

# CS010 – Introduction to Computer Science I

## Spring, 2006

### Course Information

**OVERVIEW:** The course introduces students to the field of Computer Science, focusing mainly on programming in the language Scheme without assuming any prior programming experience. We will introduce various concepts from CS including: logical thinking and problem solving, algorithm development, software development process, abstraction, and object-oriented programming. Although the majority of time will be spent learning and using Scheme, the focus throughout will be on learning foundational concepts of Computer Science using computer programming (in Scheme) as the primary vehicle.

**PREREQUISITES:** Fulfillment of the mathematics competency requirement..

**COURSE OBJECTIVES:** (from the Westmont catalog) “No prior computer or programming experience required. Basics of programming including language features, disciplined programming style, and documentation. Problem solving, algorithm design, and the software development process.” The successful student in this course will have the programming skills to take moderately scaled problems, formulate an algorithmic solution, and implement that solution in Scheme. Such students will also have acquired the conceptual framework for continuing study in Computer Science.

**LOCATION:** Voskuyl Library 106

**DAYS & TIME:** Tuesday and Thursday, 1:15-3:05 pm.

**TEXT:** *How To Design Programs: An Introduction to Programming and Computing*, by Matthias Felleisen, Robert Bruce Findler, Matthew Flatt, & Shriram Krishnamurthi. MIT Press: Cambridge, Mass. (2001).

**COURSE WEBPAGE:** <http://www.westmont.edu/~iba/teaching/CS010>

### Instructor Information

**INSTRUCTOR:** Dr. Wayne Iba

**OFFICE:** New Math/CS Modular Building

**OFFICE HOURS:** TBD

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## **Course Assignments, Requirements and Policies**

**EXERCISES:** Exercises are an ideal way to learn the skills and concepts that are the focus of this course. You are expected to have the competence to solve every exercise at the end of each section of your text, although a subset of problems will be assigned. Plan to turn your solutions in well before the deadline as late work may not be accepted. (Exceptions may be made at the sole discretion of the instructor.)

**PROJECT:** During the latter portion of the semester, students will be given a more substantial programming assignment that will involve several phases of development. Each phase will have an associated deliverable that will be submitted for grading; together, the project deliverables will represent the primary component of the overall grade for the course. Failure to complete one or more installments of the project will significantly impact your grade in a negative manner.

**TESTS & EXAMS:** There will be five to ten exams during the semester and, a comprehensive final exam. Your lowest exam score will be ignored. Exams must be taken at the scheduled time unless arrangement is made with the instructor *in advance*.

**ATTENDANCE:** To learn a language, you must use it. In this respect, Scheme is no different from French. In class, we will go over numerous examples and you will write programs during lab time. Therefore, attendance is required. If you have a reason for missing more classes than allowed by Westmont policies, discuss the matter with me.

**GRADING:** Students will be evaluated on how well they master the skills of program design as demonstrated using the Scheme programming language. Both correctness and style are important and will be evaluated on homeworks, exams, and the project. A final weighted score will be based on the following: project (40%), collective exams (30%), exercises (30%). The final weighted score, will yield a letter grade according to the standard scheme where .9 and above yields an A, .8 to .9 a B, and so on. I reserve the right to lower the thresholds for some or all of the letter grades.

**ACADEMIC HONESTY:** As in every area of life, I expect that you will conduct yourself honestly within the context of this class. You are expected to have read and agreed to the Academic Dishonesty policy as part of the general Westmont Academic Policies, as well as the specifics of the policy on Plagiarism. Do not attempt to receive credit for work that is not your own without properly acknowledging sources via appropriate citations or references. You are encouraged to get help from your peers, but be sure that you acknowledge such help and that you understand the issue on which help was received. You should not be using or allowing electronic copies of any portion of code for the exercises or project (unless distributed by me). The consequences of violating the trust I implicitly extend to you will be according to the Westmont policy; but more serious will be the damage done to our academic relationship.