

## PHYS 520: Overview and Schedule

Learning goals. You will be able to articulate the basic principles of effective learning and explain what research these principles are based upon. You will be able to implement these principles in the contexts of teaching a variety of physics topics to students at different grade levels.

Week	Class Dates/Times	Pre-reading/Activities
Week 1	Wed. Sept. 16 @ 9am	Pre-reading assignment <a href="#">“Why Not Try a Scientific Approach to Science Education?”</a> View Harvard talk, look at <a href="#">lecture notes from that talk</a> . Discuss talk, discuss what they are or have taught. Expectations about work load, scheduling time and place of course. Imagine Days talk clicker questions.
Weeks 2 & 3	Tues. Sept. 22 @11am	Pre-reading, <a href="#">How People Learn chaps 1-3</a> . Activities-- for course you are teaching design activities that explicitly 1) probe and connect with prior knowledge, 2) determine expert-novice differences and design activity to practice and provide feedback on shifting to more expert-like, 3) practice metacognition. 4) provide examples of poor and good transfer and create task for the class to teach transfer. <b>Week 3 - Robert Bjork seminar at 4 on Sept 30 on learning for retention. Optional but recommended.</b>
	Wed. Sept. 30 @ 9am	
Week 4	Fri. Oct. 9 @ 3pm	Pre-reading, <a href="#">Lecture Notes on Goals and assessments from learning goals workshop</a> . (from Carl Wieman Learning Goals workshop). After this six slide introduction, class member take turns coming up with a learning goal associated with ‘harmonic oscillators’, with each student tackling a goal at a different level of Bloom’s taxonomy. Assignment for next class: each student picks a topic, preferably in a course he/she is teaching this year, and develops learning goals on that topic for each of the six cognitive levels in Bloom’s taxonomy.
Week 5	Wed. Oct. 14 @ 9am	Student presentations of learning goals and group discussion – have students use learning goals checklist to evaluate each other’s sets of goals.
Weeks 6 & 7	Wed. Oct. 21 @ 9am	Pre-reading, <a href="#">Ericsson Deliberate practice chapter</a> . Member of class presents, others bring questions for discussion. Design deliberate practice activity for your class. Present and critique.
	Wed. Oct. 28 @ 9am	
Weeks 8, 9 & 10	Wed. Nov. 4 @ 9am	Read and present on papers. <a href="#">Hake-- FCI</a> . <a href="#">Expert Tutors</a> , <a href="#">Mazur Peer Instruction Chapter</a> . Week 8 -Carl gone but class without him. <b>Week 9 - No class but expected to attend Rachel Scherr’s talk on Monday, November 9<sup>th</sup> (time/location to be confirmed)</b>
	Week of Nov. 9 <sup>th</sup> <b>No class</b> →	
	Wed. Nov. 18 @ 9am	
Weeks 11 & 12	Wed. Nov. 25 @ 9am	Pre-viewing clicker videos. pre-reading- <a href="#">clicker booklet</a> . Assignment. Design and present 10 minute interactive lecture using clicker questions. Evaluate.
	Wed. Dec. 2 @ 9am	

\*All Classes to be held in Wesbrook 300F.