## **Physics 112 Syllabus**

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Date	Торіс	Readings	Exercises	Lab
Jan 16	Coulomb's law	24.1-24.5, N 20.5-	1,3,4, <mark>N17</mark>	Electrostatics
		20.6		Demonstrations
18	Line of charge	24.6-24.9, N20.6-	5,6, <mark>N25</mark>	
		20.7		
20	Electric Field	24.10-	7, <mark>N4</mark>	
		24.19, <mark>N21.1-21.4</mark>		

23	Gauss' law	24.20-24.25, <mark>N22</mark>	8,10, <mark>N 16</mark>	Electrostatic
25	Gauss' law	24.26-24.29, <mark>N22</mark>	9,11	problems
27	Field plotting	25.1-25.12, <mark>N23</mark>	2,4, <mark>N34</mark>	

30	Conductors	26.1-26.10, <mark>N22.7</mark> -	1,3,4, <mark>N20 (Ch22)</mark>	Field plotting
		22.8		
Feb 1	Conductors	26.11-26.17	6,7,10,	
3	Electric circuits	27.1-27.10, <mark>N24.1</mark> -	1, N27,N29	
		24.10		

6	Kirchhoff's laws	27.10-	2,3, N44	Charge/discharge
		27.13 <mark>,N24.11</mark>		
8	Capacitors	27.14-	5,6, <mark>N46</mark>	of a capacitor
		27.32, <mark>N25.1</mark> -		
		25.2,N25.5-25.10		
10	Magnetism	28.1-28.17, <mark>N26.1</mark> -	2,3, <mark>N6</mark>	Read 27.22-27.28
		26.2		

13	Exam 1	Ch. 24-27		Magnetic field
15	Particles in B fields	28.18-28.23	4,5	of a coil
17	Relativistic E & P	28.24-28.33	8,9,10	

20	Ampere's law	29.7-29.13, <mark>N26.8</mark> -	4,5,6,	e/m
		26.11		
22	Ampere's law	29.14-29.18	7,8	
24	Faraday's law	30.1-30.10, <mark>N27.2</mark>	1, <mark>N5</mark>	

27	Faraday's law	30.11-	2,3,4, <mark>N11</mark>	Faraday's law
		30.20, <mark>N27.3-27.4</mark>		
29	Faraday's law	30.21-30.26	5,6,8, <mark>N16,N17,N18</mark>	and magnetic
				force on a
Mar 2	Light	33.1-33.11, <mark>N32.1</mark> -	1,2,3,4, <mark>N3</mark>	conductor
		32.2		

12	Diffraction grating	33.12-33.19, <mark>N32.6</mark>	5,6,9, <mark>N44</mark>	Spectrometer
14	Doppler & grating	33.20-33.30, <mark>N32.5</mark>	10,13,14, <mark>N40</mark>	
16	Photons	34.1-34.9	1,2,3,	

19	Exam 2	Ch 28-33	Omit Ch 31,32	Diffraction of
21	Interference Thin Films	Nolan 32.4	N23,N26,N35	slits
23	Continue above		N31	

26	x-ray diffraction	36.1-36.7	1,2,3	x-ray
28	Photons	34.1-34.16	4,6,7,10	diffraction
30	Electron	35.10-35.12, 36.8-	ch36.4,5&6	
	diffraction	36.14		

Apr 2	Lasers	37(all)	1,2,4	Snell's law
4	Reflection and refraction	Optics 1-18, N30.1-30.2,N31.1- 31.6	1a,1b,2,3	
6	No class			

9	No class			
11	Lenses	Optics 18- 30,N31.8-31-13	6,7,8	No lab
13	Lenses	Cont.	9,11,12,13	

16	Bohr Theory	35.1-35.12	1,2,5	Lenses
18	continue		7,8,9,10	
20	Exam 3	Ch 34-Optics		

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25	continue			
27	Review	Course evaluation		
May 4th 8:30	Final Exam		Formula sheet allowed	

Hour exams =25 %	Quizzes and problem solutions=25%
Final exam=25%	Laboratory average=25%

Problem solutions are to be your own work and but cooperation with other students is permitted. Help with problems is available from the instructor, problem sessions and the evening help sessions (run by the Society of Physics Students). Office hours are posted but I am available at any time that I am not in class or working in a laboratory.

Objectives of the course:

- 1. to develop skills in quantitative analysis through problem solving
- 2. to develop techniques in laboratory data acquisition and scientific measurements
- 3. to provide students with the ability to think logically and critically

4. to provide students with sufficient knowledge in physics to undertake advanced courses

Attendance of lectures is important since new material, problem solutions, different approaches from that of the text and computer instructions will be presented during this time.

Students who wish to request accommodations in this class for a disability should contact Mr. Joe Kempfer, Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510). Accommodations cannot be provided until authorization is received from the office of Learning Services.