Georgia State University
Department of Computer Science

CSc 2010
Spring, 2010

Raj Sunderraman

Course Syllabus

Course Title

Introduction to Computer Science

Computer Record Number (CRN)

16029

Course Description

A first introduction to the discipline of computer science. Topics include algorithmic foundations, hardware concepts, virtual machine concepts, software systems, applications, and social issues.

Prerequisite

None

Class Time and Place

T, R 9:30–10:45 p.m.
Room 208, Classroom South

Instructor

Prof. Raj Sunderraman
Room 1452, One Park Tower (34 Peachtree Street)
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Email: *raj@cs.gsu.edu*
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Office Hours:
T, R 11:00–1:00 and by appointment

Graduate Assistants

Promita Bose (*pbose1@student.gsu.edu*)
Stefanie Markham (*smarkham@gsu.edu*)
Sasibala Modala (*smodala1@student.gsu.edu*)

Textbook

Deepak Kumar, *Learning Computing with Robots*. Download from *www.roboteducation.org* (click on "textbook" at left).

Topics

1. The World of Robots
2. Personal Robots
3. Building Robot Brains
4. Sensing From Within
5. Sensing the World
6. Insect-Like Behaviors
7. Behavior Control
8. Sights & Sounds
9. Image Processing & Perception
10. Artificial Intelligence

Grading

Programs, projects, quizzes, and exams will be given numerical scores. These scores will be averaged at the end of the semester using the following weighting:

Programs	20%
Projects	10%
Quizzes	15%
Test 1	15%
Test 2	15%
Final exam	25%

Letter grades will be determined by ranking the numerical averages of all students in the class. Cut-off points for grades will depend on the performance of the class as a whole; however, they will be no higher than 90 (A), 80 (B), 70 (C), and 60 (D). Plus/minus grading will be in effect for this course.

Following departmental policy, scores on assignments cannot raise a student's overall average but may lower it. At the end of the semester, two averages will be computed for each student (with and without assignments). The lower of the two averages will be used to compute the student's letter grade.

Example 1. A student has an average score of 90 (out of 100) on programming assignments and an average score of 85 on projects. The student has an average score of 80 on the quizzes. Finally, suppose the student has scores of 75 and 81 on the tests, and a score of 77 on the final exam. With programs and projects included, the student's average will be

$$90 * .20 + 85 * .10 + 80 * .15 + 75 * .15 + 81 * .15 + 77 * .25 = 81$$

Without programs and projects, the student's average is

$$(80 * .15 + 75 * .15 + 81 * .15 + 77 * .25) \ / \ .70 = 78$$

The average without programs and projects is lower, so that number is used as the overall average. An average of 78 is guaranteed to be at least a C, because it falls between 70 and 80. There is a possibility that an average of 78 will be a C+, B–, or higher grade, depending on the performance of the class as a whole.

Example 2. Assume that the student's scores are the same as before, except that the test scores are 95 and 92, and the final exam score is 91. With programs and projects included, the student's average will be

$$90 * .20 + 85 * .10 + 80 * .15 + 95 * .15 + 92 * .15 + 91 * .25 = 89$$

Without programs and projects, the student's average is

$$(80 * .15 + 95 * .15 + 92 * .15 + 91 * .25) \ / \ .70 = 90$$

The average with programs and projects is lower, so that number is used as the overall average. An average of 89 is guaranteed to be at least a B, because it falls between 80 and 90. There is a possibility that an average of 89 will be a B+, A–, or A, depending on the performance of the class as a whole.

Quizzes

There will be five quizzes given at the beginning of class. Tentative quiz dates are January 21, February 4, March 4, March 18, and April 15. The lowest quiz grade will be dropped. Missed quizzes cannot be made up.

Tests

There will be two tests given during class (tentative dates: February 18 and April 1). If you are forced to miss one of these tests because of illness or other catastrophe, you must notify the instructor in advance. Before a makeup exam will be given, you must supply written evidence (e.g., a note from a physician or hospital) that you were unable to take the exam at the original time. Without such evidence, you will receive a score of zero for the test. Seating charts may be used for the tests, and may change from one test to the next.

Final Exam

A two-hour final exam will be administered on Thursday, May 6, at 8:00 a.m. A seating chart may be used for the final exam, and it may be different from the ones used for prior tests.

Programming Assignments

There will be six programming assignments. Each assignment will be worth 20 points. The penalty for late assignments will be 4 points per calendar day.

Projects

There will be two projects, each worth 20 points. Projects will be demonstrated in class. Late projects will not be accepted.

Teams

Programming assignments and projects are to be done in teams of two. In rare cases, a person may work alone.

Attendance

Regular attendance is expected; please notify me in advance if you will be unable to attend because of business travel or other valid reason. Although the grading policy does not take attendance into account, failing to attend may adversely affect your grade, since exams will cover material discussed in class as well as in the assigned readings; also, hints related to the assignments will be given in class.

Academic Honesty

All work submitted for grading must be the student's own work. A team that submits a programming assignment or project that copies the work of another team, in whole or in part, will be assigned a grade of zero for that assignment. Any student found to be cheating on an examination will receive a score of zero for that exam. Cheating on an assignment or exam may result in dismissal from the course and notification of the Dean of Students.

Classroom Etiquette

Cellular phones must be turned off during class. Please do not arrive late, leave early, or go in and out of class, since this behavior is very distracting. COMPUTER USE DURING LECTURES IS PROHIBITED.

Withdrawals

The last day to withdraw is Monday, March 1.

Disclaimer

The course syllabus provides a general plan for the course; deviations may be necessary.

Course Schedule

Tuesday	Thursday
Jan. 12 Chapter 1	**Jan. 14** Chapter 2
Jan. 19 Chapter 3	**Jan. 21** **Quiz 1** Chapter 4
Jan. 26 **Program 1 due** Lab session -1	**Jan. 28** Chapter 4
Feb. 2 Chapter 5	**Feb. 4** **Quiz 2** Chapter 5
Feb. 9 **Program 2 due** Lab session – 2	**Feb. 11** Chapter 6
Feb. 16 Chapter 6	**Feb. 18** **TEST 1 (Ch. 1-5)**
Feb. 23 **Program 3 due** Lab session – 3	**Feb. 25** Chapter 7
Mar. 2 **Quiz 3** Chapter 7	**Mar. 4** **Quiz 3** Chapter 8
Mar. 9 NO CLASS - SPRING BREAK	**Mar. 11** NO CLASS - SPRING BREAK
Mar. 16 **Quiz 4** **PROJECT 1 DEMONSTRATIONS**	**Mar. 18** **Quiz 4** Chapter 8
Mar. 23 **Program 4 due** Lab session – 4	**Mar. 25** Chapter 8
Mar. 30 Chapter 9	**Apr. 1** **TEST 2 (Ch. 6-8)**
Apr. 6 **Program 5 due** Lab session – 5	**Apr. 8** Chapter 9
Apr. 13 **Quiz 6** Chapter 9	**Apr. 15** **Quiz 5** Chapter 10
Apr. 20 **Program 6 due** Lab session – 6	**Apr. 22** Chapter 10
Apr. 27 Chapter 10	**Apr. 29** **PROJECT 2 DEMONSTRATIONS**
	May. 6 **FINAL EXAM** (8:00–10:00 AM)