

Lecture Schedule and Reading Assignments

Reading assignments by default refer to your text *Essential University Physics*, by Wolfson. For example, “20.2” refers to Section 20.2 in Wolfson. When Section 1 is assigned, start at the beginning of the chapter. “Supplementary Reading” refers to the Physics 212 *Supplementary Reading* book. “Ex” refers to Example problems given in sections of the text and “CEX” refers to Conceptual Example problems in sections of the text. “Eq” refers to Equations, and “Fig” refers to Figures.

Unit 1: Electricity and Magnetism

- January 20, Tuesday **Lecture 1: Electric Charges and Forces**
Read: 20.1, 20.2
Study: Eq 20.1; Fig 20.6; Ex 20.2
- January 22, Thursday **Lecture 2: Electric Fields**
Read: 20.3–20.5 (stop at “Dipoles in Electric Fields” on p. 381)
Study: Eqs 20.2a, 20.2b, 20.3, 20.7; Exs 20.4, 20.5, 20.7
- January 27, Tuesday **Lecture 3: Gauss’s Law**
Read: 21.1–21.4
Study: Eqs 21.1, 21.2, 21.3, 21.6, 21.7; “Problem Solving Strategy 21.1” starting on p. 396; Exs 21.1, 21.3, 21.4, 21.6
- January 29, Thursday **Lecture 4: Electric Potential and Current**
Read: 22.1–22.2 (stop at “Continuous Charge Distributions” on p. 422); 24.1 (stop at “Current: A Microscopic Look” on p. 450), 24.3–24.5
Study: Eqs 22.1a, 22.1b, 22.3, 22.5; Exs 22.1, 22.5; Eqs 24.1a, 24.5, 24.6, 24.7; Ex 24.4
- February 3, Tuesday **Lecture 5: Magnetic Forces**
Read: 26.1–26.4 (stop at “The Hall Effect” on p. 495). 26.6 (start after Eq. 26.12 and skip “Dipoles and Monopoles”)
Study: Eqs 26.1, 26.5, 26.13, 26.15; Exs 26.1, 26.5; CEx 26.1
- February 5, Thursday **Lecture 6: Magnetic Fields**
Read: 26.5, “Solenoids” in 26.8
Study: Eqs 26.7, 26.15, 26.21; Fig 26.21; Exs 26.3, 26.4, 26.9
- February 10, Tuesday **Lecture 7: E&M Summary and Applications**
No new reading.

- February 12, Thursday **TEST 1**

Unit 2: Induction, Waves, and Light

- February 17, Tuesday **Lecture 8: Faraday’s Law of Induction**
Read: 27.1–27.3, 27.6 (through p. 537)
Study: Eqs 27.1a, 27.1b, 27.2; Exs 27.3, 27.5, 27.10
Ignore: “Diamagnetism” in Section 27.6 (p. 538).
- February 19, Thursday **Lecture 9: Traveling Waves and Electromagnetic Waves**
Read: 14.1–14.2 up to “The Wave Equation” (p. 254), 29.1–29.4 (through p. 569), 29.5–29.7
Study: Eqs 14.1–14.3; Figs 29.7, 29.10
Skim: The rest of 29.4
- February 24, Tuesday **Lecture 10: Phasors and Standing Waves**
Read: 14.7–14.8; Supplementary Reading Ch 1.1–1.2
Study: Ex 14.6; Supp Fig 1.4
Ignore: Eq 14.13 (it’s not wrong – just too specialized to be useful)
- February 26, Thursday **Lecture 11: Interference**
Read: 14.6, 32.1–32.2; Supplementary Reading Ch 1.3
Study: Exs 14.5; Supp Exs 1-3, 1-4
- March 3, Tuesday **Lecture 12: Diffraction and Diffraction Gratings**
Read: 32.6; Supplementary Reading Ch 1.4–1.7
Study: Figs 32.24, 32.26; Supp Exs 1-5, 1-6, 1-7
- March 5, Thursday **Lecture 13: Beyond Classical Physics: Photons and Wave-Particle Duality**
Read: Supplementary Reading Ch 2
- March 10, Tuesday **SPRING BREAK**
- March 12, Thursday **SPRING BREAK**
- March 17, Tuesday **Lecture 14: Induction, Waves, and Photons: Summary and Applications**
No new reading.
- March 19, Thursday **TEST 2**

Unit 3: Quantum Mechanics

- March 24, Tuesday **Lecture 15: Waves, Probability and Uncertainty**
Read: Supplementary Reading Ch 3
- March 26, Thursday **Lecture 16: Quantized Energies and Spectra**
Read: Supplementary Reading Ch 4
- March 31, Tuesday **Lecture 17: Quantum States and Spin**
Read: Supplementary Reading Ch 5
- April 2, Thursday **Lecture 18: Quantum Statistics and Applications**
Read: Supplementary Reading Ch 6
- April 7, Tuesday **Lecture 19: Three-Dimensional Wavefunction and Semiconductors**
Read: Supplementary Reading Ch 7
Skim: Section 7.5.1
- April 9, Thursday **Lecture 20: Quantum Entanglement**
Read: Supplementary Reading Ch 8
- April 14, Tuesday **Lecture 21: Quantum Mechanics Summary**
No new reading.
- April 16, Thursday **TEST 3**

Unit 4: Particle Physics and Cosmology

- April 21, Tuesday **Lecture 22: Elementary Particles and Conservation Laws**
Read: Supplementary Reading Ch 9
- April 23, Thursday **Lecture 23: Fundamental Forces and Interactions**
Read: Supplementary Reading Ch 10
- April 28, Tuesday **Lecture 24: Diagrams, Decays, and Lifetimes**
Read: Supplementary Reading Ch 11
- April 30, Thursday **Lecture 25: Cosmology**
Read: Supplementary Reading Ch 12
- May 6, Wednesday **FINAL EXAM, 7:30–10:30 pm**