

Physics 112 Syllabus

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 Text: Physics 2000 (Part 1 , Part 2), Calculus 2000 by E.R. Huggins
 Nolan Physics CD (N)

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

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

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

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

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

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

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

15	Diffraction grating	33.12-33.19,N32.6	5,6,9,N44	Spectrometer
17	Doppler & grating	33.20-33.30,N32.5	10,13,14,N40	
19	Photons	34.1-34.9	1,2,3,	

22	Exam 2	Ch 28-33	Omit Ch 31,32	Diffraction of
24	Interference -- Thin Films	Norlan 32.4	N23,N26,N35	slits
26	Continue above		N31	

29	x-ray diffraction	36.1-36.7	1,2,3	x-ray
31	Photons	34.1-34.16	4,6,7,10	diffraction
Apr2	No Class			

5	Electron diffraction	35.10-35.12, 36.8-36.14	ch36.4,5&6	Snell's law
7	Lasers	37(all)	1,2,4	
9	Reflection and refraction	Optics 1-18, N30.1-30.2,N31.1-31.6	1a,1b,2,3	

12	Lenses	Optics 18-30,N31.8-31-13	6,7,8	Lenses
14	Lenses	Cont.	9,11,12,13	
16	Bohr Theory	35.1-35.12	1,2,5	

19	continue		7,8,9,10	Radioactive
21	Nuclear matter	20.1-20.8	1	decay
23	Exam 3	Ch 34-Optics		

26	Nuclear matter	20.9-20.20		No Lab
28	Review			
29	Review	Course evaluation		

May 4th	Final Exam	1:30	Formula sheet allowed	
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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.

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 are not permitted to bring their calculators to exams. Scientific calculators will be provided at the exams by the Physics Department. If you wish, you may check out a calculator in order to become familiar with it.