

Class	Date	Topics:
		I. Special relativity
1.	M 13 Jan	Experimental basis of SR, Einstein's postulates
2.	W 15 Jan	Simultaneity and Lorentz transformations
3.	F 17 Jan	Time dilation and length contraction
4.	W 22 Jan	Minkowski's spacetime diagrams
5.	F 24 Jan	Spacetime interval and metric
6.	M 27 Jan	Paradoxes of special relativity <i>(last day to add a course)</i>
	Tu 28 Jan	<i>(last day to drop a course without penalty)</i>
7.	W 29 Jan	Relativistic momentum and energy
8.	F 31 Jan	Mass/energy conversion; antiparticles
9.	M 3 Feb	Remarks on general relativity
		II. Introduction to quantum physics
10.	W 5 Feb	Quantization of charge and energy
11.	F 7 Feb	Black body radiation
12.	M 10 Feb	The photoelectric and Compton effects
13.	W 12 Feb	Rutherford and the atomic nucleus
14.	F 14 Feb	Bohr's model of the atom
15.	M 17 Feb	De Broglie's hypothesis and wave/particle duality
16.	W 19 Feb	Wave packets
17.	F 21 Feb	First midterm exam covering sessions 1–14
18.	M 24 Feb	Uncertainty principle; probability amplitudes
19.	W 26 Feb	Schrödinger's equation in 1 dimension
20.	F 28 Feb	Particle in an infinite square potential well
21.	M 3 Mar	Particle in a finite square potential well
22.	W 5 Mar	Expectation values and operators
23.	F 7 Mar	Simple harmonic oscillator; symmetries
	8–16 Mar	<i>Spring recess</i>
24.	M 17 Mar	Reflection and transmission in collisions <i>(last day to withdraw from a course)</i>
25.	W 19 Mar	Barrier penetration and tunneling
		III. Fundamentals of atomic and subatomic physics
26.	F 21 Mar	Schrödinger's equation in 3 dimensions
27.	M 24 Mar	Angular momentum; hydrogen atom
28.	W 26 Mar	Hydrogen quantum numbers and energy levels
29.	F 28 Mar	Electron spin; the Stern–Gerlach experiment
30.	M 31 Mar	Spectroscopic notation; periodic table of elements
31.	W 2 Apr	Identical particles and the Pauli principle
32.	F 4 Apr	Second midterm exam covering sessions 15–28
33.	M 7 Apr	Fundamental interactions and classification of particles
34.	W 9 Apr	Nature of the N - N force; the deuteron
35.	F 11 Apr	Nuclear binding, structure and stability
36.	M 14 Apr	Conservation laws and symmetries
37.	W 16 Apr	The Standard Model: a new table of elements
38.	F 17 Apr	Matter at extremely short length scale
39.	M 21 Apr	Beyond the Standard Model
40.	W 23 Apr	Early universe and stellar evolution
41.	F 25 Apr	On gravitation and cosmology
42.	M 28 Apr	Review
	M 5 May	14:00–17:00 Final exam covering sessions 1–42