is done in a different lecture or discussion section without permission.

If you **occasionally** cannot attend your own lecture or discussion you can attend a different one, but this does not mean you can attend a different one on a regular basis (without having a reason and discussing it verbally with me).

6.1 What to do if you will be absent from class

Unless you are missing (or already missed) an exam due to last minute illness or emergency, do <u>**not**</u> email me (or your TA) about any absences. *If you are unexpectedly missing an exam on short notice, do send an ELMS message to me immediately.* (The rest of this section applies to all absences *other* than last–minute exam abssences.)

If you are going to miss class (lecture or discussion) and you <u>can</u> attend another one:

If a **few times** during the semester you know that you are not going to be able to attend your own lecture or discussion but are able to go to another one at a different time, you are expected to do that; there may be in–class graded coursework that you would otherwise miss and not get credit for. (Do not send email/ELMS messages asking permission to attend another class; just show up.) If you attend another class it is not an absence.

If you are going to miss class (lecture or discussion) and you <u>cannot</u> attend another class:

If you think it may be a case where the absence could be excused (excused absences are defined and described in Section 6.2 below), do not send email/ELMS messages– the size of the course makes it impossible to keep track of absences this way. Instead fill out the Report an absence form on ELMS, and read the information on it carefully (as well as Section 6.2 below). Except in cases where advance notification is impossible, you are expected to fill out this form **in advance** (which means **prior to the beginning of the class you will be missing**), or the absence would not be excused.

You will need to discuss many absences verbally with me in office hours later, to determine if it is excused and make arrangements if coursework was affected by the absence. Be sure to read Section 6.2 below first.

Exception: if you miss lecture or discussion and you did not miss any graded coursework during the absence it is not necessary to discuss it with me. In this case you will be in compliance with University absence policies if you just report the absence using the report an absence form.

Before or after any absence, excused or not, do not send a message to me or your TA to find out what you will miss or missed, because the size of the course makes it infeasible for us to fill you in via email. Instead you would be responsible for finding out what was missed by getting notes from a classmate who was present, or from ELMS announcements and class videos.

6.2 Excused absences

An excused absence refers to missing class for a University–approved reason, which will not affect a student's grade. The University's course–related policies for excused absences and other situations are summarized at

<p align="center">www.ugst.umd.edu/courserelatedpolicies.html</p>

Most policies there are not repeated here– you should read that information carefully. Here we only emphasize a few points from that page and define necessary specifics for this course.

- For it to be excused, notification of absence must be provided **in advance**, or **as soon as possible** wnen advance notification cannot be given.

- For this course, any documentation provided to support an excused absence (as described in the policy) must be in **PDF** format and submitted via the report an absence form. (Please not upload pictures or other formats.) If you write a self–signed note you can either scan it if you have a scanner, or install a camera scanner app from your phone's app store (just search for "camera scanner") to take a picture of it that will be converted to PDF. (Note that the official Adobe Reader phone app has this functionality.)

  Medical documentation must specify dates of illness or inability to attend class.

- Self–documentation of illness can be used **once during the semester** for an excused absence.

- The major scheduled grading events (this term is defined in the policy linked to above), which self–documentation of illness can **not** be used for, are the midterm exams and the final exam.

6.3 How excused absences will be handled

Arrangements regarding missed coursework due to excused absences must be made with me (verbally in office hours), even if the coursework that was missed was done in discussion section.

- Instead of a makeup exam, an excused absence for a single missed midterm exam will be handled by giving you the average of your other midterms and the final to count for the missed exam. (This will not pull your grade either up or down; it is just like dropping that exam.) This will be a weighted average because the exams have different weights toward your grade.

  If you miss more than one exam, or miss the final exam, you may also be given the average of the other exams, or we may need to give you a makeup exam instead, depending upon the situation. Discuss things with me verbally during office hours **as soon as you are able** so we can determine this.

- Rather than a makeup or extra time to complete it, the score for an excused absence for a practice worksheet will be the average of your scores for the other in–class worksheets (also just like dropping that worksheet).

The score for a missed exam or worksheet (average of the other ones) will be entered in the gradebook by the end of the semester. (There are sometimes reasons that it cannot be entered right away.)

Note that excused absences are **almost never justification for extensions on projects**. Projects will be assigned with sufficient time to be completed by students who have a reasonable understanding of the necessary material and begin promptly, even if an excused absence occurs. In cases of **protracted, extremely serious** illness, or **severe emergency situations,** *short* extensions on projects may be considered, depending upon the circumstances. Discuss such a situation with me as soon as possible (verbally unless it's impossible to do so).

6.4 Students with disabilities

A student with academic accommodations due to disability must provide documentation from ADS (Accessibility and Disability Support Services) to me **near the beginning of the semester**. (Discuss verbally, not after class.) Arrangements for exam accommodations **must** be made with the instructor **at least three business days prior to the exam date** according to ADS.

7 Coursework, grades, and dates

7.1 Weights of coursework

Coursework will count toward the final grade according to the following percentages:

Midterms:	three midterms	40% (8%, 16%, and 16%)	
Final:	will be comprehensive	24%	
Programming projects	nine expected projects	26%	(weighted differently)
In–class (discussion or lecture) worksheets		10%	(equally weighted)

Besides the graded coursework, ungraded practice problems will be provided as worksheets done during class, and as homework and exam practice problems (with solutions) via ELMS. These problems will allow you to test your knowledge of the material and prepare for graded coursework. If you have questions about these problems or need help solving them, ask during the TAs' office hours (or discussion section, if time permits). Some but not all of the in–class worksheets will be graded; these will be unannounced. Graded in–class worksheets can be done individually or together with classmates.

7.2 Project policies and minimum project requirements

Projects will be written in the Eclipse IDE and can be done on the machine of your choice, usually your own computer (although there are computers available in some libraries and other places on campus for those who need to use them). A separate handout will describe how to install and set up Eclipse.

A handout with the project submission and grading policies will be provided when Project #1 is assigned. Projects will all be worth 100 points, but they will be weighted differently based on difficulty. Some projects will be larger and more difficult, and will have more time to be done in. Others will be smaller and easier, and will be assigned for just a few days. Because their relative difficulty can't necessarily be known in advance, their weights will be approximated in the gradebook, and may be adjusted near the end of the semester. In order to be able to pass the course a student **must** submit versions of all projects that satisfy minimum criteria, as the project policies will explain in detail.

7.3 Grading and grades

Grades will be recorded on ELMS. There are more assignments in the gradebook than we will actually end up having; unused assignments in the gradebook will just be deleted at the end of the semester.

Ask questions or discuss concerns about any grades verbally. Do not make comments on grades in the ELMS gradebook; due to the size of the course and the design of ELMS they will not be read.

If you feel that something was graded incorrectly on an exam you may give a written explanation (specific procedures will be provided after the first exam) within a week of when the graded exam is returned and solutions are provided. The question or exam may be regraded in its entirety, and it may be determined that it deserves fewer points than given in the original grading. (Therefore it is in your interest to check carefully and make sure that something was really graded wrong before asking for the grading to be reconsidered.) Questions about project grading should be directed to the TA who graded the project (not me or your teaching TA); their name will appear in the graded project.

Final course grades will be curved as needed, based on each student's total numeric score for all coursework at the end of the semester. (In other words, individual assignments or exams will not be curved; just the final course grades.) It is expected that plus/minus grades will be given, although the distribution of grades and performance of students will dictate what the curve will look like (or if there even is one), how many grades in each range there will be, etc.; these are things that cannot be predicted in advance.

7.4 Exam and project dates

Midterm exams will be held during lecture. The exam and project due dates are below. These dates might vary depending on lecture progress and other factors (for example, if the University has unexpected closures, the entire remaining schedule could require readjustment). Inform me verbally immediately if you have a conflict with a scheduled midterm date.

Project #1:	Tue, Sep 14
Project #2:	Thu, Sep 30
Exam #1:	Mon, Oct 4
Project #3:	Tue, Oct 12

Project #4:	Mon, Oct 18
Project #5:	Thu, Oct 21
Exam #2:	Fri, Oct 29
Project #6:	Thu, Nov 4

Project #7:	Thu, Nov 11
Project #8:	Mon, Nov 22
Exam #3:	Wed, Dec 1
Project #9:	Thu, Dec 9
Final exam:	Thu, Dec 16, 4–6

The final exam will be rescheduled **only** for students having another final at exactly the same time (which should only apply to BMGT 221 and ENES 221), or for students with more than three final exams on the same day. If either situation applies to you, you must inform me verbally **at least two weeks in advance** of the final exam.

8 Academic integrity

Campus policy asks students to include the honor pledge on each examination or major assignment in every course; consequently, you will be requested to write or type it on exams and projects.

Unless otherwise noted, all graded coursework is to be done **individually**, so cooperation or use of unauthorized materials on assignments is a violation of the University's Code of Academic Integrity. **Any evidence** of this **will be submitted** to the Office of Student Conduct, which could result in an XF for the course, suspension, or expulsion.

For academic honesty purposes, **projects are to be considered comparable to a take–home exam, so any cooperation that would be prohibited on an exam is <u>also</u> prohibited on a project.** Note the following:

- In learning the material students are welcome to study together or to receive help from anyone else. It's OK to discuss with others the course material or the **requirements** of a project.

- When it comes to actually designing, writing, or debugging a project, other than help from the instructional staff, these must **solely and entirely** be a student's **own work**.

VIOLATIONS OF THE CODE OF ACADEMIC INTEGRITY MAY INCLUDE, BUT ARE NOT LIMITED TO:

1. Failing to do any of the work on a project by yourself, other than assistance from the instructional staff.

2. Using any ideas or any part of another person's program, or copying anyone else's work in any way.

3. Giving any parts or ideas from your program, including test data or test cases, to anyone else.

4. Transferring any part of a program to or from anyone else, by any means.

5. Putting a program anywhere (for example, a website online) for any other students to access. (Note this also applies in the future to students taking the course in later semesters.)

In designing or writing projects, students are free to use information in the textbook and code provided by the instructional staff, **only** if the source is cited in a comment in the relevant section of the program, only short sections of provided code are used, and the substantial part of the coursework is the student's own individual work. If you have any question about a particular situation or source, ask the instructor in advance.

Should you have difficulty with a project you should see the teaching assistants in office hours, rather than soliciting help from anyone else in violation of these rules.

IT IS THE RESPONSIBILITY, UNDER THE HONOR POLICY, OF ANYONE WHO SUSPECTS ACADEMIC DISHONESTY HAS OCCURRED TO REPORT IT TO THE INSTRUCTOR, OR DIRECTLY TO THE OFFICE OF STUDENT CONDUCT.

You are encouraged to learn more about academic integrity at the Student Honor Council's website, and to read the Code of Academic Integrity, the Code of Student Conduct, and the University's policy regarding acceptable use of information technology resources (including computer accounts) for yourself, using the links on the course's ELMS page.

9   Copyright for materials

Most course materials are copyright Larry Herman (and in some cases other CMSC faculty and instructors not specifically listed due to space limitations) © 2021. All rights reserved for these materials. Students are permitted to use course materials for their own personal use only. Materials may not be distributed publicly or privately to any others (excepting other students currently in the course), in any way or format. A student who distributes copyrighted material without permission (for example, uploading materials that are copyrighted by the instructor to websites) is subject to being forwarded to the Office of Student Conduct.