

CECS 174: Introduction to Programming and Problem Solving

<http://www.cecs.csulb.edu/~monge/classes/174/2009Fall/>

California State University Long Beach
College of Engineering, CECS Department
Course Syllabus for *Fall 2009*

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Course Day and Time: Lectures MW 8:00-8:50am in ECS 302, Labs MW 9:00-10:15am in ECS 403

Final Exam Day and Time: **Monday December 14, 8:00 – 10:00AM, ECS 302.**

Catalog Description: Prerequisite: MATH 113 (or equivalent). Introduction to basic concepts of computer science and fundamental techniques for solving problems using the Java programming language. Structured problem solving, object-oriented programming, programming style. Applications to numerical and non-numerical problems.

Required Materials

- Big Java, 3rd Edition by Cay Horstmann. On the web: <http://www.horstmann.com/bigjava.html>
- CECS Department Computer Account -- you will get one the first day of class!
- Reliable e-mail service! Verify e-mail address that's registered with MyCSULB
- Download and install the necessary software to work on the assignments on your own computer; information about the needed software will be available from the class web page.

Course Objectives: Upon successful completion of this course, a student should have:

- An understanding of terminology: program, software, hardware, memory address, byte, operating system, CPU, algorithm, classes, objects, methods, parameters
- Knowledge of: software life cycle, fundamental data types, the structure of Java programs, compilation process, testing and debugging a program, programming style, JavaDoc, scope of variables, object oriented design.
- An ability to: write a Java program that solves well-defined small problems; choose appropriate data types; declare variables; assign values to variables; use basic input and output of variables; program with logical expressions; structure while and for loops; design loops controlled by different artifacts; write conditional statements; declare, initialize and access an array; use Java packages; declare a method; build classes to perform a task; write methods that calculate and return values; design and write a design sheet for an algorithm; use strings.
- An ability to communicate information through writing program design sheets and algorithms.

Course Topics: The following is a tentative list of topics that will be covered in this course. The topics listed can all be found in many introductory texts on solving problems via programming.

- Introduction to the basic concepts of computer science
- Introduction to the fundamental techniques for solving problems using a programming language
- The Java Compiler and JVM runtime environment
- Programming style, documenting code with JavaDoc
- Java primitive data types and their operators
- Java String class and its methods

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- Selection (if statement) and repetition statements (for loop, while loop, for-each loop)
- Arrays and Matrices
- Classes and Methods
- Inheritance: Extending existing classes with modified behavior
- Use of Java packages

Learning Activities: To achieve the course objectives, the student will be involved in several activities:

- **Readings:** The lectures will follow the topics as presented in the book and as supplemented by handouts. **The student is responsible for reading the related sections prior to each lecture.** The topics covered will be identified for the student to locate the related sections to read in the book.
- **Lectures:** students are expected to attend every lecture; this is where the topics will be discussed and where other learning activities will take place. You are responsible for ALL information and material presented both in lectures and in labs, thus attendance is expected. Class participation is highly encouraged -- ask questions whenever something is not clear, provide your perspective when asked, etc.
- **Labs:** attendance to labs is mandatory as the lab work can only be done during lab time. In the labs, students will put to practice what is learned from the readings and the lectures. There will be approximately ten lab activities.
- **Homework assignments:** assignments will be handed out approximately one every 2 or 3 weeks, for a total of approximately 5 assignments.
- **Quizzes:** There will be **five quizzes**; a date for each will be announced about one week before the quiz. Depending on the quiz, you will have about 25 to 30 minutes to complete. Some of the quizzes might be in the computer lab where you will need to solve a programming problem.
- **Exams:** there will be one midterm exam and a cumulative final exam. A portion of the midterm exam will take place in the lab.

Your overall grade will be computed as follows:

Quizzes	20%
Homework Assignments	20%
Labs	15%
Midterm exam	25%
Final exam	20%
TOTAL	100%

- **Class grades** will be determined using the following traditional scale:
A:90...100% B:80...89% C: 70...79% D: 60...69% F: 59% and below
- Since each class and activities assigned are unique, the grading scale may vary. In particular, I reserve the right to lower the cutoff grades above, but I will not raise them. The grading scale to be applied will be determined only at the end of the semester. Thus, to guarantee an A in the class you need to have achieved at least 90% of the points in the class.
- If you do not agree with the grade on any activity, you may request that the grading of the activity be re-evaluated. The request must be made within 48 hours of having received the graded activity. The graded activity must be submitted to the instructor at the time of the request.

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Information regarding Plagiarism and Cheating:

- Each student must complete the coursework on his/her own, unless directed to work in groups.
Cheating and plagiarism of any form will not be tolerated.
- All students involved in plagiarized work or in which cheating has taken place will receive **a zero grade for the assignment** and their **class grade will be lowered by a whole letter grade. NOTE:** Depending on the severity of the situation and at the discretion of the instructor, a **failure** grade may be assigned for the class. Furthermore, the instructor may **not authorize requests to withdraw from the class** by students involved in plagiarism.
- At the discretion of the instructor, any student involved in a plagiarism/cheating incident may be reported to university officials so that further disciplinary actions may be taken. See the CSULB Catalog concerning plagiarism/cheating.
- You can discuss the course material – not the solutions on active assignments – with your classmates, but the work you submit for a class activity must always be your own.
- If you use external sources, you must provide adequate citations to each and every source used, everywhere that it is used, not doing so constitutes plagiarism. Sources could be other books, web sites, instructors, etc. A complete list of references used must be provided.
- Do not use other people's work without explicit permission or give your work to others (intentionally or not). E.g., do not leave print outs of your work unattended, do not leave your computer unattended and do not forget to log out completely -- this can result in cheating.

Late policy

- Assignments with a due date must be submitted as specified, no late work will be accepted unless otherwise pre-arranged with the instructor. Permission to submit late work is granted only under justified circumstances such as illness.
- Graded activities can only be made up with a valid excuse (official notice from doctor or the dean) *and at least two days advance notice except in the case of a medical emergency.*

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Important Information from CSULB

Withdrawal

The drop date this semester is **November 20**. You must drop by **September 14** to avoid getting a **W** in your transcript! This is very important due to a new **University policy limiting the number of withdrawals to 18 units**. **Dropping courses during the final three weeks of instruction is not permitted** except in the case of accident or serious illness occurring during this period. Ordinarily, withdrawals in this category will involve total withdrawal from the university and require approval of the instructor, the chairperson, and the dean. Do not wait until the last minute to seek these approvals. You should allow for the possibility that your instructor, as well as the department chairperson, may be unavailable on a given day.

The page with the following URL has additional important dates for the current semester:

<http://www.csulb.edu/depts/enrollment/dates/registration.html>

Cheating and Plagiarism

The University Catalog provides information to students regarding cheating and plagiarism. You can read it online here: http://www.csulb.edu/divisions/aa/catalog/2009-2010/academic_information/cheating_plagiarism.html. The campus policy can be found here: <http://www.csulb.edu/divisions/aa/research/our/information/policies/cheating/>

Student Academic Honors Pledge

The University Catalog states the following:

The Student Academic Honors Pledge was approved by the Academic Senate and Associated Student Senate in 2004. The pledge states, "I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination."

Recommended Student Load

http://www.csulb.edu/divisions/aa/catalog/2009-2010/academic_information/student_unit_load.html

Students are expected to spend, on the average, two hours of preparation and study for each hour of class time. Thus, a **three-unit lecture or discussion course normally demands a commitment of nine hours per week averaged over the semester**, with the class meeting for three hours a week. This may be considered sufficient time to enable a student to do satisfactory work. **Students who desire to achieve "A" or "B" grades may wish to spend proportionately more time in their studies.**

Definitions of Grades and Grading Symbols

The University Catalog defines the grades to be assigned as follows – this is taken from the online catalog found at: http://www.csulb.edu/divisions/aa/catalog/2009-2010/academic_information/grading_procedures.html. The following definitions apply to grades assigned in all undergraduate and graduate courses.

“A” – **Performance of the student has been at the highest level**, showing sustained **excellence** in meeting all course requirements and exhibiting an unusual degree of **intellectual initiative**.

“B” – Performance of the student has been at a **high level**, showing consistent and effective achievement in meeting course requirements.

“C” – Performance of the student has been at an **adequate level**, meeting the **basic requirements** of the course.

“D” – Performance of the student has been **less than adequate**, meeting only the minimum course requirements.

“F” – Performance of the student has been such that minimal course requirements have not been met.