

CS 1521 - Computer Science II

Section 1

Spring Semester 2008

Course Information

Instructor	Steve Holtz		
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Phone	726-7664		
Office	Heller Hall 319		
Office Hours	Tuesday and Thursday 10:45 AM to 11:45 AM Wednesday 4:00 PM to 6:00 PM Friday 1:45 PM to 2:45 PM		
Course Web Site	http://www.d.umn.edu/~sholtz/cs1521-1/s08/index.php		
Teaching Assistants	<u>Section 5</u>	Andrew Larson	lars2865@d.umn.edu
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	<u>Section 11</u>	Sarika Mehta	mehta051@d.umn.edu
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	<u>Section 17</u>	Prafula Bhalekar	bhale001@d.umn.edu
Text(s)	Caranno, Frank M. <i>Data Abstraction and Problem Solving with C++: Walls and Mirrors</i> 5 th Ed. Addison-Wesley, 2007.		
Clickers	You are required to purchase (if you do not already own) a student response system (SRS) clicker in order to participate in <i>ConceptTests</i> during lecture. This will be an integral part of each lecture. More information on the use of clickers during this course follows.		
Lecture	Section 1 - 3:00 to 3:50 PM on Monday, Wednesday, and Friday in LSci 175		
Discussion	Section 4 - 9:00 to 9:50 AM on Tuesday in HH 302 Section 8 - 11:00 to 11:50 AM on Tuesday in HH 302 Section 10 - 12:00 to 12:50 PM on Tuesday in HH 302 Section 12 - 1:00 to 1:50 PM on Tuesday in HH 302 Section 16 - 3:00 to 3:50 PM on Tuesday in HH 302		
Lab	Section 5 - 9:00 to 9:50 AM on Thursday in MWAH 177 Section 9 - 11:00 to 11:50 AM on Thursday in MWAH 177 Section 11 - 12:00 to 12:50 PM on Thursday in MWAH 177 Section 13 - 1:00 to 1:50 PM on Thursday in MWAH 177 Section 17 - 3:00 to 3:50 PM on Thursday in MWAH 177		

Course Prerequisite(s)

CS 1511 - Computer Science I

Course Description

Continuation of introduction to computer science. Methods for procedural and data abstraction. Focus on abstract data types. Algorithm analysis, software design and issues in ethical use of computers. Requires implementation of significant programming projects.

Course Objectives

Computer Science II continues student's introduction to the C++ language and the concepts of abstraction, encapsulation, polymorphism and inheritance. The basic design principles of object-oriented design are discussed and the concept of an ADT (**Abstract Data Type**) is introduced. The ADT concept is then elaborated on in a series of assignments and lectures covering the basic ADTs: lists, stacks, queues, tables, trees, priority queues, and graphs. By the end of the course, the student should have mastered the main concepts of object-oriented programming (OOP) and have successfully completed programming assignments in C++ on each of the basic ADTs.

The Computer Science Department has specific goals associated with what you are expected to learn through taking this course. Please see the "[Course Outcomes](http://www.d.umn.edu/cs/asse/outc/CS1521.pdf)" found at <http://www.d.umn.edu/cs/asse/outc/CS1521.pdf>.

Policies

Exams	<ul style="list-style-type: none"> • Exams are closed book, closed calculator, and closed notes. • The two hour final exam is cumulative. • It is departmental policy not to return final exams. • No make-up exams will be given without the prior consent of the instructor.
Quizzes	Written quizzes will be given during discussion sessions. Quizzes cannot be made up for any reason. Two lowest quiz scores will be dropped.

Lectures

- Lectures will focus around *ConcepTests*, a teaching tool developed by Physics Professor Dr. Eric Mazur of Harvard University.
- A *ConcepTest* is a multiple choice question posed during lecture that is designed to challenge your understanding of a concept that was just covered. The student response system (SRS) clickers will be used to implement the *ConcepTests*.
- *ConcepTests* are not graded. Whether you answer correctly or incorrectly will not affect your grade. However, your participation in *ConcepTests* will be tracked and can affect your grade (see grading policies below).
- You will be required to read the assigned reading material before each lecture session. Not all of the assigned reading material will be covered during lecture. However, you are responsible for knowing all of it (i.e. this material *can* show up on the exams).

Reading Quizzes

- A reading quiz, consisting of 3 questions, will be held in the 24 period ending prior to each lecture period. The quiz will cover the material that you are responsible to have read in preparation for that lecture.
- Reading quizzes will not count directly toward your grade, but they can have an affect your grade through extra credit points (see grading policies).
- Each quiz will be graded as follows:
 - 3 points - you are well read.
 - 2 points - you have read the material.
 - 1 point - you probably just skimmed over the material.
 - 0 points - you evidently didn't read the material (or you didn't take this reading quiz).
- Reading quizzes will be held via TestPilot from the course Web site, where they will be available for approximately 24 hours before each lecture.
- Reading quizzes cannot be made up for any reason. They do not directly affect your grade and thus there is no reason to make them up.
- You will not be reminded about the reading quizzes. It is your responsibility to go on-line and take these quizzes before each lecture.

Extra Credit

- Extra credit (EC) points are earned through participating in:
 1. Reading Quizzes
 2. *ConcepTests*
- EC points are applied in two ways:
 1. Directly to your final score.
 2. As a weight applied to your final exam (thus effectively reducing the weight of the final exam). See grading policy.

Grading

What	Weight	Date
Midterm 1	16	Wed, February 27 th , 3:00 to 3:50 PM
Midterm 2	16	Wed, April 9 th , 3:00 to 3:50 PM
Final Exam	26	Tue, May 13 th , 4:00 to 5:55 PM
Quizzes (8)	12	See course schedule
Homework (9)	4.5	See course schedule
Labs (15)	7.5	See course schedule
Projects (7)	18	See course schedule
Extra Credit	5	See policy below
Total Weight	100	

To calculate your current Total Weight, use the following worksheet:

	Actual Scores (AS)	Running Total of Actual Scores (RAS)	Maximum Points per Assignment (MP)	Running Total of Maximum Points (RMP)	Section Percentage
Homework 1					$HW = RAS/RMP$
Homework 2					
Homework 3					
Homework 4					
Homework 5					
Homework 6					
Homework 7					
Homework 8					
Homework 9					
Lab 1					$L = RAS/RMP$
Lab 2					
Lab 3					
Lab 4					
Lab 5					
Lab 6					
Lab 7					
Lab 8					
Lab 9					
Lab 10					

Lab 11					
Lab 12					
Lab 13					
Lab 14					
Lab 15					
Project 1					
Project 2					
Project 3					
Project 4					
Project 5					
Project 6					
Project 7					P = RAS/RMP
Reading Quizzes					RQ = AS/MP
<i>ConcepTest</i>					CT = AS/MP
Quiz 1					
Quiz 2					
Quiz 3					
Quiz 4					
Quiz 5					
Quiz 6					
Quiz 7					
Quiz 8					
Quiz 9					
Quiz 10					Q = RAS/RMP
Midterm 1					M1 = AS/MP
Midterm 2					M2 = AS/MP
Final					F = AS/MP

Scratch your two lowest quiz scores (only eight of them will count) from the **AS** column of the quiz row. If you remove these lowest scores, then remove their corresponding total points from the **RAS** column.

Calculate the Section Percentage for each row by dividing the appropriate column totals indicated by the equation in this column. For example, assuming that in the homework row we have the **RAS** column showing a total sum of 78 and the **RMP** column showing a total sum of 90, then to calculate the **HW** Section Percentage, we have $HW = RAS/RMP = 78/90 = 0.867$.

Calculate your extra credit (**EC**) points as follows. **EC** points are earned through participation in *ConcepTests* (**CT**) applied to your reading quiz (**RQ**) scores. If your **CT** percentage is:

- From 0.8 up to and including 1.0 [80% to 100%], then **RQ** is applied 100 percent toward your **EC** points.
- From 0.5 up to (and excluding) 0.8 [50% to 80%), then the **CT** percentage is applied as a weight on **RQ** toward your **EC** points.
- From 0.0 up to (and excluding) 0.5 [0% to 50%), then you get no **EC** points (**EC** = 0).

For example: Suppose your **CT** computes to 0.8 (you've participated in 80% of the *ConcepTests*) and your **RQ** is 0.692 (you've earned 83 out of a possible 120 on the reading quizzes). Then, **RQ** counts 100%, and your **EC** points are calculated as: **EC** = **RQ** = 0.692.

Another example: Suppose your **CT** computes to 0.65 (you've participated in 65% of the *ConcepTests*) and your **RQ** is 0.958 (you've earned 115 out of 120 points on the reading quizzes). Then, **RQ** only counts 65%, and your extra credit point: **EC** = **CT** * **RQ** = 0.65 * 0.958 = 0.623.

A third example: Suppose your **CT** computes to 0.48 (you've participated in 48% of the *ConcepTests*). Then your **EC** points are zero no matter what score you've earned on your reading quizzes.

Plug the results in the last column into the expression below and solve for **TotalWeight**.

$$\text{TotalWeight} = HW * 4.5 + L * 7.5 + P * 18 + Q * 12 + M1 * 16 + M2 * 16 + EC * 5 + F * (26 - EC * 5)$$

You can also use the [Grade Estimator](#). This tool is available from the course Web site.

Final grades are based on your **TotalWeight** with:

- A- cutoff at 90
- B- cutoff at 80
- C- cutoff at 70
- D cutoff at 60
- F is below 60

These cutoffs may be lowered, but they will not be raised.

Scores will be posted on the "Grades" page of the course Web site:

<http://www.d.umn.edu/~sholtz/cs1521-1/s08/grades/index.html>. You will be required to enter your UMD X.500 (e-mail) username and password to access your scores.

Syllabus or Schedule Revision	The instructor reserves the right to make changes to the course syllabus or schedule at any time. Revisions will be posted on the course Web site and announced during lecture.
Course Material	<p>You are responsible for reading assigned textbook material and for obtaining any material covered in lecture, discussion, and lab, including:</p> <ul style="list-style-type: none"> • lecture notes. • assignments and handouts. • turning in projects, labs, and homework. • viewing films (if any).
Missed Class Sessions	<p>If you are unable to attend a class meeting (lecture, lab, or discussion), it is your responsibility to obtain any notes, assignments, and extra copies of handouts from a fellow student.</p> <p>If you must miss a class meeting where an assignment must be turned in, you should either:</p> <ul style="list-style-type: none"> • turn in the assignment early. • prearrange the absence with the instructor.
Academic Dishonesty	<p>Many of the assignments in this course will involve working in small groups. For these assignments you will be required to put your name and the name(s) of your collaborator(s) on the paper that you turn in. Each assignment will have some aspect that must be done individually. Thus, you will always turn in individual copies of each assignment.</p> <p>For some of the assignments, you will be required to do your own work. For these assignments, submissions that are overly similar could result in the involved individuals to called into the instructor's office and possible plagiarism charges imposed. The repercussions resulting from these charges will vary on a per-case basis and can be turned over to the University as a charge of academic dishonesty.</p> <p>Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. UMD is committed to providing students every possible opportunity to grow in mind and spirit. This pledge can only be redeemed in an environment of trust, honesty, and fairness. As a result, academic dishonesty is regarded as a serious offense by all members of the academic community. In keeping with this ideal, this course will adhere to UMD's Student Academic Integrity Policy, which can be found at http://www.d.umn.edu/assl/conduct/integrity/. This policy sanctions students engaging in academic dishonesty with penalties up to and including expulsion from the university for repeat offenders.</p>
Student Conduct	The instructor will enforce and students are expected to follow the University's Student Conduct Code (http://www.d.umn.edu/assl/conduct/code/). Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Disruptive behavior includes inappropriate use of technology in the classroom. Examples include ringing cell phones, text-messaging, watching videos, playing computer games, doing email, or surfing the Internet on your computer instead of note-taking or other instructor-sanctioned activities.
Assignments	
<u>Expectations</u>	<p>You are expected to:</p> <ul style="list-style-type: none"> • Attend all lecture and lab sessions. • Put forth your best effort on all group oriented work. If all members of the group put their best effort forward, every member will benefit from these assignments. • Do your own work on all individual portions of assignments and all assignments that have been designed for individual work only. • Feel free to ask and answer code related questions of your fellow students. When you and a fellow student work in this way, you are considered to be "collaborators" and you should report each other as such on the cover sheets to your assignments. • Start all programming-related assignments early so you have ample time to resolve any difficulties. • Delete all files from public lab machines when you are done working on them, including emptying the trash bin. While you will be able to collaborate with fellow students on assignments, you will do this in a structured way that will increase the amount that each collaborator learns through the interaction. You do not want to just "give" your code away to someone else. • NEVER place any of your work on a Web server. Even in a "secret" directory for "just" a couple of minutes. • You should expect to put 15 hours per week (on average) into this course [3 hours of your time for each credit hour]. This includes attending three hours of lecture and two hours of lab/discussion each week. So, you should expect to spend 10 hours per week working on course-related material outside of the formally scheduled course time.
<u>Help</u>	<p>If you need help with a project, start with:</p> <ol style="list-style-type: none"> 1. course materials, such as text, notes, and previous assignments. 2. the TA on duty in HH 314 or MWAH 177.

3. your own TA during their office hours.
4. a tutor at the [UMD Tutoring Center](#) in Solon Campus Center 40.
5. the instructor during office hours.

When e-mailing for assistance with a problem, you must include:

- the course (cs1521) and your lab section number (sec 3) in the subject of your e-mail.
- **ALL** of your source code in your e-mail (attachments work well).

Submissions

Hard copy (paper) source code files and output of projects and some labs are required to be turned in.

- Hard copy submission can be made (in order of preference):
 1. to your teaching assistant at the beginning of your discussion or lab session on the due date.
 2. in your lab section's drop box in MWAH 177 before due date.
 3. to your instructor before or after lecture before due date.

Late Work

Late work will be handled as follows, assignments:

- turned in at beginning of class session on the due date - full credit.
- turned in any later time on the due date or the next day - 25% deduction.
- after one day late - zero points.

Word of wisdom: Start programming your solution to an assignment **early!**

The instructor's consent is mandatory for extensions to assignment due dates. Do **NOT** approach your teaching assistant to obtain a due date extension.

Assignment Points

In order to earn points, each assignment must exceed a threshold of 40% of available points.

Equal Opportunity

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation. As your instructor, I am committed to upholding University of Minnesota's equal opportunity policy. I encourage you to talk to me in private about any concerns you have related to equal opportunity in the classroom. To inquire further about the University's policy on equal opportunity, contact the [Office of Equal Opportunity](#), 255 DAdB, phone: 726-6827, email: equaloo@d.umn.edu.

Students with Disabilities

If you have any disability (either permanent or temporary) that might affect your ability to perform in this class, please inform me at the start of the term. I may adapt methods, materials, or testing so that you can participate equitably. To learn about the services that UMD provides to students with disabilities, contact the [Access Center/Disability Services](#) 138 Kirby Plaza, phone: (218) 726-8217 or TTY (218) 726-7380, email: access@d.umn.edu.

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