CS 113 - Introduction to Computer Science I
Course Syllabus, Spring 2024

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Office Hours: MF 11:30am – 12:50pm

Overview

This course is a comprehensive introduction to the Java programming language, writing and testing of programs. The course consists of three major parts. The first part teaches fundamental programming techniques that use primitive data types, variables, assignments expressions, operators and control statements. The second introduces object-oriented programming, methods, parameter passing, recursion and arrays. The third part delves deeper into object-oriented programming by exploring inheritance, interfaces, polymorphism, abstract classes and finally discussing exception handling.
Learning this material requires extensive hands-on practice. You should plan to spend twice as much time studying and working on problems outside of class, as you do in class.

Textbook

Java Software Solutions, 9th edition – John Lewis & William Loftus, ISBN-13: 9780134462028, Pearson. (One could use an older version; however, it is his/her responsibility to make sure homework problems coincide with the ones assigned.)

Prerequisites

CS100 – Roadmap to Computing or equivalent

Course Policies

- **Attendance** is mandatory. A student who misses more than five classes will be dropped, without credit. Getting to class late or leaving early counts as half an absence.

- **Canvas** (https://canvas.njit.edu/) will be the platform for posting lecture notes, submitting assignments and engaging in course discussions. For any questions and additional support, you are welcome to reach out to instructors and classroom assistants via email.

- **Lab** work must be completed during the lab session and submitted on the due date/time. EXCEPT for special circumstances (such as missing class due to a medical problem), for which you must be excused by the Dean of Students, you MUST BE present in class to receive credit for the assigned work. **No** make-up lab assignments will be provided.

- **Online quizzes** will be given weekly at the beginning 15 minutes of every lecture class. The student must be on time to complete the quiz. Late arrivals may not allow for enough time to complete the quiz. **No** make-up quizzes will be provided.

- **Class participation** is a regular part of class meetings. Students will be expected to present their homework/classwork in class. Asking/answering questions as well as participating in group discussions are also part of class participation.

- **Homework** must be submitted on Canvas on the due date/time. All submitted work (including exams) must include your name and student ID. EXCEPT for special circumstances (such as jury duty or medical problem), for which you must provide documentation through the Dean of Students, the following LATE SUBMISSION PENALTY will be applied:
  Up to 1 DAY LATE: -20 pts
  Up to 2 DAYS LATE: -40 pts
  NO SUBMISSIONS WILL BE ACCEPTED after 2 DAYS following the homework Due Date.
  The lowest scored homework will be dropped from the final grade calculation.

  It is imperative that you adhere to the university's academic integrity policies. Cheating, plagiarism, and any other form of academic dishonesty will not be tolerated. To avoid misconduct student's work:
  - must be individual. Students may **not** copy code from external sources without permission of the instructor or course assistant (e.g. online sources, other students' code, previous semester coursework, etc.).
  - may **not** include concepts, methods or code in the homework that have not been introduced or taught in the class up until the submission date.
  - may **not** contain code that they cannot understand or explain if asked.

  A 2-step Grading Rubric will be used when grading the homework assignments and misconducts will be reported to the Dean of Students. Filing a report with the Dean of Students can result in severe consequences, including an XF on the student's record. Additionally, any filed report, regardless of the investigation's outcome, may be considered in future cases by the Dean of Students.

- **Recitation hours** will be provided weekly and conducted by the course assistants. Attending recitation is an important checkpoint in assuring your grasp of the material being covered and correctly solving assigned problems. Before attending recitation, you should have already read the assigned material and made progress on your current homework. During recitation, you should come prepared to ask any questions you have identified that require clarification. This will help confirm whether your understanding of the material is correct. You may also meet with the instructor for your section. All instructors have posted office hours.

- **Cell phones** must be turned off during class. During class time you may not play games, text, email, browse the web or engage in other activities that are not part of the class.

- **Tutoring hours** are also provided by our college. You can find more information on the tutoring page: Tutoring | Ying Wu College of Computing (njit.edu). Additionally, a class Discord channel will be created during the first week to enhance active learning through online discussions.

Material covered

- Introduction to programming and Java programming language
- Data and Expressions
- Using Classes and Methods
- Decisions and Loops
- Arrays and File I/O
- Objects-Oriented Programming
    a. Object-Oriented Design
    b. Defining Classes and creating Objects
    c. Defining methods
    d. Inheritance
    e. Polymorphism
- Recursion
- Exceptions
- Searching and Sorting Algorithms
- Collections

Learning Outcomes

Upon completing the course, the students will be expected to know and be able to use these elements to compute the solution to a problem:

- Understand the concept of classes and objects
- Design and implement own classes
- Create and correctly use objects of different types
- Devise a sequence of steps (algorithm) that correctly solves a given problem.
- Write a program that implements the algorithm using:
    - A main set of java programming language elements (variables, syntax, keywords)
    - Data types (primitive and object data types including arrays)
    - Statements that perform input/output, control statements
    - Exception handling
- Understand inheritance and polymorphism and correctly use to solve complex problems
- Understand recursion and implement recursive methods

Evaluation

The evaluation will be based on the following course requirements:

Midterm 1	18%
Midterm 2	20%
Final Exam	30%
Homework	12%
Labs	12%
Lecture Quizzes	6%
Discretionary	2%

Letter Grade Formula

Grade	**A**	**B+**	**B**	**C+**	**C**	**D**
Overall Course Score Cutoff	85	80	74	68	60	50

Exam Policies

There are two common midterms: Monday, October 14th and Monday, November 11th, 4:00pm–5:30pm. The final exams period is December 15th – 21st. The CS113 final exam will be during this period, but the date has not yet been set. All exams will take place in person, on Canvas, and will require Lockdown Browser.

Be sure that you will be present for all of your exams as there are no make-up exams.

You must bring a photo ID to all exams. Students with special needs are advised to **make arrangements with the Office of Accessibility Resources and Services**.

There are no make-up exams. If you miss a midterm because of a documented special circumstance determined by the Dean of Students you may receive an imputed grade based on the other midterm and the final exam.

Grade Appeals

If you believe that you deserve more credit than you have been awarded on a particular common exam problem, you may request, **at the time the exam is returned**, that it be regraded. Your entire exam will be regraded, which may result in points being added or subtracted.

If you believe that you deserve more credit than you have been awarded on a particular homework problem, you may request, **within 48 hours of the grade being posted**, that it be regraded. Your entire homework will be regraded, which may result in points being added or subtracted.

University Code on Academic Integrity

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. ***Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.*** *If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu*

Tentative Agenda

Lecture 1	TENTATIVE AGENDA	CHAPTER
1	Introduction to programming and Java programming language	Ch. 1
2	Data and Expressions, Using Classes &Objects	Ch. 2, 3
3	Using Classes &Objects, Writing Classes	Ch. 3, 4
4	Writing Classes	Ch. 4
5	Conditionals + Loops	Ch. 5
6	Review for Mid1 + Loops	Ch. 6
7	Object Oriented Design, Interfaces	Ch. 7
8	Arrays	Ch. 8
9	Recursion	Ch. 12
10	Recursion + Review for Mid2	
11	Inheritance	Ch. 9
12	Polymorphism, Sorting and Searching Algorithms	Ch. 10
13	Exception Handling	Ch. 11
14	Collections - Review (Final)	Ch.13