

PHY 3323 Schedule				
Week	Material	Reading Assignment	Homework Assignment	Special
Jan. 10	Vector algebra	Chapter 1	Problem Set 1	
	Vector calculus			
	Curvilinear coordinates			
	Dirac δ functions			
	Vector fields			
Jan. 17	Electrostatics I: Electric Fields	Chapter 2.1, 2.2	Problem Set 2	MLK Day, Monday, Jan. 17 No class
	Superposition, Coulomb's Law			
	Electric fields, continuous charge distributions, field lines			
	Gauss's Law			
Jan. 31	Electrostatics II: Electric Potential	Chapter 2.3	Problem Set 3	No class: Jan. 26
	$\nabla \times \mathbf{E} = 0 \rightarrow \mathbf{E} = -\nabla V$			
	Poisson's, Laplace's equations			
	Potential of charge distributions			
	Boundary conditions			
Feb. 7	Electrostatics III: Work, Energy, Conductors	Chapter 2.4, 2.5	Problem Set 4	
	Work done in moving charges			
	Electrostatic energy			
	Ideal conductors			
	Surface charges			
	Capacitance and capacitors			
Feb. 14	Methods of Electrostatics I	Chapter 3.1, 3.2	Problem Set 5	
	Laplace's equation			
	Boundary conditions and Uniqueness Theorem			
	Method of Images			
Feb. 21	Methods of Electrostatics II	Chapter 3.3, 3.4	Problem Set 6	
	Separation of variables in Cartesian, spherical, and cylindrical coordinates			
	Green's Functions			
	Multipole Expansions			
	Electric Dipoles and Quadropoles			
Feb. 28	Electric Fields in Matter I	Chapter 4.1, 4.2	None	Exam 1, Wednesday, February 23 Ch. 1-3.2
	Dielectrics			
	Polarization			
	Bound charges			
	Internal electric fields in dielectrics			

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Mar. 6	SPRING BREAK			
Mar. 13	Electrostatic Fields in Matter II	Chapter 4.3, 4.4	Problem Set 7	
	Electric displacement D Theory of linear dielectrics			
Mar. 20	Magnetostatics I	Chapters 5.1, 5.2	Problem Set 8	Exam 2 Wednesday, Mar. 22 Ch. 3.3-4
	Magnetic fields and forces			
	Cyclotron Motion Biot-Savart Law			
Mar. 27	Magnetostatics II	Chapter 5.3,5.4	Problem Set 9	
	$\nabla \cdot \mathbf{E}, \nabla \times \mathbf{E}$			
	Ampere's Law			
	Charges vs. monopoles			
	Vector potential Magnetic multipoles			
Apr. 3	Magnetostatics in Matter I	Chapter 6.1,6.2	Problem Set 10	
	Diamagnets and paramagnets			
	Magnetic dipoles			
	Magnetization			
	Bound currents			
Apr. 10	Magnetostatics in Matter II	Chapter 6.3,6.4	Problem Set 11	
Apr. 17	Magnetic displacement, H			
	Magnetic susceptibility Ferromagnets			
Apr. 24	Review/Catch-Up			
May 4	FINAL EXAM			