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# Lamar University

COSC 1373-01, Spring 2004

## Principles of Computer Science I (Java)

MWF 11:15 AM ~ 12:05 PM, Maes 106

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Instructor: Dr. Chung-Chih Li

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Office Hours: MWF 9:30 ~ 10:30 AM or by appointment

### Course Description and Topics:

This is an introductory course designed to teach you how to learn a programming language and the concept of solving problems by programming. In particular, Java is the chosen programming language we are going to learn in this course. Java is a relatively new programming language, which was designed with Object-Oriented programming paradigm and Web applications in mind. As the Internet rapidly expands, Java has become one of the most popular programming languages and a tremendous amount of rich packages have been developed.

After a very brief introduction to the major components of computers and the underlying strategy of solving problems, we will study the major features of Java. The topics to be covered include the difference between Java Applications and Java Applets, control structures, methods, scopes, arrays, objects-based programming, file I/O, exception handling, and recursion. Also, we will learn how to analyze the complexity of a program in terms of the efficiency of running the program. This course will work together with a lab section where Eclipse will be used as the programming environment. However, we do not assume any particular programming environment in this class.

### Prerequisites:

No specific prerequisites are needed for this course. Nevertheless, some basic concepts of algebra, sets, and functions may help, but we can fix and clarify any misconceptions whenever occur in the class. There is no need to have any experience of programming, but a certain experience of working with computers may help you to take off at the beginning without too much frustrating.

### Textbook:

*Java, How to Program, Fifth Edition*

by H.M. Deitel and P.J. Deitel, Prentice Hall, 2003

**Grading Policy:** Total points 750: assignments(40%), tests(40%), pop quizzes(13%), attendance(7%).

Points	Grade	
640 ~ 750	A	Excellent
500 ~ 639	B	Good
400 ~ 499	C	Satisfactory
300 ~ 399	D	Passing
0 ~ 299	F	Failure

Your grade will be given according to your total points and the table above.

**Assignments:** (300 points)

About 10 assignments are expected. Some of the assignments will be programming assignments. Late works will be graded with penalty.

Students are encouraged to discuss assignments and help each other. However, this does not include either **entirely** or **partially** copying or modifying someone else's programs. An assignment with any plagiarism involved will receive 0 point, whether it's an original work or a copy.

**Tests:** (300 points)

Two midterms and one final, each worth 100 points. **The first midterm will be close book;** the second one and the final will be open book. All tests are accumulative. You will receive 0 point for any absent test. No makeup test will be given. These rules also apply to quizzes.

Tentative dates:

Midterm I	100 points	Feb. 16 (6th week, Monday)
Midterm II	100 points	Mar. 22 (11th week, Monday)
Final Exam	100 points	May 5 (17th week, Wednesday)

**Pop quizzes:** (100 points)

Some pop quizzes will be given impulsively at the beginning of the class. A typical quiz takes about 10 minutes. If you were 10 minutes late, you would lose the chance and get 0 point. Each quiz carries as many as 10 points to your tally. The coverage of every quiz is also accumulative.

**Attendance:** (50 points)

About 10 attendances will be taken randomly. An attendance on a day when the roll is checked contributes 5 points towards the tally. In other words, an absence costs 5 points if attendance is taken, and may cost as many as 10 points if a quiz is given.

**Academic Honesty:**

Cheating, plagiarism, collusion, abuse of resource materials, and their consequences are defined and described under the section of Academic Affairs in the *Student Handbook*.

Students giving away academic works for assignment offered for credit to other students working on the same assignment will be considered as guilty as academic dishonesty, and will receive the same penalty.

## Tentative Topics and Schedules for COSC 1373-01

Week	Topics	Reading
1: Jan. 12	(01/14, semester begins, 01/15 1st class), introduction to computers, problems and problem solving, algorithms	syllabus, chapter 1
2: Jan. 19	(01/19 Monday, MLK's birthday, no class), algorithms, your first Java program, what inside?	2.1 ~ 2.3
3: Jan. 26	Input and output dialog boxes, arithmetic, relational operators	2.4 ~ 2.8
4: Feb. 2	Java applets, drawing strings and lines, the Internet, HTML, and appletviewer	3.1 ~ 3.6
5: Feb. 9	Control structure, if statements, nested if statements	4.1 ~ 4.6
6: Feb. 16	<b>(Midterm 1, 02/16 Monday)</b> , While loops, nested loops, case study	4.7~ 4.13
7: Feb. 23	Compound, increment and decrement operators, primitive data types, do-while loops	5.1 ~ 5.5
8: Mar. 1	do-while loops, switch, break, continue, logical operators	5.5 ~ 5.10
9: Mar. 8	(Spring break, no class)	catch up
10: Mar. 15	Methods, arguments, API package, scopes	6.1 ~ 6.9
11: Mar. 22	<b>(Midterm 2, 03/22, Monday)</b> , scopes, method of classes, overloading	6.9 ~ 6.11
12: Mar. 29	Arrays, references and parameters, passing arrays	7.1 ~ 7.6
13: Apr. 5	Sorting and searching arrays, multidimensional arrays	7.7 ~ 7.9
14: Apr. 12	OOP, abstract data types, class scopes, member access, constructor, set and get	8.1 ~ 8.8
15: Apr. 19	Class composition, garbage collection, creating packages, package access	8.9 ~ 8.16
16: Apr. 27	Exception handling, file I/O, recursion	15.1 ~ 15.3, 17.1 ~ 17.7, 6.12 ~ 6.14
17: May 3	<b>Final Examination, May 5 Wednesday 8:00 ~ 10:30 AM</b>	