

# Calendar of Topics

| MONDAY  | WEDNESDAY   | FRIDAY  |
|---|---|---|
| 1/13<br>THIS CALENDAR IS SUBJECT TO CHANGE!                                 | 1/15 7.1 - 7.4<br>Introductions   | 1/17 7.1 - 7.6<br>Review Standing waves, Stationary States, Particle in a Box |
| 1/20 7.7 - 7.8, 7.11<br>The Free Particle, the Non-Rigid Box, and Tunneling | 1/22 8.0 - 7.3<br>2-D Schrödinger Equation  | 1/24 8.3<br>2-D Schrödinger Equation  |
| 1/27 8.4<br>2-D Schrödinger Equation  | 1/29 8.5<br>3-D Schrödinger Equation Separation of variables                                  | 1/31 8.5 - 8.6<br>Separation of variables & Quantization of Ang. Momentum     |
| 2/3 8.6<br>Spherical Harmonics & Associated Legendre Functions              | 2/5 8.7 - 8.10<br>Spherical Harmonics & Associated Legendre Functions                         | 2/7 8.8 - 8.10<br>Hydrogenic Wave Functions                                   |
| 2/10 8.9 - 8.10<br>Shells and Hydrogen-Like Atoms                           | 2/12 Ch. 9.1-9.5<br>Electron Spin, Torque on a Current Loop                                   | 2/14<br>MID-WINTER BREAK  |
| 2/17 9.5 - 9.7<br>The Zeeman & Anomalous Zeeman Effect                      | 2/19 10.1-10.5<br>Multi-electron Atoms, Pauli Exclusion Principle                             | 2/21 Ch. 8, 9, 10<br>Catch-Up And Review                                      |
| 2/24 11.1 - 11.3<br>Radiation by Classical Charges, Transitions             | 2/26 Ch. 8, 9, 10<br>Exam 1   | 2/28 11.6 - 11.9<br>Spontaneous Emission, Selection Rules                     |
| 3/3 11.6 - 11.9<br>Lasers   | 3/5 15.1 - .5 & TRex 9.1 - 9.2<br>Intro to Statistical Mechanics & The Boltzmann Distribution | 3/7 TRex 9.2 - 9.3<br>The Boltzmann Velocity Distribution & Heat Capacity     |
| 3/10 TRex 9.4<br>The Boltzmann Velocity Distribution & Heat Capacity        | 3/12 TRex 9.5 - 9.6<br>Classical & Quantum Statistics   | 3/14 TRex 9.7<br>Fermi-Dirac Statistics                                       |
| 3/17 Vernal Equinox 3/19 11:06 pm<br>←                                      | 3/19<br>SPRING BREAK  | 3/21<br>→   |
| 3/24 TRex 9.7<br>Classical and Fermi-Dirac Electrical Conductivity          | 3/26 TRex 9.7<br>Fermi-Dirac Statistics and Heat Capacity                                     | 3/28 TRex 3.5 & 9.7<br>Blackbody Radiation and Bose-Einstein Statistics       |
| 3/31 TRex 9 & TZDII Ch. 1<br>Heat Capacity Revisited                        | 4/2 TRex 3 & 9 & TZDII Ch. 15<br>Catch-up and Review  | 4/4 16.1 - 16.23<br>Properties of the Nucleus                                 |
| 4/7 16.3 - 16.6<br>The Nuclear Force & Potential                            | 4/9 TRex 3 & 9, TZDII 15<br>Exam 2  | 4/11 16.7<br>Binding Energy,  |
| 4/14 16.7 - 16.9<br>Binding Energy, Nuclear Shell Model, Mass Spectrometer  | 4/16 17.1 - 17.3<br>Nuclear Fission & Fusion  | 4/18 17.1 - 17.3<br>Nuclear Fission & Fusion                                  |
| 4/21 17.1 - 17.3<br>Radioactive Decay                                       | 4/23 17.1 - 17.3<br>$\alpha$ & $\beta$ Decay  | 4/25<br>SCHOLARSHIP & SCIENCE FESTIVAL DAY                                    |
| 4/28 17.4 - 17.6<br>$\alpha$ & $\beta$ Decay                                | 4/30 17.4 - 17.6<br>Cosmology in Brief  | 5/2<br>Review   |

**Final Exam:**

Final Exam: 1:30 pm, Wednesday, May 7, 2025