

Physics 530 – Fall, 2022

Homework can be uploaded on Brightspace.

Class Schedule

<i>Lecture</i>	<i>Date</i>	<i>Topic</i>	<i>Reading</i>	<i>Homework</i>	<i>Problems</i>
1	8/23	Vector Algebra and Differential Calculus	1.1-.2		
2	8/25	Integral Calculus	1.3	HW1 assigned	1.2; 1.3; 1.5; 1.7; 1.9; 1.10; 1.14; 1.15; 1.16; 1.18; 1.26
3	8/30	Curvilinear Coordinates	1.4		
4	9/1	The Dirac Delta Function	1.5 - .6	HW2 assigned HW1 due	1.29; 1.30; 1.33; 1.34; 1.37; 1.43; 1.45; 1.47; 1.50; 1.58
5	9/6	Theory of Vector Fields; Electric Field and Divergence and Curl of Electrostatic Fields	2.1 - .2		
6	9/8	Electric Potential and Work	2.3 - .4	HW 3 assigned HW2 due	2.1; 2.2; 2.5; 2.9; 2.11; 2.13; 2.14; 2.15; 2.19; 2.20; 2.21; 2.23; 2.25; 2.29
7	9/13	Energy in Electrostatics Conductors; Laplace's Equation and	2.5, 3.1-.2		

		the Method of Images			
8	9/15	Separation of Variables and Multipole Expansion	3.3-.4	HW 4 assigned; HW3 due	2.31; 2.34; 2.39; 2.40; 2.42; 2.43; 2.483.1; 3.3; 3.7; 3.10; 3:13; 3:15; 3.17; 3.19;
9	9/20	Polarization	4.1		
10	9/22	The Field of a Polarized Object	4.2	5	3.21; 3.23; 3:27; 3:294.1; 4.2; 4.4; 4.7; 4.8; 4.10; 4.12; 4.13
11	9/27	Review (Ch. 1-3)			
	9/29	Mid-term examination I			
12	10/4	The Electric Displacement	4.3	6	
13	10/6	Linear Dielectrics	4.4		4.9; 4.15; 4.16;
	10/11	October Break			
14	10/13	The Lorentz Force Law	5.1	7	
15	10/18	The Biot-Savart Law	5.2		4.18; 4.19; 4.21; 4.22; 4.26; 4.32; 5.1; 5.2; 5.3; 5.5; 5.8; 5.11
16	10/20	Review			
	10/25	Mid-term Examination II			
17	10/27	The Divergence and Curl of B	5.3	8	
18	11/1	Magnetic Vector Potential	5.4		5.14; 5.15; 5.16; 5.17; 5.20
19	11/3	Magnetization	6.1	9	
23	11/8	The Field of a magnetized Object	6.2		5.23; 5.25; 5.27; 5.34; 6.1; 6.3; 6.5; 6.6

24	11/10	The Auxillary Field H	6.3	10	
25	11/14	Linear and Nonlinear Media	6.4		6.7; 6.9; 6.12; 6.13; 6.14
26	11/17	Electromotive Force	7.1	11	
27	11/22	Electromagnetic Induction	7.2		6.16; 6.17; 6.18; 6.21; 7.1; 7.2; 7.3; 7.5; 7.7
	11/24	Thanksgiving			
28	11/29	Maxwell's Equations	7.3	12	
29	12/1	Catch up			7.12; 7.13; 7.15; 7.21; 7.22; 7.26; 7.28; 7.31; 7.40
30	12/6	Review			
31	12/8	Review			
		Final Examination			

This schedule is subject to change. In particular, we will likely fall behind schedule in the beginning of the semester so homework assignments will be adjusted accordingly. Different problems may also be assigned.