Grading: policies, how-to, and tips
Resource Packet

Engineering GSI/IA Teacher Orientation

Concurrent Session
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Concurrent Session: Grading Resource Packet

**Things We Wish We Knew Earlier**

**Katrina & Marcial (Winter 2010)**
- Students care a lot about grades. Be fair, consistent, and try to understand where they are coming from.
- Sum the total points missed per problem / section / question and summarize on the first page (this can help reduce errors).

**Nick (Fall 2009)**
- Make sure the course has a grading/regrade policy at the beginning of the semester. If it doesn’t, MAKE ONE.
- Write up a set of ‘Grading Notes’ for each assignment. These ‘Notes’ are a list of common problems seen in the assignment. They should be posted with the assignment solution set, so students know how to improve their homework for the next assignment. In addition, these ‘Notes’ serve as a great journal of progress, help identify problem areas, and even become a good reference when creating test questions.

**Kristen (Fall 2009)**
- Grading is Deceptive! Student interest, Instructor interest, and the GSI/IA in between must navigate the complexities between correct and incorrect answers (emotions will run high!).
- Labs: Writing Critiques and evaluating the science within (really more of an art than a science. Grading rubrics are often only marginally helpful). Try to grade both Grammar and Data of the report (separately… but equally). Don’t forget to evaluate the logic that goes into linking scientific concepts in a concise and coherent way. Just listing the data is as bad as bad data.

**Michael (Winter 2009)**
- When grading homework or an exam, grade one problem for the whole class before grading the next problem. By doing this, the chance of taking off different amounts of points for the same error is minimized. Additionally, the time needed to grade will go down because it will take less time to grade as more exams are graded.
- When grading lab reports, always provide sufficient, constructive feedback. It would help to go over the reports with the students to provide them feedback on their work. If they know the areas where they need to improve, not only will they become writers, but grading will be less time consuming.
- Be prepared. Devoting some time in advance to looking at problem sets, solving problem sets, reacquainting yourself with the curriculum will save a good deal of time with student questions and issues as the semester progresses.

**Tabish (Fall 2008):**
- Develop a grading rubric for each assignment/exam, which should be then used for grading. It will help you stay consistent with the grading.
- Be consistent with the policies for all students e.g. what is considered late and how late submissions are handled. Avoid making subjective judgments… if in doubt, always refer to the primary instructor.
Survival Tips for Grading

• Have a set of guidelines for turning in assignments, regrades, and grades in general. These guidelines should be included in the syllabus given to the students on the first day of class. In general, the professor will provide these guidelines, but if he or she does not, then work in conjunction with the professor or develop one yourself.
  o Sample guidelines could include:
    ▪ All regrades must be turned into the GSI/IA within one week of the assignment being returned to the student. After one week, no regrades will be processed.
    ▪ All regrades must be submitted with a written explanation of what the student would like regraded.
    ▪ The GSI/IA reserves the right to regrade the entire assignment when a regrade is submitted.
    ▪ All homework will be collected at 10:45AM in class on Tuesdays. After 10:45AM on Tuesday, homework is late and will not be accepted or graded.

• Before grading, briefly skim through a portion of problems or essays.
  o This will give a good idea of average student performance and how to handle partial credit.
  o This also helps identify common errors, topics or issues that need to be reviewed or covered more thoroughly in future classes or discussion sections. These topics are also good areas for exam questions if you are asked to develop them.

• Be consistent with grading.
  o To help facilitate consistency, grade one problem on each paper until all papers have been completed. Then, grade another problem until all papers have been completed. Continue doing this until all problems have been graded.
  o If you have multiple graders working on a problem set, ensure that only one grader works on a particular problem.
  o Reread your first graded solution every 10 – 15 assignments to help maintain consistency.

• Decide beforehand how mechanical errors like grammar, units, significant digits and mathematical errors will be handled. Ensure that students are aware of your policy. Be consistent throughout the term.

• Be consistent with students
  o What you do for one student, you must do for all students, so be careful.
  o Never deny a student regrade request. It can cause issues between you and the student. If the request does not follow the course guidelines, refer the student to them.
  o If you are a member of an instructional team (particularly for a lab course), make sure there is a line of communication between all members.
  o Briefly review assignments returned from a grader before handing the work back to the students.
• **During and after grading, make note of common mistakes or problems encountered by students.**
  - It will give you an opportunity to see the concepts and/or methods that the students had trouble with on the assignment, which can be discussed at a later time.
  - If you have graders, briefly review assignments with them after grading or ask them to note any common errors seen in the assignments.
  - Use grader’s notes.

• **Provide written comments (feedback) to students to explain why they have lost points.**
  - This will save you time as it will reduce the number of students asking: “Why did I lose points on this problem?”
  - It will provide a learning tool for the students to learn from their mistakes.

• **Ensure that the written directions for a problem/assignment clearly define the scope of the assignment and what is expected of the students.**
  - A common excuse from students is: “Well, I didn’t know that’s what you wanted.” This can be avoided by being clear in writing from the beginning.
  - If you did not write the problem and are unclear of what is expected of the students, ask the person who wrote the problem/assignment statement. Ideally, this should be done before the students receive the assignment or sufficiently in advance of the due date.
  - Provide the students with sufficient time to ask questions for clarity before the assignment is due.

• **Clearly define to the students in written directions the point values associated with each problem or part of a project.**
  - This will alleviate the “How much is this problem worth?” questions.

• **Although solutions manuals are nice and convenient, it is in your best interest (as a GSI/IA) to write your own solutions or at least go through the problem yourself before consulting the solution manual.**
  - In writing your own solutions, it will be easier to assist students with the problems in office hours.
  - It will be easier to identify the steps in the solution process to assist in student instruction and identify partial credit.

• **For each assignment, provide the students with the average and standard deviation of the assignment.**
  - Providing statistics (particularly for exams or major projects) will allow the students to track their progress and success in the course and will reduce the number of questions from students asking how they are doing in the class.
• **Never publish students’ grades in a manner that can be easily identifiable by others.**
  o Never publish student grades by name, uniqname, birthday, etc. Using the student’s UM ID is a generally acceptable way to post grades.
  o Try having the students write their name on a coversheet so you can grade anonymously.
  o Write the final grade on an inside page so that students can keep their grades private when the work is returned to them.
  o Hand the assignment back to the students face down.

• **Don’t take things personally.**
  o Grading issues can cause students a significant amount of anxiety. They may express anger or despair over their grade. You do not need to be a student’s buddy or enemy when it comes to grading. If you have a method for grading and regrading, stick to it and remain impartial.

• **When in doubt, involve the professor on all judgment calls, or issues where you are uncertain of the University’s accepted protocol.**
  o It is best to keep the Professor abreast of any and all grade issues that arise between you and a student.

• **Grade in ink**
  o This prevents students from erasing your marks/corrections and putting in the correct answer.
  o Grade in colors other than red for it is viewed as less harsh to some students.

• **Cross out empty spaces on students assignments/exams**
  o Sometimes, after students receive their graded assignment or exam, they will add missing solutions on the reverse side, and ask for a regrade claiming that the solution was there all along and GSI/IA did not notice it before. To avoid this, cross out all the blank pages of students’ assignments when you are grading them, including the back sides of pages.
Life WITH a Grader

1. **Working with a grader.**
   *If you have a choice in selecting the grader(s) for your class, select a grader who has taken the class before and has done well in it. If this is not possible, make sure that the grader is proficient with the material.*

2. **Meet the grader as soon as possible.**
   *This ensures that you won’t have to grade the first few assignments.*

3. **Try to keep the grader anonymous if at all possible.**
   *Students should go through you to have grading issues settled, not the grader. The grader is just there solely to grade, not to deal with students.*

4. **Teach the grader good grading practice.** Together, go over the key points from the previous section: “Tips for grading”.

5. **Establish a routine for picking up and dropping off assignments.**
   *Establish a consistent location and time where the grader(s) can leave graded assignments and pick up assignments to be graded from you. This helps prevent confusion and aids in moving things along efficiently.*

6. **Know when the grader(s) will be out of town and when the grader(s) will be extremely busy with coursework.**
   *You don't want to pick up the slack for a grader because you were unaware they are done with finals and going home and not coming back until after the summer.*

7. **Establish due dates for returning graded assignments.**
   *Let the grader know when the graded assignments should be returned back to you. Don't leave the grader with an open deadline, so that they’ll get to grading the assignments whenever they feel like it.*

8. **Dealing with multiple graders.**
   *If there are multiple graders, make sure that you are consistent and clear to all of the graders. A good way to do this is to meet with all of them together at the same time.*

9. **Keeping track of grades.**
   *Establish early on who will be in charge of the master copy of the spreadsheet and who is in charge of updating the spreadsheet. You don’t want to return a stack of homework and then realize nobody wrote down the grades.*

10. **Meet with the grader(s).**
    *Meet with the grader(s) whenever necessary, particularly to explain how each assignment should be graded if an assignment is drastically different from previous assignments.*
11. **Assignment solutions.**
   
   *Have clear assignment solutions for the grader, including a grading rubric showing how many points each part of a problem is worth.*

12. **Be accessible to the grader.**
   
   *This is often easily done using e-mail. If you are not accessible to the grader, this can cause long delays in getting graded assignments back to you.*

13. **Following up.**
   
   *Ask the grader after the assignment is graded if there were any common mistakes that students were making. This allows you the opportunity to address these issues so that the class learns what they missed the first time around.*

14. **Regrade requests.**
   
   *Check with the grader to go over regrade requests. If you regrade yourself, you may be inconsistent with how the grader graded everybody else for the particular assignment.*
Life WITHOUT a Grader

1. The most obvious pitfall to working without a grader is that you will have additional work to do. Grading can be a time consuming process and can constitute a significant portion of your GSI/IA responsibility.

2. Depending on the instructor, you may be expected to create the homework solutions. Develop solutions that explicitly show the necessary steps to solve the problem. This is tantamount to having an extra homework assignment for yourself, so plan accordingly.

3. Students will require more than a grade on their assignment. As the grader, you should provide some form of commentary on their work detailing what they did incorrectly. The more information you provide on the assignments, the less questions that you will receive from students in office hours or via e-mail.

4. The grader can be solely responsible for accounting for as much as 80 to 100% of a student’s grade, depending on whether or not the professor chooses to grade exams or major assignments. As the grader, you will have to address discrepancies, issues of disgruntled students and regrades.

5. Grading your students’ work will allow you to become more familiar with their individual strengths/weaknesses. This will give you a better ability to address any problems they may have. It will also help you better develop your lectures/recitations and help them better prepare for tests.

6. Functioning as a grader will help to further familiarize you with the course material. A better understanding of the material will make it easier for you to handle student questions.

7. Good planning and clear explanations are necessary to prevent student confusion and frustration. Establish procedures for evaluating students and thereafter strictly adhere to them. Make certain you understand the professor’s expectations and grading standards. In the first week of class, preferably on the first day, state the course policies on such matters as missed exams and late assignments.

8. Be sure to keep accurate and detailed records. Maintain accurate and detailed records of your evaluation of each student’s performance throughout the semester. Most people save their records for a semester or year after the course has concluded since students may come back later to question a grade, to finish an incomplete, or to request a recommendation.
9. **If writing your own solutions, stay at least one problem set ahead of the students.**  
This is particularly important when the problems given do not come from a textbook. This will allow you time to find any errors, missing information, etc. that are in the problem statements. This also gives you a buffer for times during the semester where your schedule will be hectic.

10. **Don't be afraid to ask your professor or fellow GSI/IAs for insights/help if needed.**  
Remember that you are part of an instructional team.

11. **When grading papers/lab reports, make sure to put some comments on it... but not too much.**  
Students are typically perturbed when they receive a paper/lab report returned with only a grade on it or with superficial or no comments on it. On the other hand, the GSI/IA comments should not basically constitute a rewrite for the student. Constructive criticisms on both content and style, which show the student how to improve on a later draft or another assignment, are helpful and appreciated.

12. **When providing criticism, it should always be accompanied by positive reinforcement.**  
If you find yourself repeating the same kinds of criticism to many students, prepare a handout clarifying how the students can improve -- for example, on how to write a review or how to develop an argument. You must be consistent with the level of criticism you provide for the entire set of papers you grade. Be careful not to be strict on the first few papers/reports and then become lenient due to boredom or tiredness.

13. **Before the students take the exam, you or someone on the instructional team should take the exam.**  
This will help in finding any errors or other issues with the problem statements on the exam, reducing anxiety for both the instructional team and the students during the exam. As a GSI/IA, you should be able to finish it in half of the time that the students will be allotted. If it takes you much longer than that, notify the instructor or the person who wrote the exam.

14. **When grading an exam, grade one problem at a time.**  
This makes it easier to be consistent with giving partial credit for free response questions. It also allows you to get into a rhythm when grading multiple choice/true-false questions.

15. **As a GSI/IA, you should be aware of the following policies. If not, talk to the head instructor. Many of these should be made clear in the syllabus.**
   - What criteria will be used to determine the final grade?
   - Do class participation and attendance count?
   - Is effort rewarded too, or is only the result important?
   - Are makeovers or rewrites allowed?
   - Will the worst grade be dropped, or will optional assignments be provided for extra credit?
Assessing Teams

When assessing team projects, consider the following best practices:

- Measure individual performance and team achievements
- Evaluate individual contribution to teams
- Determine a clear grading scheme for team assignments
- Average team grade, weighted team grade with an individual grade
- Encourage cooperation on tests
- Offer bonus points on team tests
- Avoid any hint of competitive grading

When using peer assessment among teams, remember the following key points:

1. Students are likely to rate everyone as excellent
2. Students are likely to inflate self ratings
3. Student ratings may be based on personal prejudices rather than an objective use of a rubric
4. Students may complain about grades being affected by ratings
Writing a lab report serves several purposes. First, producing a report allows students the chance to put their observations and interpretations into a cohesive and coherent format. Secondly, it helps students prepare for their future careers, illustrating the process of conducting research and documenting results.

The following suggestions should help make the grading of lab reports easier.

1. **Lay out grading criteria clearly and in advance.** A written statement clarifying what your expectations are provides a means for the students to understand your expectations and ask questions as necessary. It can also serve as a useful reference tool should a student have a question about a grade received. Additionally, policies on late lab reports should be written down and handed out at the beginning of the term. This reduces possible misunderstandings and allows for easier decision making during the term.

2. **When grading lab reports, read through several before making any comments or determining scores.** This allows you to form a baseline impression for the class before grading individual reports. It also helps to form a checklist of criteria that you can refer to when grading, to ensure consistency in your marks and to give students a specific understanding of what you are looking for in that report. Find out if there is a course-wide checklist for grading each lab to promote consistency across labs. If possible, grade reports closer together in time to ensure greater consistency in grading.

3. **When developing your criteria, decide how heavily you will weigh content vs. form.** Content refers to the substance of the report: data, results, interpretations, conclusions, etc.. Form refers to how the substance is presented: organization of material, quality of graphs and tables, clarity of writing, grammar, etc.. Many courses will have a standard format that students should follow in doing their write-ups. Check with the course professor to develop a clear understanding of grading criteria for reports. It also helps to check with other GSI/IAs teaching the same course, or with those who have taught it previously.

   As with any "real" science, not all labs will work out successfully for students. In many labs, the report will not be graded on the success of the results, but on the students' interpretation of their results. Thus, students who do not get the desired results from an experiment, but make a thoughtful analysis of why or of what should have occurred would not be penalized in their report. Evidence of good interpretation or analysis involves identification of patterns or contradictions and a specific, plausible and well-supported explanation for these results.

4. **Give useful and prompt feedback to students.** In addition to determining a grade for the report, your role as a GSI/IA involves giving useful feedback to students. You should make comments on lab reports and return them with sufficient time for students to learn from the
comments before turning in their next report. When providing feedback, remember to focus on functional comments, not subjective opinions. For example comments such as "Could there be another explanation?" are more productive than statements such as "Oh really?" When providing feedback, try not to overwhelm the students. Sometimes, too many comments on a page can be daunting to a student who wants to improve. Instead, pinpoint a few key issues for each report. Spending extra time to thoroughly grade the first assignment and provide prompt feedback will greatly ease the grading procedure for the latter part of the semester.

5. **Determine your policy for late papers if not decided by the professor.** Policies for lateness have included: no late reports accepted, late reports accepted only with valid excuse, late reports accepted with grade reduction penalty, and one late lab accepted without penalty during the term. Develop a policy that fits with your philosophy and apply it consistently throughout the term. When determining your late policy, make sure to pay attention to when labs are due. If you are setting due dates that are difficult for students to meet, then you will probably have more late lab issues to address.

6. **Finally, remember that learning to grade is an ongoing process.** As you gain experience as a GSI/IA, you will develop your own methods and systems for grading, and will constantly fine tune them. Sharing grading issues and ideas with peers can help you in this process. If you have any doubts on a grading issue, consult the appropriate person in charge. It is difficult to alter grades once they are assigned.

   Be generous with reviews of past labs and quizzes. This is the students' best opportunity to learn from their mistakes. Post an annotated key to explain correct answers, or take the time to write thorough comments on each paper. --Margaret Bickmore, Geology GSI/IA
Example of a Formal Lab Report Evaluation

Giving students clear guidelines for what is expected in a lab report or how lab reports are evaluated will make your job of grading much easier. On the next few pages are examples of guidelines for lab reports that have been used by GSI/IAs.

Some general comments that apply to many reports are given below, with some specific comments written in. You may also find comments on your paper. Total points possible are 35.

**FORMAT**

**Title:** The title of an experimental report should indicate the factors being manipulated, the effects or responses being measured and (sometimes) the specific topic or organism under study. Be as concise as possible.

___/1

**Introduction:** The introduction should provide a clear statement of the problem or questions addressed by your study. It should give references to relevant reports by other workers and should include enough background information to make your report understandable as an independent unit.

___/4

**Materials and Methods:** This section should (1) enable others to judge whether your techniques justify your conclusions and (2) provide enough information to allow your work to be repeated. Since your protocol was detailed in the lab manual, a short outline or explanation and a formal reference to the lab manual will suffice. Include any deviations from the lab manual protocol.

___/3

**Results:** Tables and figures, although important, are not enough for this section. Describe your results briefly, but indicate trends in your data that will be discussed in the next section. Tables and figures should be numbered, labeled, and mentioned in the text. The dependent variables should be on the vertical axes and independent variables on the horizontal axes. Linear, semi-log or log-log graphs should be used where appropriate.

___/4

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2 Guidebook for Teaching Labs for University of Michigan Graduate Student Instructors by Beverly Black, Martha Gach, and Nancy Kotzian
**Discussion:** The discussion should include an error analysis (or at least an estimate of uncertainties), any inductions drawn from your results, and whether your data are consistent with relevant models or hypotheses.

___/4

**Summary:** The summary should be a shorter version (1-2 paragraphs) of the paper for those who don't want to read it in detail. This section should be independent of the paper. Tell what you did, what happened as a result, and what you concluded.

___/4

**Literature Cited:** Any facts or ideas that you did not generate yourself must be attributed to the source where you found them (including other people). Indicate such references by inserting the author's (authors') name(s) and the date of publication at the appropriate place in the text and by listing a complete citation under **Literature Cited.** If any of the analysis was done as a group effort, this should be indicated. All references cited MUST be mentioned in the text. See the lab manual supplement for complete citation format.

___/3

**SCIENTIFIC CONTENT:**

Is the reasoning accurate? Are all possible inferences made? No illogical inferences drawn?

___/3

**STYLE, GRAMMAR AND SPELLING**

___/4

**TOTAL ___/35**
Example of a Formal Lab Report Evaluation  
(courtesy of Michael Senra, GSI/IA, Department of Chemical Engineering)

In order for to gain a working knowledge of the work your rotation has completed in satisfying the overall project goals, a written report is required. The report is due one week after your last lab period no later than 1:40 PM on that day. The sections of the report are as follows:

Memo of Transmittal (Abstract): The abstract is of great importance. In industry (and academia), there is an extensive amount of literature available. In order to determine which papers to read, the abstract is often used as a deciding factor for it is supposed to give an understanding of what the paper is all about. Therefore, the abstract should highlight the most important parts of your work. The abstract is a stand-alone document and should NOT require the reader to refer to the report. The entire abstract MUST fit on the first page (with the heading). In general, abstracts are between 125 and 250 words, but this is not a requirement. (13 pts.)

Introduction (starts on page 2, even if the abstract does not take up the entire first page): The introduction should state the primary goal of the project and the objectives for the rotation. These can not be copied verbatim from the assignment memo. Additionally, a general discussion (you will go into detail on this later in the paper) on the methodology used to satisfy the objectives must also be included here. (6 pts.)

Theory: A strong understanding of the theoretical background is important to convey in this lab report. This section should include only RELEVANT theory needed to satisfy your objectives. All equations that were used for this report MUST be included here. You must include references to show where you obtained the theoretical background and equations present in this section. However, your report is not a textbook, so be careful with the amount of work you put in here. (9 pts.)

Experimental Apparatus and Procedure: The experimental apparatus section should briefly describe the apparatus, discussing the critical features of the equipment that were necessary to satisfy the group’s objectives. You may refer the reader to the equipment manual(s) for further reference as necessary. The experimental procedure should include your actual experimental design along with the rationale behind selection your design to satisfy the rotation objectives. (13 pts.)

Results: The results section should include the IMPORTANT results of the experimental design and/or theoretical analysis. These results should be put in a presentable form (i.e. tables and/or graphs as necessary). (6 pts.)
Analysis of Results (Discussion): This section is the most important part of the entire report for it provides the reader an insight into the work done and how it was used to satisfy the objectives. The following things should be included: (30 pts.)

1.) Graphs, tables and charts of manipulated data to make a point (i.e. show a trend, validate a theory).
2.) Comparisons of data with theory, correlations and previous work.
3.) Model description (if necessary). The description should include how the model works, why you chose to develop your model in this fashion and its limitations.
4.) Conclusions and trends that can be obtained from the data. (Ideally, some of these should be satisfied graphically when possible)
5.) Discrepancies between theory and data (if necessary).
6.) Error analysis. Where are the errors and how did they affect your data? Were the errors of significant importance?

Conclusions and Recommendations: The conclusions should include an overview of the progress made towards satisfying the laboratory objectives. The recommendation section should include suggestions for future work and on how to use the equipment for subsequent groups. (12 pts.)

References (Works Cited): All references not in-house should be included here. Any acceptable method can be used to organize this section.

Nomenclature: All variables must be properly labeled and given representative units. You may intersperse the nomenclature throughout the table or put it into one giant nomenclature table at the end of the paper. Either way is acceptable. (The nomenclature and references section are a combined 4 pts.)

Appendices: The appendices should include information that may be helpful to understand your work, but is not absolutely necessary to be in the body of the report. All calculations completed must be included in the appendices (TYPEWRITTEN). Anyone reading this paper should be able to go from your raw data to every derived quantity you report. These appendices should be divided into sections (Appendix A, Appendix B etc.) and must be presented in an organized fashion. Make sure that the appendices are relevant and just not a dumping spot for superfluous information. (7 pts.)

Writing: It is the opinion of the instructional staff that being able to write technically is of significant importance. Therefore, although a set number of points have not been set aside for grammar, style, flow, etc., it will be implicitly accounted for in the grading of each respective section.
Length: There is not a set maximum or minimum length for the report. Part of developing your expertise in technical writing is getting a feel for what does and does not belong in a paper and where the relevant information belongs. Therefore, in spite of there being no maximum, please take caution in including information that is not needed for this report. Reports must be single spaced.

Questions: Feel free to notify your lab supervisor of any question you have regarding the report. However, no questions will be answered after 5:30 pm on the day before the paper is due.
Example ‘Graders Notes’  
(Courtesy of Nick Bisek, GSI/IA, Department of Aerospace Engineering)

There are three objectives of ‘Graders Notes.’ First, they provide an opportunity to praise students for improvements made from previous assignment. Second, they can save time when grading, as the GSI/IA can refer students to the ‘Graders Notes’ for typical comments on particular problems. Finally, documentation like this can help identify problem areas which can be addressed in class and provide great ‘test’ questions.

Sample: ‘Graders Notes’ taken from AERO 526 (Hypersonics)

Grader’s Thoughts from HW #2

- There was a huge improvement in plots. A few students still need to remember to label their axes and identify curves by using a legend.
- Derive = Show Work. If you are asked to derive or prove something, you cannot simply state the final answer. In addition, if you’re not going to start with the most elementary equations, you need to state where you are getting your ‘starting’ equations from and you should actually write out the equations you are using.
  
  e.g. eq. 3.15 b) from class notes states: \[ \frac{p_2}{p_1} = \frac{2\gamma M_i^2 - (\gamma - 1)}{\gamma + 1} \]

- Flow is NOT isentropic through a shock.
- In aerospace engineering, \( \rho \) is density NOT pressure, please use this symbol as such.
- The Knudsen number (Kn) is the ratio of the characteristic length and the mean free path. Though there is some controversy in the scientific community as to the exact cut off, (ie. there are ways of extending the range of the continuum assumption), most agree the continuum approach is valid when Kn<<1 or Kn < 0.01.
Grading: policies, how-to, and tips

Engineering GSI Teacher Orientation
Concurrent Session

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Reflection Question

■ From your experiences as a student, what do you think are some major challenges with grading?
Objectives

- To develop a holistic understanding of the role assessment (grading) plays in the overall learning process for the student.
- Gain practical insights on grading from the perspective of the grader.

*Defined learning objectives make it easier to assess the students’ (and the instructors’) progress.*

Overview

- The administrative - Policies
- The theory - What *is* Assessment?
- The practical - How to grade (with exercises)
- The intangible - Survival tips
Overview

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Brainstorm

- What course policies may help you grade more successfully?
  - final overall grade
  - partial credit
  - makeovers/rewrites
  - late policy
  - extra credit
  - ask for re-grades

- To facilitate clear expectations, this information should appear in the syllabus.
Student privacy

- Family Educational Rights and Privacy Act of 1974 (FERPA)
  - act of 1974
  - protects the student’s education record

- As a GSI:
  - Ensure you understand how FERPA applies to
    - posting of grades
    - returning graded materials
  - Resources
    - http://compliance.umich.edu/education/studentrecords.html#hints
    - http://compliance.umich.edu/teaching.html
    - GSI Guidebook

Honor code

- Have a conversation with the instructor about honor code expectations at the beginning of the semester.

- Know how to report an honor code violation:
  1) Document everything (names, dates, evidence, etc.)
  2) Discuss with instructor
  3) Send a complete memo to enghonor@umich.edu
  4) Wait for further info from honor council; don’t discuss with anyone.
Honor Code Resources

- Resources:
  - Consult the pamphlet you received during the plenary session
  - With questions or concerns, contact: kmvargo@umich.edu, enghonor@umich.edu, or your CRLT-Engin ETCs
  - Honor Policies Applied to Sample Course Assignments: http://www.engin.umich.edu/students/honorcode/code/coursepolicy.html

Overview

- The administrative - Policies
- **The theory - What *is* Assessment?**
- The practical - How to grade (with exercises)
- The intangible - Survival tips
Two Kinds of Assessment

- **Formative**: low-stakes assessment (such as homework problems) that the GSI/IA uses to help students locate and resolve challenges in meeting learning objectives.

- **Summative**: a final—often high-stakes—indication (such as a test) of how well a student has met learning goals.

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Assessment Learning Cycle

1. **Define learning outcomes**
   - Assessment activity allows students to communicate their knowledge to the instructor

2. **Redesign Program for Learning**

3. **Measure Outcomes (Assess)**
   - Evaluation of the work results in an assigned grade

4. **Compare Actual to Desired Outcomes**
   - Feedback from the instructor offers formative instruction designed to help students meet learning outcomes.
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Exercise 1 – Answer Key Evaluation

**Instruction:** Using the light blue handout, evaluate the answer key to “Little Variety Test” (pink). (10 minutes)

**Debrief:** What does an answer key need in order to be effective? Does it overlook anything? What kind of feedback does it make possible? (5 minutes)
Exercise 2: Creating a Grading Rubric

**Instruction:** Using the yellow handouts, design a rubric for the question provided, then use that rubric to grade the responses on the second page. (10 minutes)

**Debrief:** What challenges did you face? How would you revise your rubric? Would it be helpful to see students’ solutions before creating the rubric? (5 minutes)

How to grade

**Steps in grading:**

1. Umm, this person sort of knew what to do, but used the formula incorrectly.
2. It's not quite an 8 or a 6, according to my rubric.
3. Is it a 7?
4. Does a seven really capture their level of achievement? Maybe 7.5.
5. No, 7.6.
6. 7.875?
7. Is that fair? 7.58493?
8. Grading: if only you cared a little less. www.phdcomics.com
How to grade

Steps in grading:

1. Define:
   - a grading rubric

2. Modify:
   - rubric after viewing several assignments

3. Grade:
   - Use modified rubric to grade remaining assignments
   - Ensures consistency

How strict or lenient should I be?:

- Grading has an effect on student learning
- Grading can be used to emphasize learning goals

- Introductory Courses: Early Projects/Presentations
  - Motivate students and introduce them to career activities.
- Lab reports and design reports from senior students
  - Prepare them for academia or the work place.

Be CLEAR, CONSISTENT, AND EFFICIENT!
Consider graders a part of the instruction team

- Know who the graders are as soon as possible
  Learn their emails, cell phone numbers, etc.
- Establish communication and a clear routine
- Maintain consistent communication throughout the term
- Keep graders in mind when writing homework
  Grading will need to be answers-based; graders should not need to do any interpretation
- Keep the graders anonymous

More tips in the resource packet.

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Grading tips

- Use formative assessment to set clear expectations
- Grade hard questions first; save multiple-choice and true/false questions for last
- Grade one question / one page at a time
- Grade on separate sheet

Find what works best for you and your students!

Survival Tips

- Time management – don’t spend too much time grading!
  - Be realistic – grading takes longer than you think!!!
- Record keeping
  - Record grades as well as the grading criteria you used
  - Keep grades secure (e.g. gradebook on ctools, backed up)
- Keep your friends close -> course instructor and admins
- Release student grades appropriately and in a timely fashion
- Golden rule -> treat students with respect
- Establish policies of instruction then follow them
Resources

- Use your GSI / IA Guidebook
  - Section discussing grading strategies
  - Lab section/Lab report grading
- Contact your Engineering Teaching Consultant (ETC)
- Sample rubrics:

**UM-CoE:**
No samples provided, but a description of the importance of grading, scoring & rubrics:
http://www.engin.umich.edu/teaching/assess_and_improve/handbook/direct/rubric.html

**Winona State University:** rubrics for a variety of disciplines including design, oral presentations, computer science, problem solving-reasoning, innovative design, etc.:
http://course1.winona.edu/shatfield/air/rubrics.htm

**California State University-Long Beach:** rubrics on programming:
http://www.csulb.edu/colleges/coe/cecs/views/programs/undergrad/grade_prog.shtml

Good Luck!