

I, Chris Marriott, am not the original author of this contract, but have included it with minor changes for presentation in this class. I have copied this source from Professor Asao Inoue, who in turn modified it from a piece written by Professor Peter Elbow. While this is not my work I agree with the sentiments included within.

Imagine that this wasn't an official course for credit at UWT, but instead that you had seen my advertisement in the newspaper or on the Internet, and were freely coming to my home studio for a class in cooking or yoga. We would have classes, workshops, or lessons, but there would be no official grading of omelets or yoga poses, since letters and numbers would be meaningless in those scenarios. But we all would learn, and perhaps in an encouraging, fun, and creative environment. In considering this course and that home studio scenario, we might ask ourselves three questions: Why are grades meaningless in that home studio setup? How do grades affect learning in classrooms? What social dynamics does the presence of grades create? In both situations, instructors provide students or participants with evaluative feedback from time to time, pointing out where, say, you've done well and where I, as the instructor, could suggest improvement. In the home studio situation, many of you would help each other, even rely on each other during and outside of our scheduled meetings. In fact, you'd likely get more feedback from your peers on your work and practices than in a conventional classroom where only the teacher is expected to evaluate and grade.

Consider two issues around grades. First, using conventional classroom grading of programs and other work to compute course grades often leads students to think more about acquiring grades than about their programming or learning; to worry more about pleasing a teacher or fooling one than about figuring out what they really want to learn, or how they want to solve the information processing problem. Lots of research in education, writing studies, and psychology over the last 30 or so years have shown overwhelmingly how the presence of grades in classrooms negatively affect the learning and motivation of students. [Alfie Kohn \(2011\)](#), a well-known education researcher and teacher of teachers, makes this argument succinctly. To put it another way, if learning is what we are here for, then grades just get in the way since they are the wrong goals to strive for. An "A" doesn't build a good bridge for an engineer, nor does it help a reporter write a good story, or a urban planner make good decisions for her city. It's the learning that their grades in school allegedly represent that provides the knowledge to do all that they need to. And so, how do we make sure that our goals aren't about grades in this class, but about learning to be effective programmers?

Second, conventional grading may cause you to be reluctant to take risks with your solutions or ideas. It doesn't allow you to fail at problems, which many suggest is a primary way in which people learn from their practices. Sometimes grades even lead to the feeling that you are working against your teacher, or that you cannot make a mistake, or that you have to hide part of yourself from your teacher and peers. The bottom line is, failure at problem solving is vital to learning how to write programs better. And we have to embrace our failures, because they show us the places we can improve, learn, get better—and these are the reasons we are in college! Grades on our work and programs do not allow us to productively fail. They create conditions that mostly punish failure, not reward it for the learning opportunity it can and should be.

As you might already notice, what I'm arguing for here is a different kind of classroom, and even education. [Sir Ken Robinson \(2010\)](#), a well-known education researcher, makes the argument in a TED talk that typical schooling, with grades and particular standards, is an old and mostly harmful system that we've inherited, but now needs to change. One harmful aspect of this old system is that it assumes everyone is the same, that every student develops at the same pace and in the same ways, that variation in

skills and literacies in a classroom is bad. It is clear the opposites of these things are more true. For all these reasons, I offer this **labor-based grading contract** to calculate course grades in our class.

The pedagogical shift I'm suggesting is in part a cultural one, one that I would like you to control. Therefore we will try to approximate the evaluative conditions of a home studio course. That is, we will try to create a culture of support, or rather a community of compassion, a group of people who genuinely care about the wellbeing of each other—and part of that caring, that compassion, is doing things for each other. It turns out, this also helps you learn. The best way to learn is to teach others, to help, to serve. So we will function as collaborators, allies, as fellow-travelers with various skills, abilities, experiences, and talents that we offer the group, rather than adversaries working against each other for grades or a teacher's approval.

Do not worry. You will get lots of assessments on your solutions and other work during the semester from your colleagues and me. Use these assessments (written and verbal) to rethink ideas and improve your problem solving, programming and practices, to take risks, in short to fail and learn from that failing. I want you not only to rely on your colleagues and yourself for assessment and revision advice, but to build strategies of self-assessment that function apart from a teacher's approval.

Therefore the default grade for the course is a "B" (3.1). In a nutshell, if you do all that is asked of you in the manner and spirit it is asked, if you work through the processes we establish and the work we assign ourselves in the labor instructions during the quarter, if you do all the labor asked of you, then you'll get a "B" (3.1) course grade. It will not matter if you solve every problem correctly, only that you are listening to our feedback compassionately. We may disagree or misunderstand your solution, but if you put in the labor, you are guaranteed a B (3.1) course grade. If you do not participate fully, turn in assignments late, forget to do assignments or quizzes, turn in incomplete assignments or quizzes, or do not follow the labor instructions precisely, you will get a lower course grade (see the final breakdown grade table on the last page of this contract).

"B" GRADES

You are guaranteed a course grade of "B" (3.1) if you meet all of the following conditions.

- **Participation.** You agree to fully participate in our scheduled class sessions by attending class or watching the lecture videos on pace with the course schedule. Usually, attendance in class (or viewing the video) equates to participation. No formal attendance will be taken, instead, students will submit a 1 page unit reflection after completing each unit. However, quizzes will occur during class time (or online during a preassigned timeframe).

Any absence due to a university-sponsored group activity (e.g., sporting event, band, another class field trip, etc.), military-related absences (e.g., deployment, work, duty, etc.), or documented illness will be considered independently of the above policy, as long as the student has FIRST provided written documentation as soon as they are aware of the days they will be absent. This will allow us to determine how he/she will meet assignments and our contract, despite being absent. This may include absences due to illness that has a medical/ doctor's note confirming the illness. Each of these circumstances will be determined on a case-by-case basis in consultation between the student and me (Chris) in a manner that is fair to all parties involved.

- **Sharing and Collaboration.** You agree to work cooperatively and collegially in learning groups and in class. This may be the easiest of all our course expectations to figure out, but we should have some discussions on what we expect from each other.

- **Late Work.** You agree to turn in properly and on time all work and assignments expected of you in the spirit they are assigned, which means you'll complete all of the labor instructions for each assignment. During the semester, you may, however, turn in a few assignments late. The exact number of those late assignments is stipulated in the table on the last page of this contract, which we negotiate. **Late work is defined as any work or document due that is turned in AFTER the due date/time BUT within 48 hours of the deadline.** For example, if some work was due on Thursday, February 15 at 11:59 pm, that piece must be turned in by 11:59 pm on Saturday the 17th.
- **Incomplete Work.** You agree to turn in complete work, which means making an honest attempt to solve every problem assigned and to follow the labor instructions for each assignment. You do not need to get all problems correct for your work to count as complete. However, there is a minimum threshold of correctness that must be met to count as complete. **Incomplete work is defined as any problem posing assignment or quiz that does not include at least 75% correct solutions to the problems posed.** That is, if you have too many incorrect solutions your work may count as incomplete. You are expected to attempt all problems. **Problems should not be left unanswered or will count as ignored work.** Non-problem posing assignments like learning logs, peer assessments or unit reflections may be considered incomplete if you fail to follow all instructions faithfully.
- **Missed Work.** If you turn in late work **AFTER the 48 hours** stipulated in Late/Incomplete Work, then it will be considered "missed work," which is a more serious mark against your grading contract. This is due to the fact that all assignments are used by your learning group when they are due, so turning in something beyond 48 hours after it is due means it is assured to be less useful, and its absence has hurt your colleagues in class (since they depended on you to turn in your work for their use).
- **Ignored Work.** You agree not to ignore any work expected of you. Ignored work is any work unaccounted for in the quarter—that is, I have no record of you doing it or turning it in. My sense is that ignoring the work so crucial to one's development as a learner in our community is bad and unacceptable, so accumulating any "ignored work" will keep you from meeting our contract expectations (see table in Breakdown of the Main Components Section).
- **All Work/Labor and writing** needs to meet the following conditions:
 - **Complete and On Time.** You agree to turn in on time and in the appropriate manner complete problem solutions, or other labor assigned that meet all of our agreed upon expectations. (See Late Work and Incomplete Work for details on these expectations.) This means you'll be honest about completing labor that asks particular time commitments of you (for example, "brainstorm for 5 minutes," etc.).
 - **Revisions.** When the job is to reflect on and revise your problem solutions, you will attempt to understand your errors, or why other methods might reach your solution quicker or with more elegance. You won't just copy correct answers. Revisions must somehow involve appreciation of the mistakes made and consider your colleagues' assessments and advice in order to be revisions.
 - **Copy Editing.** Written problem solutions and any writing components of assignments must be edited for spelling, grammar, organization and presentation. While perfecting standards will not be applied each student is expected to spend considerable time editing their written work. You are free to seek help on copy editing from peers or others.

KNOWING WHERE YOU STAND

This system is better than regular grading for giving you a clear idea of what your final grade looks like at any moment. If you are doing everything as directed and turning complete things in on time, you're getting a B (3.1).

IMPROVING YOUR CONTRACTED GRADE

The grade of B (3.1) depends primarily on *behavior* and *labor*. Have you shown responsible effort and consistency in our class? Have you done what was asked of you in the spirit it was asked? Higher grades than the default, the **grades of 3.4, 3.7, or 4.0**, however, require *more labor that helps or supports the class* in its mutual learning goals. In order to raise your grade, you may complete as many of the following items of labor as you like (doing three gets you a 4.0). Each item completed fully and in the appropriate manner will raise your final course grade by .3. The first and last items may be done twice, each counting as a separate labor.

- **Extra Credit:** You may complete the extra credit problems of the problem posing assignments during the quarter. You must complete **at least four extra credit problems** in order for this extra labor to count as enough extra labor for the .3 course grade bump. Each extra credit solution is due the day of the corresponding assignment, must be on time, and must be complete.
- **Labor Journal Essay:** At week 7 (draft) and 10 (final), you may write an essay that looks back at your unit reflections and learning logs as a record of your labors toward learning in this class. This essay will be about 3-4 pages long and be written directly to me (Chris), but the class likely will read them too in order to learn from your own discussion of your learning.
- **A Programming Project:** You may complete a programming and writing assignment that compares different algorithmic solutions to the same problem. For one of the problems we study in class, or another approved by me (Chris), implement multiple algorithms for the problem, demonstrating different design strategies, and compare the algorithms experimentally. Your comparison should be a technical essay 3-4 pages long that includes data from your experiment and the conclusions you have drawn. You will present your project to the class. See the "Extra Labor" document for complete details on this labor.
- **An Algorithm Analysis Project:** You may complete a writing assignment in which you provide an analysis of an algorithm other than one covered in lecture. Select a problem and algorithm for that problem, approved by me (Chris), that we did not cover during lecture. Complete a proof of correctness and/or runtime analysis of the algorithm. Your final project should be a technical essay 3-4 pages long that includes your proofs and analysis of the algorithm as well as any other discussion of the problem, algorithm or applications. You will present your project to the class. See the "Extra Labor" document for complete details on this labor.
- **Extra Assessments (3 extra formal ones):** You may do three extra assignment assessments for three different colleagues not in your original learning group. You are expected to also discuss your assessment with the other student. You may do this by joining the assessment discussion of the other student's learning group. You must prearrange this assessment agreement with the other student ahead of time, and you must alert me (Chris) that you plan to carry out this extra labor. These assessments will follow the same labor instructions as the normal ones you'll do.

- **A draft of a homework or quiz problem:** You will select a problem with solutions matching one of the types of algorithm we study (divide and conquer, dynamic programming, or greedy algorithms). You will draft a homework or quiz problem through research for the class's benefit and will need at least 2 weeks lead time, working with me (Chris) on the materials. While we'll determine together the scope of your problem, the main elements of your labor will be to produce: (1) a 1-2 page handout for the class's benefit of your problem and potential solution; (2) a short in-class or video presentation of your problem; and (3) a short reflective essay to me (Chris) of about 1-2 pages (300-600 words) on what you learned in the process of doing this labor and what you feel the class stands to gain from the problem you offered us.
- Some other labor that benefits the class and our mutual learning of programming, algorithms, and computer science. Do you want to write about and report to us on the impact of some algorithm to a current cultural event? Or maybe you would like to read an article for us and summarize some of its findings or ideas that you think will help us do our work in class? If you have an idea, come to me (Chris) early. We will plan it, while making sure the amount of labor is commensurate with the other items above.

Thus, for every item you complete on the above list, your contracted grade will improve by .3 grade points. So if you meet the conditions for a B-contract (3.1), then your grade can improve in the following ways:

- 1 item completed = course grade of 3.4
- 2 items completed = course grade of 3.7
- 3 items completed = course grade of 4.0

If you are working toward a C-contract (2.1) or lower, the same .3 movement up the grade ladder applies by completing 1-3 items on the list above. You may even do more than three items and continue to raise your grade by .3 per item. Your course grade, then, equates to a 2.4, 2.7, 3.0, 3.3, respectively.

BREAKDOWN OF THE MAIN COMPONENTS

Below is a table that shows the main components that affect your successful compliance with our contract. If you submit an assignment (or quiz) complete and on time then there will be no strikes against you. You may, over the quarter, submit some assignments (or quizzes) incomplete, late, or you may miss or ignore assignments as defined above. You agree that your base grade is determined by how many incomplete, late, missed or ignored assignments according to the table below. This quarter you will be assigned 8 problem-posing assignments, 8 quizzes, 10 learning logs, 7 peer assessments, 10 unit reflections, a midterm reflection and a final reflection. This is a total of 45 assignments and quizzes. The table indicates the maximum number of assignments of each category you may have to meet the expectations for that grade.

Grade	Incomplete Assignments	Late Assignments	Missed Assignments	Ignored Assignments
A (4.0)	4	5	1	0
B (3.1)	4	5	1	0
C (2.1)	5	6	2	0
D (1.1)	6	7	3	1
E (0.0)	7	8	4	2

Gimme/Plea. I (Chris), as the administrator of our contract, will decide in consultation with the student whether a gimme is warranted in any case. The student must come to me (Chris Marriott) as soon as possible, usually before the student is unable to meet the contract (before breaching the contract), in order that they and I can make fair and equitable arrangements, ones that will be fair and equitable to all in the class and still meet the University's regulations on attendance, conduct, and workload in classes. **You may use a gimme for any reason, but only once in the quarter.** Please keep in mind that the contract is a public, social contract, one agreed upon through group discussion and negotiation, so my job is to make sure that whatever agreement we come to about a plea will not be unfair to others in class. A gimmie/plea does not allow you to ignore any work expected of everyone in the class. A plea is NOT an "out clause" for anyone who happens to not fulfill the contract in some way; it is for rare and unusual circumstances out of the control of the student.

Exemplary labor. If by our final meeting conference (end of quarter), you participate in all activities, have no incomplete, late, missed, or ignored assignments, and do not use a gimme, then you will earn an extra .3 (equal to one item on the advanced contract) to your final course grade. This rule is meant to reward those students who engage in all the labor of the course in the fullest spirit asked of them and demonstrate themselves to be exemplary class citizens.

By staying in this course and attending class, you accept this contract and agree to abide by it. I (Chris) also agree to abide by the contract, and administer it fairly and equitably.