

TA Orientation 2007
August 20-24 & 27-31

Date	Orientation Topic
Mon 8/20	9:00-11:00am Rm. 435 Overview of Physics Graduate Program (DGS)
	1-3:30pm: Meet with adviser and register for classes after consulting with his/her. 3:30-4:30pm: Rm. 216 Reception
	Tonight: Make sure you talk to your adviser about what s/he thinks “thinking like physicists” means, what “problem solving” mean to him, and how important “problem solving” is to her/his professional life as well as to live productively as a person. Think about what “problem solving” mean to you, too. Wednesday afternoon, we will discuss issues you researched tonight. So it is important that you will have researched and thought about them before then.
Tues 8/21	9am-12n Rm. 150 GWE (Preliminary Graduate Written Exam), Part 1
	1:30-2:30pm Rm. 130 Research Ethics – Naomi Scheman 2:30-4:00pm Rm. 130 Safety training (Brian Andersson)
	Tonight: Read ♦ Introduction of “Instructor’s handbook” – IH . ♦ Martinez, “Problem Solving” in the booklet, <u>Selected Readings</u> . Think about what the goals of your physics classes would be, and appropriateness of problem solving as one of the goals.
Weds 8/22	9am-1pm Rm. 150 GWE, Part 2
	2:30-2:45pm Rm. 130 Intro to library 2:45-4:30pm Rm. 130 Intro to TA ♦ What do TA duties entail?; [Do I have specifics of TA duties as listed in IH?] ♦ Discussion based on assignments.
	Tonight: Read: <u>Book (Redish)</u> Chapter 1, pp 5-14 (8 pages) <u>IH.</u> Chapter 1 and 3 (sections I, III and IV) Think about positive and negative aspects of using group work in class based on your own experience.
Thur 8/23	9-11:30am Rm. 130 ♦ (Discussion continues if needed;) ♦ Rationale for UMn Model for Teaching discussion sections and labs. ♦ Force Concept Inventory
	1-3:30pm Rm. 153-155 ♦ Model <u>lab section</u> , and/or video clips. Discussion of what you saw in the model class/films.

Thur 8/23	<p>Pick out a problem or two from the latest GWE for which there was at least one moment when you did not know what you should do next while trying to solve the problem, and observe yourself and write down what goes around in your mind at those moments. If you are too good at solving this kind of problem (for you they are exercises), and don't have to think (make decisions) to find the solution, think about projects or research you have done. Can you remember those moments when you had to make decisions about what to do next? Can you describe them?</p> <p>Warm-up questions and a set of answers. The discussion tomorrow will be done in a group of 10-15.</p> <ul style="list-style-type: none"> ◆ Diagnose problems that students are having. ◆ Make a plan for how to start the lab using the preparation sheet (IH page 91?). In particular, plan should include which question(s) students to focus their group discussion and present on the board afterward. ◆ Make transparency(ies) of what students groups would present on the blackboard as their consensus for the Warm-up Question(s) after their discussion. (Choose 3-4 best answers in the packet and pretend that they are what groups present on the board.) This will be used in the tomorrow's lab summary discussion. ◆ Make a plan for how your would lead the summary discussion.
Fri 8/24	<p>9:00-9:30am Janet Morse, Ombudsman's office (conflict resolution)</p> <p>9:30-10:30am Linda Muldoon, UCCS (University Counseling and Consulting Services)</p>
	<p>11:00am-12:45pm where? Lunch with senior graduate students</p>
	<p>1:00-6:00pm Rm 130</p> <ul style="list-style-type: none"> ◆ Execute the plan for the opening you made yesterday in one of the 6 small groups of eight. ◆ Discussion/critique of the above. ◆ Execute the plan for the summary discussion based on the final group answers (which are presented on the transparencies you have prepared last night). Distribute copies of the transparencies you have prepared for this to the mock audience before the discussion. ◆ Discussion/critique of the above.
	<p>Readings over the weekend:</p> <p><u>Book (Redish)</u></p> <ul style="list-style-type: none"> • Chapter 2; pp 17-30 (13 pages) <p><u>Selected Readings (Problem Solving and Cooperative Groups)</u></p> <ul style="list-style-type: none"> • Heller & Heller –What is CPS? (6 pages) <p><u>IH Chapter 4 (Teaching a Discussion Section) Sections I through III.</u></p>

Mon 8/27	<p>9-11:30am Rm. 130 Going over one or two labs on your own time before tomorrow.</p>
	<p>1pm- Group A: “Dress rehearsal” of a lab (go around lab rooms). - 6pm Group B: Discussion (Rm. 130): - 3:30pm Why do students have difficulties in physics and solving physics problems? ◆ Expert-novice differences and/or Alternative conception.</p>
	<p>Analyze the sample students’ solutions you are given, and ◆ 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? Also ◆ 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.</p>
Tues 8/28	<p>9-11:30am Rm. 143/157 Model <u>discussion section</u>, and/or video clips Discussion of what you saw in the model class/films.</p>
	<p>1-3:30pm Rm. 130 Group B: “Dress rehearsal” of a lab (go around lab rooms). - 6pm Group A: Discussion (Rm. 130): - 3:30pm Why do students have difficulties in physics and solving physics problems? ◆ Expert-novice differences and/or Alternative conception.</p>
	<p>Using yesterday’s problem and solution set, ◆ 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 transparency(ies) of what students groups would present on the blackboard as their consensus for the final answer. (Choose 3-4 best answers in the packet and pretend that they are what groups present on the board.) This will be used in the tomorrow’s closing of discussion practice. ◆ Make a plan for the end discussion based on the complete solutions. Using this assignment, you will try out all three components (opening remarks – not a lecture, coaching and closing summary) of the discussion class separately in small groups tomorrow.</p>

Wed 8/29	9-11:30am Rm. 130 Discussion on <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 she just manipulates what she already has? Does she appear conscious about when to do one or the other?
	1-6pm Rm. 130 <ul style="list-style-type: none"> ◆ Each TA tries out his/her opening remarks, coaching ideas and the end discussion in one of the ~five small groups of about 10. ◆ Design a problem solving answer sheet for your students.
	Reading: <u>Activities Notebook</u> <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) <u>Instructor's Handbook</u> Chapter 2, section I through IV Chapter 5 (Other Teaching Resources) <ul style="list-style-type: none"> • Top 20 TA Traps • How to administer the FCI • Team Meeting Guidelines • Downloading Class Lists • Checking Pre-lab Quiz Scores • Useful Information for TAs
Thur 8/30	9-11:30am Rm. 130 How to teach the <i>first</i> lab and discussion session
	1-3:30pm Rm. 130 Sexual harassment, academic honesty, diversity and gender related issues.
	Make a plan for the first lab.
Fri 8/31	9-11:30am Rm. Find the lab room with the right setups Try out your first lab plan with classmates.
	1-3:30pm Rm. Location depends on the professor you will be working with. Team Meeting with Faculty