# Programming Principles in Java
## *Fall 2022*

CS 470/502                TTh 12:30-1:45 PM                PM 110

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| *Instructor:* | Dr. Reva Freedman |
| *Email:* | rfreedman@niu.edu |
| *Phone:* | Faculty offices do not have phones. |
| *Office hours:* | Tue/Thu 4-5 PM in PM-554 *(masks required)* |
| *TAs:* | Dinesh Kolla, MW noon-3 PM, z1935563@students.niu.edu, via Teams |
| | Varun Teja Reddy Maram, Wed 9 AM-noon, Fri 10 AM-1 PM, |
| | z1936033@students.niu.edu, via Teams |

*Course web site:* Reference materials at http://www.cs.niu.edu/~freedman/470/
                     Most course materials will be on Blackboard under CSCI 470
                     Most sample code will be on turing at ~t90rkf1/d470

*Textbook:* Deitel, Paul and Deitel, Harvey. (2017). *Java 9 for Programmers*,
                 4/e. ISBN 9780134777566.

*Course description*:
       Object-oriented programming in Java, including class definitions, collections, streams, I/O, multi-threading, graphical applets, and Internet-based distributed client-server database applications. Implementation using an editor (on Linux) and an IDE (e.g., NetBeans on Windows). Extensive laboratory work.

*Course objectives*:
       1) To understand the most important concepts in Java, including class definitions, collections, streams, I/O, multi-threading, graphical applets and Internet-based distributed client-server database applications.
       2) To be able to use these concepts to create professional-quality object-oriented Java programs and systems, both on Linux using an editor and on Windows using a GUI. There will be an emphasis on system and program design, and using appropriate software and libraries.

*Communication with the professor:* The best way to contact me is one-on-one, followed by email. I will be happy to talk to you about questions or concerns at any time, including any topic relating to this course or other relevant topics. I encourage you to address small problems before they become big problems, not the day before the exam.

I try to respond to email by the next business day, but there are occasional exceptions. Questions that can be answered from reference material may not be answered. Questions requiring major debugging are best handled in person.

Late-breaking news, e.g., errors in assignments, class cancellation or change of class modality, will be posted as Blackboard announcements. Provided that you have your Blackboard settings set correctly, you should also receive them in your NIU email. Personal messages will be sent to your NIU email. I suggest you check both every morning.

Your TA is generally your best first reference for homework issues.

*Class schedule:* If the university is closed for health, weather or other reasons, class may be cancelled or moved to Zoom. Updates will be announced as soon as possible via Blackboard.

*Attendance:* Attendance is required to keep up with the class. However, I will not explicitly take attendance. I will occasionally give in-class exercises to help you keep up.

You are responsible for all material covered in class. If you miss a class, you must get notes from another student before the next class, *not from the instructor*. Research has shown that students who attend class regularly do better regardless of other behaviors.

Although many or most class materials will be posted on Blackboard, that is for your convenience. This is *not* an online class, and there is no assumption that you can learn everything without coming to class.

*Class participation:* Class participation is encouraged and will make the class more interesting for you and for the other students. If you have a question, there are probably three other people with the same question who are even more shy than you.

Please ask ASAP if you don't understand, if I make a mistake, or if you are just curious about something. Questions about details, big ideas, concepts, algorithms, examples, related ideas and applications are all welcome.

*Assignments:* There will be approximately six programming assignments. Assignments may be divided into multiple parts. There may also be quizzes on Blackboard. Graduate students are required to do additional work to show that they are able to integrate the material.

You may not use external code (from other people or from the web) without permission, with the exception of code from the official Java libraries.

If you believe your assignment has been graded incorrectly, you must see the T.A. who graded it within one week after the assignments have been returned. If the problem is not resolved, you must see the professor within one additional week.

*Program administration:* You must follow the program administration guide for this course on the course web page.

*Coding style:* You must follow the style guide for this course on the course web page.

*Schedule:* The planned schedule for this course will be available on the course web page, but it is subject to change.

*Exams:* Provided that the course remains in person, there will be two midterm exams and a final. Confirmed dates of the exams will be announced approximately one week in advance. The final exam will take place during the final exam slot, Tuesday, December 7, 2-3:50 PM.

If the course continues to meet in person, the exams will be traditional closed-book, closed-notes exams. If the course becomes fully remote during the semester, the exam format is likely to change. Exams will be conducted in accordance with the department's academic integrity policy, which is available on the course web site.

With regard to concepts, each exam will cover one section of the course material (the final will not be cumulative). With regard to programming, programming is inherently a cumulative activity, so the exams may include programming constructs from earlier in the course.

In-person exams will include material from the lecture notes, written assignments and programs. For each in-person exam, a review sheet will be posted listing all the possible conceptual questions (in a somewhat different format). Exam formats may include multiple choice,

fill-in-the-blank, short pieces of code to write and other formats. You will not be required to memorize names of libraries or similar issues. Slides used in class will be posted at some point after the lectures in which they are used.

Examples for the programming questions on the exams will be available from sample code and the homework. Programming questions will assume that you have not only done the homework but learned from it, i.e., copying code from the sample programs used in class without learning from them may give you a working program but is less likely to give you the level of understanding you will need for the exams.

You are expected to take the exams on the assigned time and date. Missing an exam is an extremely serious matter: makeup exams will only be given if either (a) or *all* of (b), (c) and (d) are satisfied: (a) an unavoidable reason (e.g. car accident) with notice as soon as possible, (b) advance notification, (c) written documentation, (d) permission of instructor. For the final exam, permission of the department is also required.

Please notify me as soon as possible if you meet the university's criterion for rescheduling a final exam, i.e., you have three finals on the same day and this course is the highest-numbered of the three, or if you have another final exam at the same time. The university deadline for scheduling a makeup final is Monday of the last week of classes. Documentation will be required.

*Grading:* Each homework will be assigned a point count according to difficulty and the amount of time required. Grades will be calculated as follows: Exams 48%, assignments 52% (grades will not be curved or rounded).

| Grade | Average |
|-------|---------|
| A | >= 92 |
| A- | >= 90 |
| B+ | >= 88 |
| B | >= 82 |
| B- | >= 80 |
| C+ | >= 78 |
| C | >= 70 |
| D | >= 60 |
| F | < 60 |

*Class decorum:* In classes for freshmen, I state the following rule on the syllabus: "No activity that interferes with learning, i.e., one that may distract other students or the instructor, is permitted in class. For example, eating, talking (whether in person or on the phone), newspaper reading, and regularly being late or leaving early are not permitted." In a class for seniors and graduate students, I assume it is not necessary to state such a rule explicitly; however, the rule remains in force.

Research has shown that activities such as texting and checking your email interfere with *your* retention of the material, however, they in general do not interfere with other people's ability to concentrate. Therefore these are permitted if you need to indulge in them. Please do not sit in the front row if you intend to engage in these activities, as it is distracting.

*Health and safety:* Masks following the university standard are welcome but not required in this class. If the university changes the mask policy during the semester, the rules for this class may change also.

*Special circumstances:* Students with special needs (disability accommodation, religious observances, required military service, major illness or other unexpected events) are encouraged to contact the instructor as soon as possible. Commuting, having a lot of work for your other classes, being busy at your job, and network problems are *not* special circumstances; they are normal circumstances that everyone has.

*Disability accommodations:* The instructor will provide all of the accommodations to which you are entitled by law. If you need an accommodation for this class, you must provide a notification letter from the Disability Resource Center. Once you provide a copy of the notification letter, we will have a private conference to determine how your approved accommodations will be handled in this class. This conference must be held and agreement reached before any accommodations can take effect. No accommodations will be allowed retroactively.

If you wish to take your exams at the DRC office, you must also follow DRC regulations with regard to exam scheduling.

For these reasons you should contact the DRC as soon as possible. They are located on the first floor (room 180) of the Campus Life Building, and can be reached at 815-753-1303 or drc@niu.edu. Also, please contact me privately as soon as possible to discuss possible accommodations – there is no need to wait until you have received the notification letter.

*Academic integrity:*  You are encouraged to study together, however, that does not mean doing assignments together. Practice on problems from class, from the slides, or your own problems. Do the programs and any written assignments yourself.

You are expected to do your own work on the homework, programs and exams. Cheating includes, but is not limited to, copying work from other students, copying work from other textbooks, copying work from the Internet, or allowing others to do the same, whether deliberately or not.

You may not post material from this class, including answers to the homework assignments, on any public web site.

All cheating will result in the filing of an academic misconduct form and will affect your course grade, with the possibility of failing the course and/or losing your student job. The penalty for a first offense is usually two letter grades. Note that a second academic misconduct offense may result in your expulsion from the university.

We may use mechanized source comparison on the programs.