

Class	Date	Topics:
		Special relativity
1.	W 19 Jan	Experimental basis of SR, Einstein's postulates
2.	F 21 Jan	Simultaneity and Lorentz transformations
3.	M 24 Jan	Time dilation and length contraction
4.	W 26 Jan	Minkowski's spacetime diagrams
5.	F 28 Jan	Spacetime interval and metric
6.	M 31 Jan	Paradoxes of special relativity
7.	W 2 Feb	Relativistic momentum and energy
8.	F 4 Feb	Mass/energy conversion; antiparticles
9.	M 7 Feb	Remarks on general relativity
		Principles of quantum physics
10.	W 9 Feb	Quantization of charge and energy
11.	F 11 Feb	Black body radiation
12.	M 14 Feb	The photoelectric and Compton effects
13.	W 16 Feb	Rutherford and the atomic nucleus
14.	F 18 Feb	Bohr's model of the atom
15.	M 21 Feb	De Broglie's hypothesis and wave/particle duality
16.	W 23 Feb	Wave packets
17.	F 25 Feb	Uncertainty principle; probability amplitudes
18.	M 28 Feb	<i>First midterm exam covering sessions 1–15</i>
19.	W 2 Mar	Schrödinger's equation in 1 dimension
20.	F 4 Mar	Particle in an infinite square potential well
	5–13 Mar	<i>Spring recess</i>
21.	M 14 Mar	Particle in a finite square potential well
22.	W 16 Mar	Expectation values and operators
23.	F 18 Mar	Simple harmonic oscillator; symmetries
24.	M 21 Mar	Reflection and transmission in collisions
25.	W 23 Mar	Barrier penetration and tunneling
		Fundamentals of atomic and subatomic physics
26.	F 25 Mar	Schrödinger's equation in 3 dimensions
27.	M 28 Mar	Angular momentum; hydrogen atom
28.	W 30 Mar	Hydrogen quantum numbers and energy levels
29.	F 1 Apr	Electron spin; the Stern–Gerlach experiment
30.	M 4 Apr	Spectroscopic notation; periodic table of elements
31.	W 6 Apr	Identical particles and the Pauli principle
32.	F 8 Apr	Fundamental interactions and classification of particles
33.	M 11 Apr	<i>Second midterm exam covering sessions 16–30</i>
34.	W 13 Apr	Nature of the N - N force; the deuteron
35.	F 15 Apr	Nuclear binding, structure and stability
36.	M 18 Apr	Conservation laws and symmetries
37.	W 20 Apr	The Standard Model: a new table of elements
38.	F 22 Apr	Matter at extremely short length scale
39.	M 25 Apr	Beyond the Standard Model
40.	W 27 Apr	Early universe and stellar evolution
41.	F 29 Apr	On gravitation and cosmology
42.	M 2 May	Review
	M 9 May	9:00–12:00 Final exam covering sessions 1–42