

Course Syllabus

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| Day | Topics | due | reading |
|-----------|---|---------------------|---------|
| 1W 3-Jan | Angular momentum algebra and spin | | 4.4 |
| 1F 5 Jan | Spin-1/2 | | 4.4.1 |
| | <i>Section None</i> | | |
| 2M 8 Jan | Electron in a magnetic field | | 4.4.2 |
| 2W 10 Jan | Adding angular momentum | HW1 | 4.4.3 |
| 2F 12 Jan | More adding angular momentum | | |
| | <i>Section Addition of angular momentum</i> | | |
| 3M 15 Jan | --- MLK Day --- | | |
| 3W 17 Jan | Identical particles and exchange | HW2 | 5.1 |
| 3F 19 Jan | Atoms | | 5.2 |
| | <i>Section Identical particles</i> | | |
| 4M 22 Jan | The periodic table | | 5.2.2 |
| 4W 24 Jan | Time-independent perturbation theory | HW3 | |
| 4F 26 Jan | Degenerate perturbation theory | | |
| | <i>Section Time independent perturbation theory</i> | | |
| 5M 28 Jan | Fine structure of H atom | | |
| 5W 31 Jan | Hyperfine structure | HW4 | |
| 5F 2 Feb | Zeeman effect | | |
| | <i>Section Review</i> | | |
| 6M 5 Feb | MIDTERM 1 | | |
| 6W 7 Feb | Density of states | | |
| 6F 9 Feb | Bose and Fermi gas | | |
| | <i>Section Degenerate states</i> | | |
| 7M 12 Feb | Black-body radiation | | |
| 7W 14 Feb | Variational principle | HW5 | |
| 7F 16 Feb | Time dependent perturbation theory | | |
| | <i>Section Degenerate perturbation theory</i> | | |
| 8M 19 Feb | --- Presidents Day --- | | |
| 8W 21 Feb | More perturbation theory | HW6 | |
| 8F 23 Feb | Einstein coefficients | | |
| | <i>Section Review</i> | | |
| 9M 26 Feb | MIDTERM 2 | | |
| 9W 28 Mar | Selection rules | | |
| 9F 2 Mar | Adiabatic theory | | |
| | <i>Section Time dependent perturbation theory I</i> | | |
| 10M5 Mar | Berry phase | | |

10W7 Mar EPR and Bell inequality

10F 9 Mar QUBITS






HW7

*Section Time dependent perturbation theory II*M 12 Mar **8.30-10.25 FINAL EXAM****Lectures:** MWF 10.30-11.20 in A110**Tutorials** (<https://sharepoint.washington.edu/phys/ugrad/tutorials/Pages/default.aspx>): **Friday** 8.30-9.20 (A), 9.30-10.20 (B), 12.30-1.30 (C), 1.30-2.30 (D), all in B109

Tutorial homework is due on Tuesdays.

Instructor: David Cobden**TAs:** Kyle Aitken ([kaitken@uw \(mailto:kaitken@uw\)](mailto:kaitken@uw)), Tong Wan ([tongwan@uw \(mailto:tongwan@uw\)](mailto:tongwan@uw)), Peter Ehlers ([ehlersp@uw \(mailto:ehlersp@uw\)](mailto:ehlersp@uw)) Hao Geng ([hg666@uw \(mailto:hg666@uw\)](mailto:hg666@uw))**Resources.** Our main text will be Introduction to Quantum Mechanics, 2nd Edition, David J. Griffiths, (Cambridge, 2005).**Problem sets.** These will be assigned and graded most weeks. Answers must be submitted on paper in class on Wednesday. Only your best 5 of the 7 problem set scores will be used in the grade calculation. Graded homework returns will be placed in the small filing cabinet in the lounge near my office. If you will miss the deadline **let me know why beforehand!****Exams.** Closed book, closed notes, and no calculators**Equation sheet for 325.** [Equation sheet for 324](#)**Lecture notes** (will be populated as we proceed)**Final grade calculation:** (a) 25% each for the best 2 of: midterm 1, midterm 2, homework; (b) 40% for the final exam; and (c) 10% for the tutorials. The median will be close to 3.2.**Prof's office hours:** Tuesday at 4.30 and Friday 12.30. Please feel free to ask me questions at other times too.**TA office hours:** Monday 3.00 in C221 (Tong) Tuesday 3.30 (Kyle)**Study sessions:** B439, 3.30 pm til whenever

Course Summary:

| Date | Details | |
|------------------|--|----------------|
| Wed Jan 10, 2018 |  HW1 (https://canvas.uw.edu/courses/1125468/assignments/4027670) | due by 11am |
| Fri Jan 12, 2018 |  Pretest 1 (https://canvas.uw.edu/courses/1125468/assignments/4064064) | due by 8:30am |
| Tue Jan 16, 2018 |  Tut HW1 (https://canvas.uw.edu/courses/1125468/assignments/4064066) | due by 12pm |
| Wed Jan 17, 2018 |  HW2 (https://canvas.uw.edu/courses/1125468/assignments/4061636) | due by 10:30am |
| |  Attendance 1 (https://canvas.uw.edu/courses/1125468/assignments/4064065) | |