

| 402b-Fall 2019---Course Plan |                           | <i>This plan will be updated and adjusted as we go. () refers to GS sections.</i>          |  |
|------------------------------|---------------------------|--|--|
| week                         |                           | Mon  | Wed  |
| 1                            | Aug. 26                   | survey of 401; composite systems; combining spatial & spin degrees of freedom; warmup math | two particle systems; bosons and fermions (5.1)  |
| 2                            | Sep. 2                    |  | helium atom (5.2.1)  |
| 3                            | Sep. 9                    | many electron atoms, periodic table, Hund's rules (5.2.2)                                  | Hund's rules   |
| 4                            | Sep. 16                   | degenerate electron gas, white dwarfs and neutrons   | Chandrasekhar limit (notes), band structure (5.3.2), tight binding model (notes)           |
| 5                            | Sep 23                    | Feynman-Hellmann theorem; relativistic and spin-orbit corrections (fine structure) (7.3)   | fine structure, nuclear magnetic moments, hyperfine interaction (7.5), hyperfine structure |
| 6                            | Sep. 30                   | perturbation theory (7.1); Zeeman effect history   | Zeeman effect (7.4)  |
| 7                            | Oct. 7                    | Stark effect, Van der Waals, other examples?   | symmetries   |
| 8                            | Oct. 14                   |  | midterm exam   |
| 9                            | Oct. 21                   | variational method, molecules (8)  | molecules  |
| 10                           | Oct. 28                   | WKB approximation (9)  | WKB approximation  |
| 11                           | Nov. 4                    | scattering (10)  | scattering   |
| 12                           | Nov. 11                   | dynamics (11)  | dynamics   |
| 13                           | Nov. 18                   | dynamics   | dynamics   |
| 14                           | Nov. 25                   | dynamics   |  |
| 15                           | Dec. 2                    | dynamics   | dynamics   |
| 16                           | Dec. 9                    | dynamics   |  |
|                              | Final exam, Tues. Dec. 17 |  |  |





