

## Physics 9HE: Applications of quantum mechanics—Syllabus

**Coordinates:** Tues/Thurs 12:10-1:30 PM, Physics Building room 148

**Final date:** Tuesday March 20<sup>th</sup>, 8AM-10AM, Physics Building room 148

**Textbook:** Modern Physics by Randy Harris (feel free to purchase the international edition which is identical to the hardcopy) with supplemental reading from other texts which will be posted to Canvas. Also, the Feynman lectures, available online, may be a useful resource, particularly volume III ([http://www.feynmanlectures.caltech.edu/III\\_toc.html](http://www.feynmanlectures.caltech.edu/III_toc.html) )

**Instructor:** Prof. I. Vishik, Physics Building room 239  
[ivishik@ucdavis.edu](mailto:ivishik@ucdavis.edu)

**Office hours:** Monday 3-4PM  
Wednesday 1-2PM  
Or by appointment

**TA:** Russell Hawkins

**TA office hours:** TBD

**Assignments:** Weekly problem sets (7 in total), two in-class midterms (Feb 13, first week in March), one final (Tues. March 20, 8-10AM)

**Grading:** Homework 15%, Midterms 35%, final 50%

**Homework policy:** Homeworks are due at the beginning of class on Tuesdays. Lowest homework grade will be dropped. You are expected to show every step in your homework problems. Full credit will not be given for homework which skips many steps, beyond what one can reasonably calculate in their head. If homework answer is obviously copied from online source or classmate, zero points will be given for that problem.

**Late homework:** 50% deduction if turned in within 24 hours, 75% deduction if turned in 24-48 hours of due date, not accepted after 48 hours.

**Exam policy:** One handwritten note sheet (8.5 x 11", front and back) may be used for the midterm and final, and will be collected with the exam. Calculators may be used on exams. As with homework, you are expected to show all work.

**Course description:** This class covers several of the numerous applications of quantum mechanics with an emphasis on applications important to modern technology. The three major topics covered in this course will be the hydrogen atom, lasers, and semiconductor theory/devices.

**Prerequisites:** course 9HD and Mathematics 22B (may be taken concurrently)

**Accompanying lab/recitation:** Dr. Tom Weideman, WF 11:00-12:50 Roessler 166