

**CSE 373**  
**Data Structures & Algorithms**  
**Spring 2016**

**Instructor:** Linda Shapiro  
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**Office Hours:** MW 3:30-4:30

**Teaching Assistants:** (See course web page for office hours and locations)

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**Lecture:** MWF 2:30-3:20 in KNE 220

**Help Sections:** To be Announced.

**Course Web Page:** <http://www.cs.washington.edu/373>

**Overview and Goals:** Achieve an understanding of fundamental data structures and algorithms and the tradeoffs between different implementations of these abstractions. Theoretical analysis, implementations, and applications. Lists, stacks, queues, heaps, dictionaries, maps, hashing, trees and balanced trees, sets, and graphs, searching and sorting algorithms are included.

**Course Text:** *Data Structures and Algorithm Analysis in Java* 3<sup>rd</sup> Ed., Mark Allen Weiss, Addison Wesley: 2012. We will also try to support the 2<sup>nd</sup> edition. Readings (and occasionally homework problems) will be assigned from the textbook. As lecture does not provide enough time to cover all material in detail, you will be expected to read the textbook to clarify topics and find more examples as well as to examine Java implementations of the data structures and algorithms discussed during lecture.

**Assignments:** Assignments will be a mix of written exercises and programming projects in Java. Written assignments will usually be turned in in class. Programming assignments will be submitted electronically via the web. Exact dates and deadlines will be specified on each assignment.

**Exams:** We will have a midterm exam and a final exam. The midterm exam will probably be during the week of May 2. The final exam is scheduled for June 7, 2:30-4:20PM. Makeup exams will only be offered under extraordinary circumstances; you should plan to attend the exams when they are given.

**Late Policy:** ALL parts of an assignment must be received by the stated deadline in order for the assignment to be counted as on time. Each student in the class will be given a total of two "late days" (a late day is 24 hours of lateness). There are no "partial days", so assignments are either one time, 1 day late, 2 days late, or 3 days late. Once a student has used up all of his or her late days, each successive late day will result in a loss of 10% on the assignment. Note: In the case of written assignments that are due in class at 2:30pm on a Friday, you would need to create an electronic version and email it to us by 2:30pm on Saturday to be considered 1 day late. You may not submit any portion of any assignment more than 3 days after its original due date.

If unusual circumstances that are truly beyond your control prevent you from submitting an assignment or attending an exam on time, you should discuss this with Professor Shapiro, preferably in advance. (Even if you're sick in bed at home, you should still be able to make a phone call or send an email.)

**Grading and Evaluation:** Grades will be computed approximately as follows:

- 50% Assignments (Written Exercises and Programming Projects)
- 20% Midterm
- 30% Final

**Academic Integrity:** Unless otherwise specified, you are to complete assignments individually. You may discuss the assignment in general terms, but the code you write must be your own. You are encouraged to discuss ideas, approaches, concepts, bugs, etc. In English, but you may not show or give your code to anyone except this course's TA and instructor. You are not allowed to write code with another student on an assignment or to show another student your solution to an assignment. Referring to solutions from this or other courses from previous quarters is also considered cheating. Taking someone else's program and changing the variable names is also cheating; it is still the same program, and we will catch it. **DON'T DO IT!**

**Communications:** The course message board is a good medium for discussing the course, getting help on assignments, and staying in touch outside of class hours. You can also email the instructor (for concepts) or TA's (for concepts and Java) or go to office hours. The course staff will sometimes post announcements to the email list, and you will be responsible for anything posted. You will be automatically subscribed to the list if you are registered in the course.

**Computing Resources:** We will use Java 7 for programming assignments. We recommend, although we will not require, that you use the Eclipse development environment. The College of Arts & Sciences Instructional Computing Lab is the designated lab for this course, but the software should also be available in public campus labs. Links for downloading and installing Java and Eclipse can be found on our course web page.

**Topic List:**

- Introduction to Algorithm Analysis
- Lists, Stacks, Queues
- Trees, Hashing, Dictionaries
- Heaps, Priority Queues
- Sorting
- Disjoint Sets
- Graph Algorithms
- Advanced Data Structures and Applications

### **CSE 373 – First Day Assignments**

1. Review Java and explore Eclipse
2. Readings in Weiss (We will not cover everything in class; much of it is review.)
  - For Wednesday: Weiss 3.1-3.7 Lists, Stacks, and Queues (for Assignment #1)
  - For Friday: Weiss 1.1-1.6 Mathematics Review and Java
  - For Monday: Weiss 2.1-2.4 Algorithm Analysis
3. Fill out the poll for the help sessions. The link (<https://catalyst.uw.edu/webq/survey/ezgi/298858>) will be emailed to the class list.