

TA Orientation 2006
Draft#1 of Schedule (August 11, 2006)

Date	Orientation Topic	Note, Readings & Homework (DUE in the morning following the listed date)
Mon 8/21	9:00-11:00am Rm 435 Overview of Physics Graduate Program (DGS) Possibly <i>Activities 1</i> (modified: just a work sheet for discussion.)	Ask students if <ul style="list-style-type: none"> ◆ They have already the fall housing, and ◆ If/when they have to move during the orientation.
	1-3:30pm: Meet with adviser and register for classes after consulting with his/her. 3:30pm: Rm. 216 Reception	Make sure you talk to your adviser about what s/he thinks “thinking like physicists” means, and how important “problem solving” is to her/his professional life as well as to live productively as a person.
Tues 8/22	9am-12n Vincent Rm 16 GWE (Preliminary Graduate Written Exam), Part 1	
	Rm. 157 1:30-2pm Jennifer Engler, UCCS (University Counseling and Consulting Services) 2:15pm- Safety training (Brian Andersson)	Read Introduction of “Instructor’s handbook” – IH . Read Martinez, “Problem Solving” in the booklet, <u>Selected Readings</u> . Think about goals of physics classes, appropriateness of problem solving as a goal.
Weds 8/23	9am-1pm Vincent Rm 16 GWE, Part 2	
	2:30-4:30pm Rm 157 <ul style="list-style-type: none"> ◆ TA duties; ◆ Discussion based on assignments. 	Readings: <u>Book (Redish)</u> <ul style="list-style-type: none"> • Chapter 1, pp 5-14 (8 pages) <u>IH</u> <ul style="list-style-type: none"> • Chapter 1 Think about positive and negative aspects of using group work in class based on your own experience.

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Thur 8/24	<p>9-11:30am Rm 157</p> <ul style="list-style-type: none">◆ Go over “Specific Duties” any questions?◆ Solve one of 5 GWE problems in groups, paying attention to the use of metacognitive skills by self reflection.◆ Rationale for UMn Model for Teaching discussion sections and labs.◆ Force Concept Inventory (If we run out of time, this can be left out)	

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	<p>1-3:30pm Rm 157</p> <ul style="list-style-type: none"> ◆ Continue with UMn rationales if needed ◆ Analysis of GWE solutions in terms of use of metacognitive skills and misconceptions. ◆ Solving “Cowboy Bob” problem in groups. ◆ Discussion of +/- of group activities if time permits. ◆ Analysis of novice solution of “Cowboy Bob. 	<p>Note for us: We need to distribute Warm-up questions and a set of answers (This should be in the activity book or HW. The discussion tomorrow will be done in a group of 7-8. They should have 3 different Warm-up Questions so that they don't have to listen to demonstration on the same question many times.) We had only 1 for 2006, however.</p> <ul style="list-style-type: none"> ◆ Diagnose problems that students are having. Complete Activity #3 in the blue binder. The instructions are on the first page - you should read through the 6 sample student answers to Warm-up questions, and write your notes on the Lab Preparation sheet. Pretend that these are student solutions you received before teaching a lab, and decide what you would want student groups to put up on the board at the beginning of class. Also write down some examples of questions you could ask the class (on the back side of the lab prep sheet). ◆ In the Peer Teaching booklet, read the lab called "Acceleration and Circular Motion" for familiarity. It should be the first lab problem in the book. Emir and I will demonstrate how to teach that lab on Friday morning. This demonstration will give you an idea of how physics labs are taught at the U of M. If you want more specific details, you can start reading ahead to chapter 3 of the Instructor's Handbook. ◆ On Friday afternoon you will meet in groups to discuss your lab preparation sheets from Activity #3. You will also use it to practice the "opening moves" for a lab session in front of your group. This should also help you prepare for the dress rehearsal of a lab on Monday afternoon.
Fri 8/25	<p>9-11:30am Rm 157</p> <p>Model <u>lab section</u>, and/or video clips. Discussion of what you saw in the model class/films.</p>	

Date	Orientation Topic	Note, Readings & Homework (DUE in the morning following the listed date)
	11:30am-1pm where? Lunch with senior graduate students	
	1-1:30pm Rm 157 Jan Morse – Ombudsman’s Office 1:30-3:30pm Rm 157 <ul style="list-style-type: none"> ◆ Execute the plan for the opening move you made yesterday in small groups ◆ Discussion/critique of the above. ◆ Execute the plan for the discussion based on the final group answers. (The answers should be distributed to the mock audience before the discussion.) ◆ Discussion/critique 	Readings: <u>Book (Redish)</u> <ul style="list-style-type: none"> • Chapter 2; pp 17-30 (13 pages) <u>Selected Readings</u> (Problem Solving and Cooperative Groups) <ul style="list-style-type: none"> • Heller & Heller –What is CPS? (6 pages) <u>IH Chapter 3 Pg 81-93</u> Try to keep one lab accessible over the weekend so that if any TA’s are interested in going over the lab, they can do it on their own. Doing it as a group should be encouraged.

Mon 8/28	<p>9-11:30am Rm 157 Going over one or two labs on your own time before tomorrow.</p>	
	<p>1pm- Rm 157 “Dress rehearsal” of a lab. We will set up lab computers so that each will demonstrate</p> <ul style="list-style-type: none"> ◆ Sloppily made measurements and plot(s) showing it. ◆ Data points outside of plotting range presumably because students did not do enough “exploration”. ◆ Plots with too few data points due to bad planning. ◆ Sign inconsistency between prediction and measurements in motion under gravity. ◆ Initial velocity = 0 in prediction and it is not zero for data, presumably because $t=0$ is not when the fall starts. <p>These have to be done with all but one TA outside the room. Or can we do this in a discussion format? Show each of the problematic computer screens to all TA's, and discuss how a TA should coach the students?</p> <p>Pull camera cable out to see if any TA's notice what's wrong with the computer. This can be done with everyone in the room, and one TA rehearsing.</p>	<p>Analyze the sample students' solutions you are given, and</p> <ul style="list-style-type: none"> ◆ Figure out how often they are able to apply physics and other (math) principles to the problems. ◆ When the student make a decision about what to do next (metacognitive actions), and where she is just manipulating what (equations) she already found? Does she appear conscious about when to be making a decision or just crunching equations? <p>Also</p> <ul style="list-style-type: none"> ◆ Think about how solution template influences students' learning in general and solutions in particular. ◆ Think about how much easier to understand and grade the solutions if everyone follows some standard template.

Tues 8/29	<p>9-11:30am Rm 157 Naomi Scheman, ethics in research.</p>	
	<p>1-3:30pm Rm 157 Model <u>discussion section</u>, and/or video clips. Discussion of what you saw in the model class/films. Discussion about the model session. Yuichi won't be available</p>	<p>Using yesterday's problem and solution set,</p> <ul style="list-style-type: none"> ◆ Make a plan on how you open the discussion session based on the problem. ◆ Think about how to coach each group based on the partial answers (How far students are supposed to have progressed in each solution for this question). Think also which group needs attention first. ◆ Make a plan for the end discussion based on the complete solutions. <p>Using this assignment, you will try out all three components of the discussion class separately in small groups tomorrow.</p>
Wed 8/30	<p>9-11:30am Rm 157 Discussion on</p> <ul style="list-style-type: none"> ◆ How often students are able to apply physics and other (math?) principles to the problem? ◆ When does the student make a decision about what to do next (metacognitive actions), and where is she just manipulating what she already has? Does she appear consciously making decision about when it's time to do one or the other? 	
	<p>1-3:30pm Rm 157</p> <ul style="list-style-type: none"> ◆ Each TA tries out his/her opening remarks, coaching ideas and the end discussion in small groups of ~8. <p>Designing a problem solving answer sheet for your students.</p>	<p>Reading:</p> <p><u>Activities Notebook</u></p> <ul style="list-style-type: none"> • Read the lesson Plans for First Discussion Session and Lesson Plans for First Lab Session (for your assigned teaching times) <p><u>Instructor's Handbook</u> (Other Teaching Resources)</p> <ul style="list-style-type: none"> • How to administer the FCI • Team Meeting Guidelines • Downloading Class Lists • Checking Pre-lab Quiz Scores <ul style="list-style-type: none"> • Useful Information for TAs

Thur 8/31	9-11:30am Rm 157 How to teach the <i>first</i> lab and discussion session Dress rehearsal of discussion session does not seem needed after Wednesday's activities.	
	1-3:30pm Rm 157 Sexual harassment, academic honesty, diversity and gender related issues.	Make a plan for the first lab.
Fri 9/1	9-11:30am Rm 157 Try out your first lab plan with classmates.	
	1-3:30pm Rm 157 Team Meeting with Faculty	