

Instructions to TAs for Assigning and Processing Peer Grading for Labs 7, 9, 10, and 11

Step	Basic Idea	Things to Watch Out For / Concerns
1	Figure out what groups students are enrolled in & if any students have not turned in a report	There is no quick way to download this information from ELMS. I have done this manually every time. Students may switch groups between Part 1 and Part 2 of a lab, so double-check before you do Step 2. If students have not turned in a report, you cannot assign a peer grader to them—so look in ELMS to note which are missing. If any entire lab group is missing a report, investigate!
2	Figure out which report each student will peer grade	No student can peer grade their own report (which means they can't grade their group-mates, either!). This should be randomly assigned, but kept within the same section (though students who join a section for the last part of any lab should be grouped with that section). Ultimately, you must know which <i>student</i> you are assigning an individual to peer grade. Double-check to make sure there aren't too many students from the same lab group grading the same report. Also make sure you have not assigned any student to peer grade for a student who has not submitted a report.
3	Assign the peer grading via ELMS	Do not click on the "Assign Peer Reviews" button in ELMS—ELMS does not respect "section" boundaries and could also assign students to their own report.
4	Email your section(s) to notify them	Message your students to let them know the reports have been assigned and to give them the deadline date and time for their peer grading (noon, seven days later).
5	Monitor the peer grading	Answer questions, handle "reminders," provide guidance (if asked).
6	Collect the peer grading scores, assign points for completing the peer grading, determine individual lab grades	Note which students have missed the deadline—then send them a "reminder." Check the students' peer grading to make sure their comments show fairness and a critical thoroughness. Combine grades for the same report. Investigate outliers. Add individual "timeliness" and "critical but fair" points to the report score for each student. Watch out for students completing their report in different/multiple sections and for students who did not complete the entire lab (due to an absence).
7	Update the lab grade column in ELMS with the correct final score for individual students in your section(s)	Double-check your work, then upload the scores to ELMS. You can enter these manually (I think this is easiest for small batches) or do a csv upload. If doing a csv upload, be sure to use a current version of the ELMS gradebook (download first!) and make sure the student ordering matches (ELMS does a weird alpha-sort) before copy-pasting scores. Do not "un-mute" the grade column. A professor or the Lead TA will do that.

Instructions with more detail, including screen shots....

Note: There are many legitimate ways to get the basic steps above completed. If you find a faster method than the one detailed hereafter, please let me know. This is a description of how I have accomplished these steps, including the problems I have discovered (things to watch out for/concerns) in the six different times that I have been responsible for assigning, monitoring, and processing peer grading for lab reports in Phys 132. If you try something different and it is not working well or going smoothly, please fall back to these instructions. These will definitely work and they represent the algorithm I have settled on after multiple iterations.

1) Figure out what groups students are enrolled in and if any students have not turned in a report.

There is no easy way to find out from ELMS which students are in which group for each lab. (You'd think there'd be a way to bulk-download that info, but you'd be wrong!) I have done it manually each time. As a TA, you can help this process by checking in the second week of each lab that ALL students in your section are enrolled in a lab group for your section for that lab and checking that each lab group is formed correctly (contains the right people) —start this before the second week of lab starts and then do not let the students leave the room in the second week until they have enrolled in the correct group. Also be sure to note any students absent from your lab in the second week or who join your lab from a different section (for both weeks or for just one). Students completing the lab in different/multiple sections should be grouped with the students with whom they *finish* the lab and submit the final report.

To do these things, go to the "People" tab in ELMS and select the tab for the current Lab (e.g., "Lab 7"). Unassigned students will appear alphabetically (by last name) on the left—none of your students should be there! Scroll to find your section and "expand" the groups for your section to see who is in each group. Once you are certain that the groups are correctly composed, record this information. Double-check that these group assignments are still correct before doing the actual peer grading assigning (students sometimes switch groups between the first and the second weeks of a lab). Here is a screen shot. For the lab groups used in Lab 6,

Section 0101
Group 1
(which I would code in short-hand as 0101G1) has been "expanded."
There are also three students listed as unassigned.

The screenshot shows the ELMS interface for 'PHYS132' in 'Spring 2016'. The top navigation bar includes 'Courses & Groups', 'Grades', 'Calendar', and 'CourseEvalUM'. The main content area is titled 'PHYS132 > People > Groups'. It features a search bar for users and a list of 'Unassigned Students (3)' and 'Groups (68)'. The 'Unassigned Students' list includes Aatessa Alimahmo..., Abigail DiVito, and Matthew Montani. The 'Groups' list shows 'Section 0101 Group 1' with 4/6 students, 'Section 0101 Group 2' with 4/6 students, and 'Section 0101 Group 3' with 4/6 students. The 'Section 0101 Group 1' is expanded to show its members: Ariel Kotch, Nicholas Penn, and Daryl Sanguinetti.

It is also important to know whether any students have not turned in a lab report (if they haven't turned in a report, you cannot assign someone to peer grade their work—there is no work there!). This can be easily determined by looking at the "Grades" tab in ELMS. You can look at all students or just your section. Scroll over to the lab you are working on. If a report has been turned in, you will see an icon of a dog-eared paper. If there is no icon, the report has not been turned in. If the icon has a red background, the report is being considered "late" by ELMS—ignore this for students not normally in your section (the deadline is set for each student according to their section, so completing the report with a different section could cause a report to look "late" to ELMS). If the red reports are your students and you know they worked with you in your section, then you might want to assess a late penalty (we already give them 30 minutes past the end of their lab section to submit the report—more than that should not be necessary, unless they have spoken with you individually about their group's report). Here is a screenshot.

Student Name	Secondary ID	Notes	work 4	Lab 6 Out of 30	Lab 7 Out of 30	Quiz 1 Out of 10	Quiz 2 Out of 10	Quiz 3 Out of 10	Quiz 4 Out of 10
Burick, Isabel PHYS132-0103	iburick	R		📄	📄	8	5	10	
Do, Kevin PHYS132-0103	ldo1	R		📄	📄	6	7	5	
Ejeh, Sylvia PHYS132-0103	sejeh	R		📄	📄	7	8	10	
Falconer, Matthew PHYS132-0103	mfalcon2	R		📄	📄	8	6	10	
Fish, Brandon PHYS132-0103	bfish1	R		📄	📄	2	8	10	
Groves, Heather PHYS132-0103	hgroves	R		📄	📄	1	8	10	
Hill, Madison PHYS132-0103	mhill11	R		📄	📄	1	7	10	
Joyce, Brendan PHYS132-0103	bjoyce1	R		📄	📄	6	9	10	
Kikani, Bijal PHYS132-0103	blikani	R		📄	📄	9	8	8	
Lo, Jasmin PHYS132-0103	jlo1	R		📄	📄	8	6	2	

The dog-eared page icons in the Lab 6 column indicate that these reports have been turned in. The lack of any icons in the Lab 7 column indicates that no Lab 7 reports have yet been submitted. If most of the members of a group have the lab submitted and only one student is missing this icon, then the likelihood is that they enrolled in that lab group *after* the lab report was submitted by another group member. If ALL of the members of a group are missing the icon, then it is likely that the group *did not* turn in a report.

Students are supposed to double-check that their lab report uploads are successful, so this should not happen. If it does, please investigate.

Both what group students are enrolled in and whether they have not turned in a lab report can be recorded easily in the spreadsheet provided to you. Feel free to create a new sheet in this workbook and copy only your own sections into that sheet to make data-handling easier. This spreadsheet is already staged to help you do data entry and score recording for the remaining labs. The first tab is a list of all students, ordered by section, with students in alphabetical order within each section. The second tab is a list of students in alphabetical order, ignoring the section. I use the second tab mainly to find students when I know their name but not their section. I do all data entry in the first tab and then just transfer the final results when I am done with data entry. The second tab is more useful when uploading via csv to ELMS—when it becomes imperative to get the alphabetical order to match that used in ELMS. There is a tab (the 4th tab) in this spreadsheet recording the "ELMS alphabetical order" and the list of students in the second tab is already in this order. The third tab is a set of randomly-generated report numbers that I have created for each lab. Use these or not, that's up to you. In the first tab (grouped by section), **column F** is where I have recorded each student's Lab 6 group. If the

Student	Lab 6 Feedback	ID	Section	Lab 6 Group	Peer-grading Report
(Late same day = 1 pt.)	Too Harsh			No Report	multi-sections
Points Possible	Too Lenient			1.6	
120 Shafique, Asim	Perfect	3712174	PHYS132-0106		0106G1, Ketchum, Adam
121 Sikder, Anika	Too Lenient	3950553	PHYS132-0106		0106G3, 0106G2, Nwankwo, Vanessa
122 Adeola, Janet	Too Lenient	2411198	PHYS132-0201	0205G6	0205G5, Poon, Michelle
123 Afzal, Afsah	Perfect	4132867	PHYS132-0201		0201G4, 0201G2, Karsalia, Moli
124 Alexander, Rachelle		3739916	PHYS132-0201		0201G3, 0201G6, Boukhalova, Alexandra
125 Alimahmoodi, Aatessa	Perfect	4133378	PHYS132-0201		0201G5, 0201G6, Gelmann, Dominique
126 Ball, Lauren		2404445	PHYS132-0201		0201G3, 0201G5, Alimahmoodi, Aatessa
127 Bedford, Lydia	Perfect	4028450	PHYS132-0201		0201G1, 0201G2, Loi, Katherine
128 Botescu, Brittany	Perfect	3709196	PHYS132-0201		0201G1, 0201G2, Santos, Silvia
129 Boukhalova, Alexandra	emailed	3713018	PHYS132-0201		0201G6, 0201G5, Jeanty, Margo
130 Fink, Benjamin		3711487	PHYS132-0201		0201G3, 0201G5, Shin, Julie
131 Gelmann, Dominique	Perfect	3708827	PHYS132-0201		0201G6, 0201G3, Alexander, Rachelle
132 Jeanty, Margo	Perfect	3712423	PHYS132-0201		0201G5, 0201G6, Sobol, Keenan
133 Karsalia, Moli	Perfect	2420309	PHYS132-0201		0201G2, 0201G4, Afzal, Afsah
134 Khan, Alisha	emailed	3717019	PHYS132-0201		0201G4, 0201G3, Ball, Lauren
135 Loi, Katherine	Perfect	3714282	PHYS132-0201		0201G2, 0201G4, Khan, Alisha
136 Lupovitch, Eitan	emailed	3705512	PHYS132-0201	0201G6	0201G1, Bedford, Lydia
137 Mason, Kelly	Perfect	3713596	PHYS132-0201		0201G1, 0201G3, Fink, Benjamin
138 McKinney, Brianna	emailed	3925169	PHYS132-0201		0201G1, 0201G4, Taylor, Tyia
139 Nazem, Pedrum		3950494	PHYS132-0201		0201G3, 0201G6, Boukhalova, Alexandra

entry is highlighted in red, that student did not turn in a report for Lab 6. Other colors and highlighting have other meaning, which I will explain later. For Lab 7, you can record this information in **column N**—note that I have already staged this column with the most likely section info for each student. All you need to do is add a number to the end of the string to indicate the group within that section, or change the entire cell if a student is in a section other than the one two which the registrar assigned them. So

on and so forth for Lab 9 and beyond. Here is a screen shot showing the spreadsheet, tab 1, scrolled down to the boundary between section 0106 and section 0201, as I used it for Lab 6 information. The red-highlighted group (row 136) indicates that this student did not turn in a report. The yellow-highlighted group (row 122) indicates that this student did her report in section 0205, instead of in her usual section (0201).

2) Figure out which report each student will peer grade.

No student can peer grade their own report (which means they can't grade their group-mates, either!). This should be randomly assigned, but kept within the same section (though students who join a section for the last part of any lab should be grouped with that section). Ideally, it is randomly assigned by student within that section—so this is more complex than a simple "all group 1 students grade group 3 reports, all group 3 students grade group 4 reports, all group...." Having a mix of different groups providing feedback to a single report is optimal—a larger variety of opinions, a larger number of well-understood procedures and results to compare against, and less chance that the students will realize they have the same report and collude to the point where one student does it and the remainder copy the work and submit it as their own (which is really only *one* feedback). ELMS is set to make both the peer grading report assigned and the peer grading feedback **anonymous** at the **student end** of this system. (As the TA, you will definitely be able to see who wrote the report and who wrote the feedback at all times.) So students should not know whose work they are grading; but if all of a student's lab-mates got assigned the same report, it is possible that could be discovered in an innocent fashion but lead to nefarious decisions.

The third tab in the spreadsheet contains a randomly-generated list of reports, assuming six groups and four students per group, with one wild slot. If there are no 'group 4' members, you can remove '4' from the list and shorten it. Likewise, if you have only three members (or an extra 5th member) in a specific group, you should remove one copy of that group number from

(or add in an extra copy of that group number to) the list. In the end, each group should have as many students peer grading that report as there are students in the group that generated the report—this can get a little tricky in sections with a small number of students, so email me if you are confused. **Column R** in the first tab of the spreadsheet currently holds a space for you to note how many group members are in each group, so that you can make sure to assign the right number of peer reviews to that report. You can overwrite this information in **R** once you have finished the peer grading matching. The randomly-generated list for Lab 6 was used to match students to a group report from their own section (see **columns F and G** in the previous screenshot). Where a student ends up matched to their own group number, I moved that number to the end of the list, shifted the list up, and continued checking the pairing. (Of course, if a student did the report in a different section, they should be matched to a report from that section—you can see this has been done for the student in row 122.) After the reports have been matched by group number, I double-check to make sure that each report has a variety of different groups contributing to its review (not too many students from the same group reviewing it). (This is why the end result in **column G** does not perfectly match the 'Lab 6' randomly-generated list as it appears in the 3rd tab of the spreadsheet.)

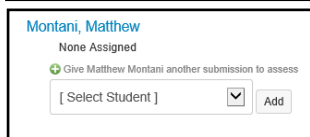
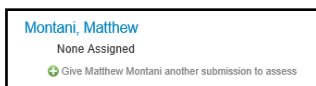
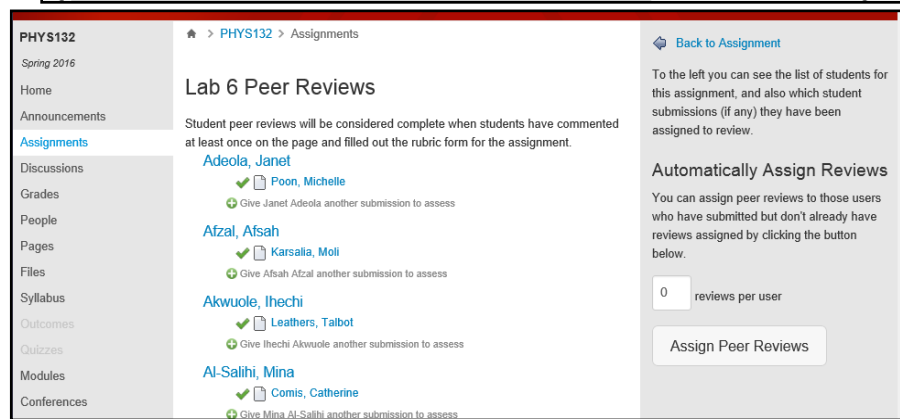
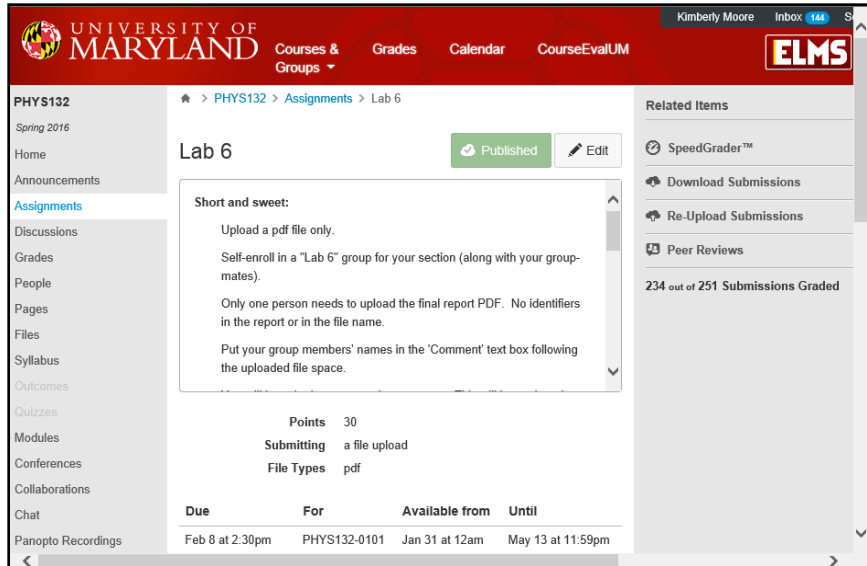
Ultimately, you must know which *student* you are assigning an individual to peer grade. This is because ELMS will not allow you to simply select a "group" for a student to peer grade. You must select a *specific student*. To make matters worse, even though these reports were turned in by groups, when it comes to assigning the peer grading, it will not show you which group each student belongs to in the peer review assignment location. This part is not that hard. I create a new sheet in my Excel workbook (or a new workbook entirely), copy the entire sheet I have been working on and paste a copy of it in the new space, then sort it by column F. Now I have the reports in order by group and can see which names are matched with which report. At this point, just go down the list, pasting in a name to column G in your original worksheet/workbook so that you have a group number and name for each peer grading assignment you are making. You can see the final result for this in **column G** of the previous screenshot. Also make sure you have not assigned any student to peer grade for a student who has not submitted a report (e.g., no student in Section 0201 was assigned to peer grade row 136's report—instead, the student in row 129 was assigned twice, once to the student in row 124 and once to the student in row 139; thus the 0201G6 report, written by four group members, is still being assessed by four peers, although only three students 'turned in' the 0201G6 report).

3) Assign the peer grading via ELMS.

Once you have decided which students will be assigned to grade which other students, you need to do the actual 'assigning' in ELMS. To do this, you need to be looking at the current lab assignment. You can get there by many paths: i) click on the "Assignments" tab in ELMS and then scroll down to the appropriate "Lab #" assignment, clicking on the blue assignment title for the current lab; ii) starting from the main page in ELMS for the Phys 132 course, scroll down until you see the current lab in the list (any of these will work, not just the one for your section), clicking on the blue assignment title; or iii) starting from the ELMS gradebook, scroll over until you reach the column for the current lab, clicking on the blue assignment title for the current lab. These all lead to the same place. You should see something like this (here, I am using a

screenshot of Lab 6). To get to the peer reviews where you will assign the peer grading, click on the bottom link in the right-side panel, "Peer Reviews."

You will end up here (screenshot). Do not click on the "Assign Peer Reviews" button—ELMS does not respect "section" boundaries and could also assign students to their own report! Instead, you will need to manually assign each report. Scroll through this alphabetical list to find your students and then assign the report you have chosen for each student to peer grade to them. A student with no peer review assigned yet will look like this.



To assign a report for this student to peer grade, you will click on the white plus sign surrounded by the green circle. When you do, it will look like this. Now you use the drop-down menu, ordered alphabetically by last name, to find the appropriate student and then 'Add' it for the student to peer grade. If you make a mistake, just hover over the result until a trashcan icon appears, click on the trashcan to delete the peer grading assignment (agree), and try again.

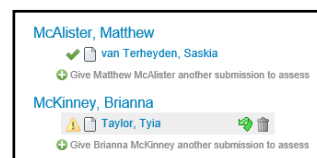
4) Email your section(s) to notify them.

Message your students to let them know the reports have been assigned and to give them the deadline date and time for their peer grading (I suggest a time of noon, seven days later). There are many ways to message your students (via ELMS, using a UMEG reflector, etc.). I don't really care how you do it, but you should give your students a head's up so that they know the report is ready to peer grade and so that they know what the deadline is for this peer grading assignment. If you assign the peer grading the day the lab report is turned in, then the peer grading is due a week later (right when they do the first week of the next lab), so you will definitely have all grades and all feedback (even from the stragglers) with enough time for

you to compile the information and still give students a few days to look everything over before their next lab report is due (usually 14 days after the previous report was turned in). The lab-specific rubric for the students to use (if they choose not to use the general rubric) is already in ELMS, so the students can begin their peer grading as soon as you have assigned a report to them via ELMS. Remind the students that they should send a copy of their peer grading comments and score(s) to you and to me (kmoore17@umd.edu) when they are finished. I suggest they start writing their scores and comments in a document editor (like Word) or in an email and then copy-paste the info into ELMS—this way they will have a copy of their work when they are finished. Screenshots can work, but usually miss some of the information and can occasionally be blurry.

5) Monitor the peer grading.

You'd think this went smoothly every time, especially given the detailed information they got in their peer grading practice on Lab 6, but there are always problems. Some students report that they cannot see a peer review assigned to them. Some students open the link to start working, but then close the browser to do something else and ultimately cannot find peer review thereafter. Some students report problems with the report file they are supposed to peer grade (though this should not happen, as the groups are supposed to double-check their file when they upload the submission). And the possible issues go on, and on, and on (as with anything).... Your job during this time is to answer questions and direct them to the information they need (and email me if you aren't sure what to do!). If students cannot see or have lost their peer review, you can issue a 'reminder' by going back to the peer review page for the current lab assignment (how to get here is described in Step 3). Once there, you can see the students' assigned reviews. If there is a green check mark next to the review (as there is for the top student listed here), then the peer grading has been completed according to ELMS (you will want to confirm this in step 6 below). If there is a yellow triangle with a black exclamation point inside next to the review (as there is for the bottom student listed here), then the peer grading has not been completed yet. If you hover your pointer over this line, the background will change and a green flipping arrow and a trashcan will appear. The green arrow is a 'reminder' icon—when you click on it, a reminder message is generated and sent to the individual student via ELMS. In this 'reminder' message, the student will have a link that they can click on that will take them to the report they are peer grading. This link should work, even once the peer grading has been completed, so it is possible for students to go back and edit their peer grading and change their scores—be aware that scores can change! This is yet another reason we insist the students email you their scores and comments when they are done. Without this, it is always possible that the student is just taking a break and will continue/revise later. Clicking on the trashcan icon delete's the peer review assignment (and you can follow the steps in 3 to re-assign it)—be careful with this, as it will delete any work the student has already begun; I use this only when the 'reminder' has not worked for the student.



6) Collect the peer grading scores, assign points for completing the peer grading, and determine individual lab grades.

As emails come in from students indicating their peer grading score and comments (and I promise to forward to you any emails that come to me without you, the TA, also CC'd), start recording the information in your spreadsheet. For Lab 6, I recorded this information in **Column H** of the first tab. I also looked over their feedback to ensure that they provided sufficient detail in their comments. You will not be able to judge 'fairness' until all the reviews for that same report come in, but you can judge 'critical thoroughness' pretty easily. If a report looks like it has insufficient comments, make a note for yourself.

When the date and time for the 'deadline' have been reached, note which students have not yet completed their peer grading (I make a pdf of the peer review page in ELMS to keep as a record) and send the tardy students another reminder using the reminder icon. If many students are supposedly 'done' according to ELMS but have not yet emailed you, message your entire section to remind them of the proper procedure. You can take the data down off of ELMS yourself by clicking on the peer review report you have assigned to your student (the name linked in blue for the assigned report) and then looking at the rubric for the score and the rubric and comments bar for the comments. You can do this, but it is cumbersome to navigate and, frankly, a waste of your time. If students do things properly, the information should flow directly to you and *only* that information which is for your own students in your own section(s).

Once you have all of the peer grading scores for a specific report, you will need to compare and combine the grades to determine the score for the report and also what score each peer grader is getting for their 'fairness' criterion. If you have any extreme outliers, investigate them (you might look at that student's comments as compared to the comments of the other peer graders *or* you might choose to take a quick look at the actual report). Here you are acting as the "journal editor" in our modeling of the process of peer review. You need to decide if any of the feedback (reviews) are inappropriate and should therefore be ignored (and if you do ignore any, you should reduce the 'fairness' score for the person submitting that peer grading feedback). Once you know which scores you think are fair, average them for a report score. Or, if you think they are all legitimate, even the outliers, average them all. This report score should be recorded for all of the students who were part of the lab group that wrote that report. The "timeliness" and "critical but fair" points the peer graders have earned should be recorded by their own names. (For Lab 7 these scores, report and peer grader earnings, should be recorded in **columns R** and **Q**, respectively.) Then the report score for their own report should be added to their peer grader earnings to determine their final score for the current lab.

If you are not sure how to evaluate a student's peer grading efforts, you can see the comments and feedback that I gave them for their practice peer grading of Lab 6. This may change your opinion of their work for your current lab. I will send an updated version of this spreadsheet when the last student is finally processed. In the spreadsheet, this is in **column B**. A green-highlighted cell indicates they were lenient (score higher than what the TA gave). "Too Lenient" as text in that cell indicates the score was more than 4 points higher than what the TA gave. Likewise, an orange-highlighted cell indicates they were harsh/strict and "Too Harsh" by

more than 4 points below what the TA gave. If the cell is white (no highlighting), then the peer grade they gave was within 1.5 points of what the TA gave—close enough! You may also see indications that the report was "Late" (up to 12 hours after the deadline; you should also see that their score is coded with red highlighting in **column H**) or "Very Late" (more than 12 hours after the deadline; you should also see that their score is coded with purple highlighting in **column H**), or that the report was "Terse" or had "Insufficient Comments." You may also see something like "sub. 1:18pm"—indicating that the report was late, but within the grace period of 90 minutes that I decided was reasonable for their first try at this. I warned anyone who submitted in that 90-min. window that we would not be so lenient in the future. Also, for a few special cases, late penalties were waived (and a reason noted). If you see light pink highlighting, this student has been emailed by me but has failed to respond. If you see no highlighting and "emailed," then I am waiting on a reply from them, but we have at least begun communicating. Both of these last cases will have an empty score highlighted in yellow for their peer grader earnings (**column J** for Lab 6).

Watch out for students completing their report in different/multiple sections and for students who did not complete the entire lab (due to an absence). I used color to help me see this: green highlighting in **columns F, K, and L**, for Lab 6, for those completing the report in multiple sections (whose report score must be gotten from two different reports—cut each report score in half and add them for the new score, e.g., see row 95); and blue highlighting in **columns J, K, and L**, for Lab 6, for those who missed one week of the lab (whose report score and whose peer grader earnings must both be cut in half, e.g., see row 118).

When you think you are done, double-check that the report score averages have been calculated properly (making sure to check for groups of fewer or more than 4 group members and therefore with more than 4 peer gradings, also checking for groups where one of the group members is from another section (I coded all members of such a group with red text)), and that any weird situations (absences, multiple sections) have been dealt with properly.

7) Update the lab grade column in ELMS with the correct final score for individual students in your section(s).

Double-check your work, then upload the scores (report plus peer grader earnings) to the current lab column in ELMS. You can enter these manually (I think this is easiest for small batches, such as individual sections) or do a csv upload. If doing a csv upload, be sure to use a current version of the ELMS gradebook (download first!--using an old version could over-write other graders' recently entered scores) and make sure the student ordering matches (ELMS does a weird alpha-sort) before copy-pasting scores. Do not "un-mute" the grade column. A professor or the Lead TA will do that, likely on the Friday/Saturday before the 2nd week of a lab begins and new lab reports start to get turned in (e.g., the lab 7 column will be un-muted March 18th or 19th, since the students start turning in the Lab 8 stuff during the week of March 21st—the Spring Break will give both the students and you some extra time to figure out how to do this without me in charge, so if it takes you a day or two to figure out how to do steps 1-4, don't sweat it!). As always, email me if you have any questions. You may not need these detailed protocol steps every time (you will do this for yourself four times this semester), but please use as needed!