

## sp212\_spring2013\_schedule

### Suggested Problems:

Chapter 21: 4, 5, 6, 11, 17, 42, 56  
Chapter 22: 5, 9, 16, 19, 24, 29, 32, 34, 40, 54, 56, 59  
Chapter 23: 5, 10, 18, 21, 22, 27, 33, 36, 41, 45, 52  
Chapter 24: 1, 4, 5, 9, 13, 16, 21, 28, 34, 37, 43, 47, 59, 62  
Chapter 25: 2, 3, 8, 10, 14, 31, 32, 40, 45, 49  
Chapter 26: 1, 7, 18, 20, 21, 29, 38, 41, 47  
Chapter 27: 2, 5, 7, 15, 18, 20, 24, 30, 31, 36, 40, 57, 58, 59, 62  
Chapter 28: 1, 3, 8, 18, 21, 29, 33, 41, 49, 57, 64  
Chapter 29: 7, 9, 11, 21, 33, 36, 39, 43, 49, 50, 52, 56  
Chapter 30: 2, 3, 7, 11, 17, 29, 31, 34, 37, 44, 50, 53, 61, 67, 74  
Chapter 31: 1, 9, 12, 20, 24  
Chapter 32: 2, 5, 9, 16, 18  
Chapter 33: 2, 3, 6, 12, 15, 19, 34, 36, 47, 55, 59, 65, 68  
Chapter 34: 2, 7, 40, 41, 43, 47, 49, 81, 82  
Chapter 35: 6, 15, 19, 20, 26, 35, 36, 54, 79  
Chapter 36: 1, 2, 6, 20, 21, 36, 45, 47

### Week 1: 8 January - 11 January

1. Tuesday 21.1 - 21.4 Electric Charge, Coulomb's Law.
2. Wednesday 21.4 - 21.6 Continuing with Coulomb's Law.
3. Friday 22.1 - 22.5 The Electric Field.

Lab: \*\*\* OPEN \*\*\*

### Week 2: 14 January - 18 January

4. Monday 22.6 - 22.7 Line of Charge, Charged Disk.
5. Wednesday 22.8 - 22.9 Charges and Dipoles in an Electric Field.
6. Friday 23.1 - 23.4 Flux and Gauss' Law.

Lab 1: *Introduction to Electrical Measurements*

### Week 3: 21 January - 25 January

\*\*\* Monday Holiday Martin Luther King\*\*\*

7. Wednesday 23.5 – 23.6 Gauss' Law and Coulomb's Law, Conductors.
8. Friday 23.7 - 23.9 Applying Gauss' Law.

Lab 2: *Simple Circuits*

### Week 4: 28 January - 1 February

9. Monday 24.1 - 24.5 Electric Potential.
10. Wednesday 24.6 - 24.9 Electric Potential Due to Charges.
11. Friday 24.10 - 24.12 Electric Potential Energy, Conductors.

Lab 3: *Equipotentials and Electric Fields*

### Week 5: 4 February - 8 February

12. Monday 25.1 - 25.4 Capacitance, Capacitors in Parallel and Series.
13. Wednesday 25.5 - 25.7 Energy in an Electric Field, Dielectrics.
14. Friday 26.1 - 26.4 Current and Resistance.

*Lab 4: Capacitance and RC Circuits*

**Week 6: 11 February - 15 February**

15. Monday 26.4 - 26.6 Resistance, Ohm's Law.

16. Wednesday 26.7 Power in Electric Circuits.

**\*\*\* Friday DEMONSTRATION LECTURE 4: ELECTROSTATICS \*\*\***

*Lab: \*\*\* OPEN \*\*\**

**Week 7: 18 February - 22 February (Grades are due Wednesday.)**

**\*\*\* Monday is Washington's Birthday \*\*\***

17. Wednesday 27.1 - 27.6 Single Loop Circuits.

18. Friday 27.7 Multiloop Circuits.

*Lab: \*\*\* OPEN \*\*\**

**Week 8: 25 February - 1 March**

19. Monday 27.7 - 27.8 Multiloop Circuits, Ammeters and Voltmeters.

20. Wednesday 27.9 RC Circuits.

21. Friday 28.1 - 28.6 The Magnetic Field.

*Lab 5: Kirchoff's Rules*

**Week 9: 4 March - 8 March**

22. Monday 28.8 - 28.10 Magnetic Forces, Magnetic Dipole Moment.

23. Wednesday 29.1 - 29.3 Calculating the Magnetic Field.

24. Friday 29.4 - 29.6 Ampere's Law, Magnetic Field from a Coil.

*Lab 6: Magnetic Force*

*SPRING BREAK*

**Week 10: 18 March - 22 March**

25. Monday 30.1 - 30.5 Faraday's Law.

26. Wednesday 30.6 - 30.8 Inductors, Self-Inductance.

27. Friday 30.9 RL Circuits.

*Lab 7: Force between Current-Carrying Wires*

**Week 11: 25 March - 29 March**

28. Monday 30.10 - 30.12 Magnetic Field Energy, Mutual Induction.

29. Wednesday 31.1 - 31.5 LC Oscillations, RLC Circuit.

**\*\*\* Friday DEMONSTRATION LECTURE 5: ELECTRODYNAMICS \*\*\***

*Lab: \*\*\* OPEN \*\*\**

**Week 12: 1 April - 5 April**

30. Monday 32.1 - 32.5 Maxwell's Equations.

31. Wednesday 33.1 - 33.5 Electromagnetic Waves, The Poynting Vector.

32. Friday 33.6 - 33.7 Radiation Pressure, Polarization.

*Lab: \*\*\* OPEN \*\*\**

**Week 13: 8 April - 12 April (Grades are due Tuesday)**

33. Monday 33.8 - 33.10 Reflection and Refraction.

34. Wednesday 34.1 - 34.5 Mirrors.

35. Friday 34.6 - 34.7 Thin Lenses.

*Lab 8: Faraday's Law and Inductance*

**Week 14: 15 April - 19 April**

36. Monday 35.1 - 35.6 Diffraction, Double-Slit Interference.

37. Wednesday 35.7 - 35.8 Thin Films, Michelson's Interferometer.

38. Friday 36.1 - 36.5 Single-Slit Diffraction.

*Lab 9: Thin Lenses*

**Week 15: 22 April - 26 April**

39. Monday 36.6 – 36.8 Circular Apertures, Diffraction Gratings.

\*\*\* Wednesday OPEN \*\*\*.

\*\*\* Friday DEMONSTRATION LECTURE 6: LIGHT AND OPTICS \*\*\*

*Lab 10: Diffraction Gratings*

**Week 16: 29 April - 30 April**

\*\*\* Monday OPEN \*\*\*.

\*\*\* Tuesday SPRING TERM ENDS \*\*\*.