University at Buffalo
Department of Computer Science & Engineering
201 Bell Hall – (716) 645-3180

Syllabus

Please read this sheet carefully, and save it for future reference.

Instructors

Name	Office	Phone	Email	Web
Adrienne Decker	130 Bell	645-3180 x 161	adrienne@cse.buffalo.edu	http://www.cse.buffalo.edu/faculty/adrienne

Course Information

Credit hours: 4
Course Website: http://www.cse.buffalo.edu/faculty/adrienne/SP2007/cse191
Monday, Wednesday, Friday 10:00 – 10:50 218 NSC
Recitation Times:

R1	Wednesday	1:00 – 1:50	250 Park
R2	Friday	9:00 – 9:50	106 Talbert
R3	Thursday	6:00 – 6:50	260 Capen

Course Description

This course provides foundational material for further studies in computer science. Topics include logic, sets, logic relations, proofs, functions, mathematical induction, trees, graphs, recurrence relations, and some basic counting theory. CSE 191 is required for computer science and computer engineering majors.

This course is a prerequisite for CSE 250.

This course adheres to the recommendations of ACM's CC2001 curriculum document for a discrete structures course. It covers topics from the following knowledge units: DS1 Functions, relations, and sets, DS2 Basic logic, DS3 Proof techniques, and DS5 Graphs and trees.

Schedule of Topics

The following is a tentative schedule of topics. A more detailed schedule is maintained on the course website and should be checked often for updates.

4 weeks – Logic
4 weeks – Methods of Proof
4 weeks – Sets, Relations, Functions
3 weeks – Graphs and Trees

Course Objectives

At the end of this course, students will be able to apply various proof techniques to prove statements about numbers as well as structures (sets, relations, graphs, trees). Students will also develop an understanding of both

propositional and predicate logic. Students will be able to identify basic characteristics of the structures discussed in the course (sets, relations, functions, graphs, trees) and how each of those structures are used.

Prerequisites

The formal prerequisite for this course is CSE 115 or CSE 113. While this course may not require you to actually program, many of the problems and discussions will use programming references and even pseudo-code. You should be comfortable with basic programming vocabulary as it might appear in the context of examples in the book.

Textbooks and Materials

The required textbook for this course is:

- Judith L. Gersting. 2007. *Mathematical Structures for Computer Science (Sixth Edition)*, W.H. Freeman and Company. (ISBN: 0-7167-6864-X)

There is one recommended text for this course:

- James R. Bush. 2003. *Discrete Mathematics Workbook*, Prentice Hall, (ISBN: 0-13-046327-2)

Additional reading material may be assigned during the course, and will be announced in lecture.

Computing Resources

You will be provided with a CSE undergraduate computing account. However, it is very possible that you will not need to use the department's computing resources during this semester for this course. If time during the semester comes when you will need to use your computer account for an assignment and you are not sure how to use the computing facilities, please make sure that you come to office hours well before the assignment is due so that you can get acclimated to the computing environment.

By virtue of having a CSE account, you receive another email account, whose address is UBitName@cse.buffalo.edu. You can choose to use this email account in addition to your regular UB mail or forward mail sent their to your UB account. In either case any e-mail communication that you send regarding this course must be sent from your CSE e-mail account or your UB e-mail account. Under no circumstances will e-mail from non-UB accounts be acknowledged or answered. You must include an informative subject line in all e-mail, and include your full name in any e-mail correspondence.

All e-mail that we send in reply to your e-mail will be sent to the address from which you sent your e-mail.

Course Organization

The course has both a lecture component and a recitation component. Each component plays a role in helping you achieve the objectives of the course. If you do not participate fully in both you should not expect to do well in the course.

Lectures

The conceptual and theoretical course content will be delivered primarily in the lectures, complemented by readings from the text books. You must review readings prior to attending a lecture, and you are expected to review the readings again, along with any notes you took, after the lecture.

Some of the topics will be difficult. It is therefore absolutely essential that you ask questions whenever something is said which you do not understand.

You are expected to attend all lectures. If you are unable to attend a lecture because of sickness or similar reasons, make sure you get the notes from a classmate. If you are out of class for an extended period of time because of sickness, notify your instructor as soon as possible, and see your instructor immediately upon your return in order to determine how to catch up. If you have missed a significant portion of the semester due to illness, it is recommended that you resign from the course.

Recitations
The recitations are an integral part of the course. In each recitation section, the TAs will answer questions about that week's homework assignment. You are free to ask any questions about the homework as well as any questions about examples presented in class. The exams given in the course will be similar to material given as homework problems, so making sure you understand the homework problems will be a key to success on the exams.

The recitations may also review and extend lecture material and are also an excellent forum for asking more individual questions about the course material than can typically be addressed in lecture.

Recitations do not meet in the first week of classes.

Course evaluation
The following indicates the grade breakdown which I will use in assigning grades in the course. I reserve the right to make small adjustments to the breakdown if I feel it is necessary.

Exam component (65% of final course grade)
There will be ten examinations throughout the term. The exam dates are posted on the course website. Each exam will cover roughly two sections of the text. The sections for each exam also appear on the course website. Each exam is worth 6.5% of your overall course grade for a total of 65%. There is no final exam for this course.

If you miss an examination because of sickness or similar reasons, visit a physician and obtain a note detailing the period during which you were medically incapable of taking the exam. Notify your instructor immediately via e-mail or telephone (voice mail) if you are going to miss an exam, before the exam takes place unless medically impossible. See your instructor as soon as you return to class.

If you miss an examination without a valid excuse, you will receive a zero grade for that examination.

No make-up examination will be available without a valid excuse. You must bring a valid form of picture ID with you to each examination (a UB Card will suffice).

At the end of the semester, you must have a passing average (> 50%) across all ten exams in order to to receive a passing grade in this course.

Presentation/Participation component (25% of final course grade)
This course provides foundational material for other domains within computer science. The purpose of the presentation/participation component of this course is for you to teach your fellow classmates about an interesting area of computer science (or even mathematics) where this material fits in as well as helping to make sure that your fellow classmates understand the material of the semester. The assignment will be completed in stages and more information about this assignment will be given during the first two weeks of class. You must have a passing grade on the presentation assignment in order to receive a passing grade in this course.

Homework component (10% of final course grade)
Homework will be assigned for each section of the book covered. Assignments will be due on the day of the corresponding exam for that section. No late homework assignments will be accepted. Homework solutions slid under my office door or inserted into my mailbox will not be accepted. Consult the course schedule for the homework problems that are due on each quiz day. Homework will be graded on the basis of completeness, not correctness. Each homework assignment will be worth 1% of your overall course grade. Homework solutions must be submitted in a "professional way". Solutions DO NOT have to be typed but should be written neatly and should have all pages stapled together with one staple in the upper left hand corner. No torn-out notebook paper, no fancy binders please. Homework that does not meet these standards will not be accepted for credit.

You are most strongly encouraged to work on the homework in groups and discuss the problems with one another. As stated before, you will be allowed to ask questions about the homework problems in recitation and are always welcome to stop by office hours to discuss homework problems. I will not be posting solutions to the homework problems, so use all the resources available to you to ensure that you understand how to complete the assigned problems.

Regrading

If you have a question about the grading of any piece of work, first consult with the teaching assistant who graded your work. If you cannot resolve your questions with the teaching assistant, you should consult with the instructor of the course.

Any questions about the grading of a piece of work must be raised within one week of the date that the work was returned by the teaching assistant or the instructor. In other words, if you do not pick up your work in a timely fashion, you may forfeit your right to question the grading of your work.

Newsgroup

There is a newsgroup, sunyab.cse.191, for this course. You must learn how to read news and subscribe to this newsgroup. You are expected to read the newsgroup regularly. There may often be important material posted there, such as supplementary course notes, homework and sample exam questions, and occasionally late breaking news. You may post general course related articles to the newsgroup. Use discretion in posting articles related to homework assignments: when in doubt, e-mail the T.A. or instructor first.

Incomplete (I) grades

We will follow the UB Undergraduate Catalog Statement on Incomplete Grades, found in the Undergraduate Catalog.

Generally, incomplete ("I") grades are not given. However, very rarely, circumstances truly beyond a student's control prevents him or her from completing work in the course. In such cases the instructor can give a grade of "I". The student will be given instructions and a deadline for completing the work, usually no more than 30 days past the end of the semester. University and department policy dictate that "I" grades can be given only if the following conditions are met:

- An Incomplete will only be given for missing a small part of the course.
- An Incomplete will only be given when the student misses work due to circumstances beyond his/her control.
- An Incomplete will only be given when the student is passing the course except for the missed material.
- An Incomplete is to be made up with the original course instructor within the time specified by the appropriate University regulation (see appropriate document above), and usually within the following semester.

- An Incomplete will not be given to allow the student to informally retake the entire course, and have that grade count as the grade of the original course.

Incompletes can not be given as a shelter from poor grades. It is your responsibility to make a timely resignation from the course if you are doing poorly for any reason. The last day to resign the course is Friday, March 10th (or Friday, March 31st if you are a first-semester student at UB).

Letter grades

The following table indicates the number to letter grade mapping I will use to assign final grades at the end of the course. The Grade points column is included for your convenience only, and is not official information. The official mapping can be found in the Undergraduate Catalog.

Percentage score	Letter grade	Grade points
90-100	A	4.0
85-89	A-	3.67
80-84	B+	3.33
75-79	B	3.0
70-74	B-	2.67
65-69	C+	2.33
60-64	C	2.0
55-59	C-	1.67
50-54	D	1.0
0-49	F	0.0

General Notes

If you don't understand something covered in class, ask about it right away. The only silly question is the one which is not asked. If you get a poor mark on an assignment, quiz, or exam, find out why right away. Don't wait a month before asking. The instructor and teaching assistants are available to answer your questions. Don't be afraid to ask questions, or to approach the instructor or T.A. in class, during office hours, or through e-mail.

This course is intended to be hard work, but it is also intended to be fun. The mathematics presented in this course forms the foundational material to many interesting elements in computing. We will discuss some of these applications in the course and would encourage you to explore them some more on your own as well. We think computer science is interesting and exciting, and we want to convince you of this. Work hard, but have fun!

Disabilities

If you have a diagnosed disability (physical, learning, or psychological) that will make it difficult for you to carry out the course work as outlined, or that requires accommodations such as recruiting note-takers, readers, or extended time on exams or assignments, you must consult with the Office of Disability Services (25 Capen Hall, Tel: 645-2608, TTY: 645-2616, Fax: 645-3116, http://www.student-affairs.buffalo.edu/ods/).

You must advise your instructor during the first two weeks of the course so that we may review possible arrangements for reasonable accommodations.

Counseling Center

Your attention is called to the Counseling Center (645-2720), 120 Richmond Quad. The Counseling Center staff are trained to help you deal with a wide range of issues, including how to study effectively and how to deal with exam-related stress. Services are free and confidential. Their web site is http://www.student-affairs.buffalo.edu/shs/ccenter/

Distractions in the Classroom - Behavioral Expectations

The following is the text of a policy adopted by the Faculty Senate. You are expected to know and adhere to this policy.

OBSTRUCTION OR DISRUPTION IN THE CLASSROOM – POLICIES UNIVERSITY AT BUFFALO

To prevent and respond to distracting behavior faculty should clarify standards for the conduct of class, either in the syllabus, or by referencing the expectations cited in the Student Conduct Regulations. Classroom "etiquette" expectations should include:

- Attending classes and paying attention. Do not ask an instructor in class to go over material you missed by skipping a class or not concentrating.
- Not coming to class late or leaving early. If you must enter a class late, do so quietly and do not disrupt the class by walking between the class and the instructor. Do not leave class unless it is an absolute necessity.
- Not talking with other classmates while the instructor or another student is speaking.
- If you have a question or a comment, please raise your hand, rather than starting a conversation about it with your neighbor.
- Showing respect and concern for others by not monopolizing class discussion. Allow others time to give their input and ask questions. Do not stray from the topic of class discussion.
- Not eating and drinking during class time.
- Turning off the electronics: cell phones, pagers, and beeper watches.
- Avoiding audible and visible signs of restlessness. These are both rude and disruptive to the rest of the class.
- Focusing on class material during class time. Sleeping, talking to others, doing work for another class, reading the newspaper, checking email, and exploring the internet are unacceptable and can be disruptive.
- Not packing bookbags or backpacks to leave until the instructor has dismissed class.

Academic Integrity

Source: http://www.cse.buffalo.edu/academics-academic integrity.shtml

The academic degrees and the research findings produced by our Department are worth no more than the integrity of the process by which they are gained. If we do not maintain reliably high standards of ethics and integrity in our work and our relationships, we have nothing of value to offer one another or to offer the larger community outside this Department, whether potential employers or fellow scholars.

For this reason, the principles of Academic Integrity have priority over every other consideration in every aspect of our departmental life, and we will defend these principles vigorously. It is essential that every student be fully aware of these principles, what the procedures are by which possible violations are investigated and adjudicated, and what the punishments for these violations are. Wherever they are suspected, potential violations will be investigated and determinations of fact sought. In short, breaches of Academic Integrity will not be tolerated.

Departmental Statement on Academic Integrity in Coding Assignments and Projects

The following statement further describes the specific application of these general principles to a common context in the CSE Department environment, the production of source code for project and homework assignments. It should be thoroughly understood before undertaking any cooperative activities or using any other sources in such contexts.

All academic work must be your own. Plagiarism, defined as copying or receiving materials from a source or sources and submitting this material as one's own without acknowledging the particular debts to the source (quotations, paraphrases, basic ideas), or otherwise representing the work of another as one's own, is never allowed. Collaboration, usually evidenced by unjustifiable similarity, is never permitted in individual assignments. Any submitted academic work may be subject to screening by software programs designed to detect evidence of plagiarism or collaboration.

It is your responsibility to maintain the security of your computer accounts and your written work. Do not share passwords with anyone, nor write your password down where it may be seen by others. Do not change permissions to allow others to read your course directories and _les. Do not walk away from a workstation without logging out. These are your responsibilities. In groups that collaborate inappropriately, it may be impossible to determine who has offered work to others in the group, who has received work, and who may have inadvertently made their work available to the others by failure to maintain adequate personal security In such cases, all will be held equally liable.

These policies and interpretations may be augmented by individual instructors for their courses. Always check the handouts and web pages of your course and section for additional guidelines.

Departmental and Course Policy on Violations of Academic Integrity

If, after following the procedures required by the University for investigation of suspected breaches of academic integrity, a student is found guilty, the policy of the department of Computer Science & Engineering is that the student minimally receive a grade of F in the course.

University at Buffalo
Department of Computer Science & Engineering

I, _____(PRINT name), acknowledge that I have read and understood the syllabus for this course, CSE 191 Introduction to Discrete Structures.

I also acknowledge that I understand the definition of academic integrity as outlined in the syllabus, and that I will minimally receive a grade of F in the course if I am found to have breached academic integrity.

I also understand that I am required to have successfully completed all of the listed prerequisites for this course with a minimum grade of C-. I understand that if I do not meet the prerequisites that I may be dropped from the course by the department.

Signature: _____ Date: _____