

# Syllabus for PHY 521 Spring 2018

## Introduction to Quantum Mechanics II

Class schedule: M W F 11:00–11:50, CP 183  
Instructor: Christopher B. Crawford  
CP 373, 257-2504, [crawford@pa.uky.edu](mailto:crawford@pa.uky.edu)  
Office hours: by appointment  
Homepage: [http://www.pa.uky.edu/~crawford/phy521\\_sp18](http://www.pa.uky.edu/~crawford/phy521_sp18)  
Textbook: David J. Griffiths, “Introduction to Quantum Mechanics,” (required)  
Stephen Gasiorowicz, “Quantum Physics,” (recommended)  
Prerequisites: PHY 520

**Course Description** A continuation of PHY 520 introducing the quantum description of systems with spin and approximation methods. Principles of quantum mechanics will be illustrated by their application to model systems selected from the fields of atomic, solid state, nuclear, and particle physics.

**Office Hours** The course is conceptually challenging and will require significant effort, but I am committed to help you succeed if you are willing to do the necessary work. I have an open door policy: come by my office and discuss physics at anytime unless my door is closed (for a phone conference or approaching deadline). Please prepare by reading the assigned chapters before coming to my office, and turn off cell phones and text messaging while in my office. There will be have an optional one hour homework recitation each week in my office.

**Attendance and Reading Journal** There is no credit for attendance; however, students are responsible for for all material discussed during class. Students must study the textbook and keep a personal reading journal of active inquiry. Reading journal entries must be submitted to Canvas before 11:00 each class to receive credit. Each entry will receive a grade of 0 (incomplete), 1 (partial), or 2 (satisfactory). The ten lowest scores will be dropped, but up to five may be kept for extra credit (even above 100%).

**Homework** Weekly homework assignments must be turned in to Canvas before midnight of the day they are assigned. Half of the credit will be awarded for problems from the textbook, and the other half for custom problems related to my own research. There is a penalty of 25% per class for late homework. Arrangements must be made with the instructor the day before the due date to receive a homework extension. Students are encouraged to study and discuss homework together, but must turn in their own work. Students are encouraged to use the Canvas discussion board instead of email for questions of general interest. Please respond to each other’s questions. The instructor will also monitor and participate in the discussion.

**Group project** A project similar to last semester will be presented by each group of three students on April 27. The project will still involve a computer demonstration component, but emphasis will be placed on the written and oral presentation of the concepts. The topic must be chosen from Griffiths chapters 10 or 12, or be approved by the instructor.

**Exams** There will be one midterm exam scheduled during class and a cumulative final exam. Both exams are closed book, with an  $8\frac{1}{2} \times 11$  in<sup>2</sup> formula sheet allowed. Exams will only be rescheduled for officially excused absences.

**Grading** Extra credit will be awarded for finding new errors in the textbook, or solving special questions posed during class. The following table shows the range for each letter grade. The instructor may upgrade the final letter grade based on effort and class participation.

Grade breakdown		Letter grade
reading journal	5%	A 85–100%
homework assignments	35%	B 70–84%
group project	10%	C 55–69%
midterms exams	25%	D 40–54%
final exam	25%	E 00–39%

**Academic integrity** Copying homework or exams from people, solution manuals, online, or any other source is plagiarism and will not be tolerated. University policies and procedures regarding cheating and other academic conduct will be strictly adhered to and can be reviewed at [www.uky.edu/StudentAffairs/Code](http://www.uky.edu/StudentAffairs/Code).

**Course evaluation** Course evaluations are an important component of our Department's instructional program. We value your feedback on both the course content and instructor. The standard university TCE eXplorance Blue (<http://www.uky.edu/eval>) will be used to collect evaluations via your computer, tablet, or smart phone. You will receive an reminder email near the end of the semester with instructions. We would also appreciate immediate feedback at [http://www.pa.uky.edu/~crawford/phy521\\_sp18/feedback.html](http://www.pa.uky.edu/~crawford/phy521_sp18/feedback.html) and will address issues or incorporate suggestions into the course in a timely manner.

**Academic accommodations due to disability** If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center, <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter>, for coordination of campus disability services available to students with disabilities.

See <http://uksga.org/resource-cheat-sheet> for additional student resources.

**Intellectual property** Class lectures and course materials are the intellectual property of the instructor. Students may record lectures only for their own personal use. Any other use, including sharing with other students in the class, requires written permission from the instructor. Recording for any business/commercial purpose is a violation of federal IP (copyright) law and class policy, and is strictly prohibited.