1 Basic Information

Your primary source for class information, homeworks, labs, and handouts is the class web site, http://www.cse.wustl.edu/~zhang/teaching/cse241/spring14/. Please check this site regularly for course announcements.

- Where and When: Mondays and Wednesdays 2:30-4:00 PM in Louderman, Rm 458.
- Prerequisites: CSE 131. CSE 240 or other basic discrete math background is strongly recommended.
- Please look at the course website for TA office hours and other logistical information.
- Piazza: All enrolled students will be automatically signed up for this site. Please register as soon as you get your invitation. All questions regarding the course (that are not of a personal nature) should be posted to Piazza. Before posting, you should go over the questions and answers there first; often your question may have been covered on Piazza already. All questions regarding the course that you email to the instructor or the TA will receive the response "Please repost to Piazza", where both the question and the answer will reach its full audience. It is in everyone's interest that we maintain this policy; this is absolutely the most effective way to communicate.


2 Assignments

There will be three labs and five homework assignments. Assignments will be distributed in PDF form from the course web page. Homework assignments will generally go out on Wednesdays and will be due in about 2 weeks. Labs will generally go out on Mondays and will be due in about 3-4 weeks. There are exceptions to this rule to make the schedule work out. Therefore, check the course website regularly to make sure that you know when the assignments are due. I will announce in class when the assignments are going out. Homworks and labs will overlap, so you will be working on one homework assignment and one lab at the same time.

2.1 Homeworaks

Homeworks will be written assignments designed to help you practice and increase your understanding of the material presented in class. Each problem set will contain between 2 and 4 problems.
• For homeworks, you have a total of 4 tickets for late homework submission for the semester. One late ticket is worth one-day late submission, and you can use at most 2 tickets (i.e., being late for no more than 2 days) for one particular homework. If you have used up your late days, your homework will not be accepted. No excuse will be considered once you have used your late tickets. So I recommend that you save your late tickets for real emergencies like sickness, family emergencies, etc.

• Each problem should be written up on a separate sheet (or sheets) of paper. On each sheet, please mark
  – your name,
  – the problem number.

• With each assignment, you must also submit a signed document saying that you read and followed the course collaboration policy. On this document, you must list the people you worked with on the assignment or outside sources of information you used to do the homework (see the class collaboration policy), or “Collaborators: none” if you solved the problems completely alone. You should also mark the number of late days you are using, if any. You should staple all the sheets of your homework together when submitting.

• You may handwrite or type your answers (this would be a great time to teach yourself LaTeX or the MS Equation Editor), but please, no ASCII art or ASCII math. For hand-written solutions, please use either pencil or blue or black ink.

• You should be as clear and precise as possible in your write-up of solutions. Understandability of your answer is as desirable as correctness, because communication of technical material is an important skill. In addition, if we cannot understand your solution, we will probably mark them wrong.

  A simple, direct analysis is worth more points than a convoluted one, both because it is simpler and less prone to error and because it is easier to read and understand. Sloppy answers will receive fewer points, even if they are correct, so make sure that your handwriting is legible. It is a good idea to copy over your solutions to hand in, which will make your work neater and give you a chance to do sanity checks and correct bugs.

• Assignments must be turned in by the beginning of class on the due date. Please bring the assignment to class or send them with a friend if you are not coming. Alternatively, you can turn them in 30 minutes before class in a box outside Jolley 528. If you are using your late tickets, please drop off your homework in the box outside Jolley 528. If the box is not there, just slip the homework in under the door.

2.2 Labs

Labs will be programming assignments to help you gain practical experience with the methods presented in class as well as overall programming experience.

• Labs should be done in Java. If you do not know Java, come see the instructor as soon as possible.
• We will provide supporting code for labs. The exact instructions on how to checkout the supporting code and submit the labs will be provided on a separate instruction sheet when the first lab goes out.

• You have a total of 2 late tickets for the semester to pay for 2 days of late submission at no grade penalty for submitting your labs. If you have used up these late tickets, your score will be reduced by 25% of your total lab grade (not your particular lab score) per late day. Again, no excuse will be accepted for late labs once you have used up your late days. So save your late tickets for real emergencies.

• For your labs, you can submit your labs as many times as you want. About once a day, an automatic feedback system will run your lab and send you an email with the results. You should modify your code and resubmit if the feedback indicates that it is incorrect/inefficient. Therefore, it is to your advantage to start working on your lab as soon as possible so that you get many opportunities to correct your assignment. However, don’t tailor your code to just pass these tests; while grading, we may use additional tests that were not run by the feedback system.

• The labs will be graded using an autograder. We will not look at your code except under exceptional circumstances. This means that your grade is based exclusively on the correctness and performance of your code. In particular, “almost correct” code will get no credit. In addition, if your code is correct, but so slow that it doesn’t finish within the autograder’s time limit, you will get no credit.

3 Describing algorithms

You will often be called upon to “give an algorithm” to solve a certain problem. Your write-up should take the form of a short essay. A topic paragraph should summarize the problem you are solving and what your results are. The body of your essay should provide the following:

1. A description of the algorithm in English and, if helpful, pseudocode.
2. Worked example or diagram (if needed) to show more precisely how your algorithm works.
3. A proof (or indication) of the correctness of the algorithm.
4. An analysis of the running time of the algorithm.

Remember, your goal is to communicate. We will take off points for convoluted and obtuse descriptions.

4 In-class Activities

During class time, I may have periodic in-class activities. Some of these activities will be done individually, and some in small groups (3-4 people); they will include exercises to build your understanding of ideas from lecture and/or explore related topics that we would not otherwise cover.

My general plan for in-class activities ask you to solve a small problem and wander around to help the various groups and occasionally give some hints to move the activity forward. At the end of the activity, I may ask some group to come share their work with the class. Sometimes, I might ask you to submit your
work. These submissions will not be graded and returned to you. In addition, I will ask questions during class, and answering these questions will also contribute to your grade.

To make time for these activities, I may move some of my usual lecture content “offline” by posting notes or other materials to the course website ahead of a class. To prepare, you should be sure to read or view these materials before coming to class.

5 Exams and Overall Grading

The overall grade is based on exams, labs, and homeworks. There will be one midterm exam and one final exam. Each exam covers everything that has been taught until the exam.

To calculate your final grade, we will first calculate your numerical grade (out of 100) using the labs, exams, and homeworks.

- The labs are worth 21 points.
- The homeworks are worth 15 points. The exact way in which homeworks grades are calculated is explained below. Note that as explained below, even though doing all homeworks well gets you at most 15 points, not doing the homeworks can make you lose many more points.
- The remaining 64 points will be divided equally among the exams, i.e., each exam is worth 32 points.

After calculating your numerical grade out of 100, I generally try to assign between 25% to 40% students A’s; about 25% to 40% students B’s; most of the remaining students get C’s. People generally get D’s or F’s if they put very little or no effort into the class; for example, not doing homeworks or labs is a good way to fail the class. The precise grade distribution is decided only after I have all your scores.

As a fair warning, I should tell you that I tend to set difficult exams and homeworks in order to challenge you. However, I am relatively generous with the final letter grade. Most students are not unpleasantly surprised by their letter grade when they objectively look at their performance in the course.

6.1 Labs and Exams

There are three labs graded out of 100 each. At the end of the semester, I will add the score of all the labs and multiply the number with 21/300 in order to calculate your score out of 21. I may give extra credit in labs for exceptional work. Therefore, you can potentially earn more than 21 points if you do well.

The credit for exams will be calculated in a similar manner.

6.2 Homework Assignments

Problem sets are a big part of the course, and it is very important that you do them. They will help you learn the material and do well in exams. The problems will be graded on the scale from 0 to 4.

- 0 means you didn’t make a serious attempt to solve the problem. You will get this grade if you didn’t submit the problem, or submitted something but the graders concluded that you didn’t put much effort or thought into it.
• 1 means that your solution was unsatisfactory.

• 2 means that your solution was ok, but could use improvement.

• 3 means that your solution was correct and well written.

• 4 means that your solution was exceptional, that is, you gave a solution that I hadn’t thought of or the solution was very well written.

The specifics of the grading policy are subject to change if need arises. Using these grades for all your homeworks, we will calculate your Average Homework Grade (AHG). Your average homework grade can affect your class grade in the following manner.

• AHG more than 2.5: You get all 15 points.

• AHG between 1.75 and 2.5: You get 7 points.

• AHG between 1.25 and 1.75: You do not get any points for homework.

• AHG less than 1.25: I will dock 5 points from the points you had earned from labs and exams.

Finally, even though the assignments can affect your grade by at most 20 points, attempting them is of utmost importance. If you do not do the assignments (get a 0 on them), you may fail the class, no matter how well you do in exams. The following table shows the impact of failing to submit problems:

<table>
<thead>
<tr>
<th>Problems skipped</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>One-hundredth of a letter grade</td>
</tr>
<tr>
<td>2</td>
<td>One-tenth of a letter grade</td>
</tr>
<tr>
<td>3</td>
<td>One-fifth of a letter grade</td>
</tr>
<tr>
<td>4</td>
<td>One-third of a letter grade</td>
</tr>
<tr>
<td>5</td>
<td>One-half of a letter grade</td>
</tr>
<tr>
<td>6</td>
<td>One letter grade</td>
</tr>
<tr>
<td>7</td>
<td>Two letter grades</td>
</tr>
<tr>
<td>8 or more</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Please observe that this table is for problems skipped, not problem sets. In general, each problem set contains 2 to 4 problems. Therefore, skipping 2 problem sets will make you lose a letter grade, and skipping 3 problem sets will earn you a failing grade.

7 Policy on Collaborations and Academic Integrity

Please see the separate document on this subject on the course web site. Every assignment will include a place for the student to sign indicating that he or she has complied with the course collaboration policy.