TA Orientation 2005
Schedule of Activities

Date	Orientation Topic	Readings & Homework (DUE on the date listed)
Weds 8/24	**Afternoon – Rm 157** TA duties; Intro to alternative conceptions ***Activities 1-2***	
Thurs 8/25	**Morning: Rm 157** Guest: Karl Smith, Professor of Civil Engineering: ***Activity 3*** **Afternoon** Rationale for UMn Model for Teaching discussion sections and labs; Force Concept Inventory ***Activity 4-5***	**Readings:** Book (Redish) • Chapter 1, pp 5-14 (8 pages) Selected Readings (Alternative Conceptions) • McDermott – Research on Conceptual Understanding in Mechanics (9 pages) • Hughes – How I Misunderstood Newton's Third Law (2 pages) • Lane – Why can't physicists draw free-body diagrams? (2 pages) • Parts of Arons (see annotations) – A Guide To Introductory Physics Teaching (10 pages)
Fri 8/26	**Morning:** Expert-Novice Problem Solving; Designing a problem solving framework for your students; ***Activities 6-8*** **Afternoon** Designing a problem solving answer sheet for your students; Students' Alternative Conceptions ***Activity 9***	**Readings:** Book (Redish) • Chapter 2; pp 17-30 (13 pages) Selected Readings (Problem Solving and Cooperative Groups) • Heller & Heller – What is CPS? (6 pages) • Larkin (3.5 pages) • Heller & Heller – Chapter 2: How do beginning students solve problems? (5 pages) **Homework #1:** Analyzing Students' Alternative Conceptions

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Sat 8/27	**Morning:** How are labs taught at the UMn? Why? ***Activity 10*** **Afternoon**: Preparation for Peer Teaching of Labs and Discussion sections ***Activity 11***	**Readings:** Book (Redish) • Chapter 8; pp 161-163 (2.5 pages) • Chapter 2, pp 30-47 (17.5 pages) Instructor's Handbook (Teaching a Laboratory Section) • Problem Solving Labs in Operation (15 pages) • Grading during the Lab, pages 71-72 (1 page) • Outline of Teaching a Lab Session (1 page) • Detailed Advice for Teaching Labs (6 pages) **Homework #2:** • Read your *assigned* Lab problems (that your team will teach) (LP) • Skim the relevant sections of textbook
Mon 8/29	**Morning:** Discussion of Homework 3; How are discussion sections taught at the UMn? Why? ***Activity 12***	**Readings:** Book (Redish) • Chapter 6, pp 115 -123 (9 pages) • Chapter 8; pp 142-169 (17 pages) Instructor's Handbook (Teaching a Discussion Session) • Overview of Teaching a Discussion Section (2 pages) • Outline for Teaching Discussion Sessions (1 page) • Detailed Advice for Teaching Discussions (4.5 pages) Competent Problem Solver Read/skim the descriptions and examples: • Pictures and motion diagrams: pages 1-4 and 1-5; pages 1-8 to 1-9; pages 2-4 and 2-12; pages 2-6 and 2-14; and pages 3-6 to 3-13 (17 pages) • Free-body and force diagrams: pages 4-1 through 4-21 (21 pages) **Homework #3:** Solving problems using your problem solving framework (in Activity Notebook)

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Tues 8/30	**Morning:** Teaching Problem-solving labs and discussion sessions: Some Details **Afternoon**: Practice (peer) teaching session I	**Readings:** Book (Redish) • Chapter 3; pp 62-68 (6 pages) Instructor's Handbook (Cooperative Problem Solving) • How to coach students during CPS? (12 pages) • How to form groups (4 pages) • Criteria for assigning students to groups (5 pages) • How do I maintain well-functioning groups (~7 pages) **Homework #4:** • Read 1201 Lab I Pr#__, 1101 Lab I Pr#__, and 1301 Lab I pr#__ • Skim the relevant sections of textbook • Solve Problems by answering Method Questions **OR** finish preparations for peer teaching
Wed 8/31	**Morning:** Teaching Problem-solving labs and discussion sessions: Some Details ***Activity 13*** **Afternoon:** Practice (peer) teaching session II	**Readings:** Book (Redish) • Chapter 3; pp 51 -62 (11 pages) • Chapter 5 – The MPEX; pp 105-111 (6 pages) Instructor's Handbook (Teaching a Discussion Session) • Characteristics of Good Group Problems, pp 111-114 (4 pages) • Difficulty of Good Group Problems, pp 115-117 (3 pages) **Homework #5:** (due in morning) • Read 1201 Lab II Pr#__, 1101 Lab II Pr#__, and 1301 Lab II pr#__ • Skim the relevant sections of textbook • Solve Problems by answering Method Questions **OR** finish preparations for peer teaching

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Thurs 9/1	**Morning:** Evaluating lab reports: Physics & Writing ***Activities 14-15*** **Afternoon**: How can you teach for Diversity and personal interactions? What to do about cheating ***Activity 16***	**Readings:** Selected Readings (Sexual Harassment, Ethics and Diversity) • Equal Opportunity Brochure, sections 2-8 (8 pages) • Standards of Student Conduct, sections IV & V (3 pages) • Shymansky & Penick: Do TAs exhibit sex bias? (2 pages) • Seymour – Gender differences in attrition rates (9 pages) • Article from Minnesota Daily (1 page) Activities Notebook • Read Case Studies from Activity 16 **Homework #6:** Initial Evaluation of Example Student Laboratory Reports (in Activity Notebook)
Fri 9/2	**Morning:** How to teach the *first* lab and discussion session **Afternoon:** Team Meeting with Faculty	**Readings:** Instructor's Handbook • Preparation for Teaching Lab, pp 85-92 (6 pages) • Preparation for Teaching Discussion, pp 101-102 (2 pages) • Some Other Teaching Tools, pp 103-105 (3 pages) Instructor's Handbook • Team Meeting Guidelines • Downloading Class Lists • Useful Information for TAs

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