

Here's a list of the topics on the first exam. It says where you can find them in the book and (in blue) has links to [Kahn Academy](#).

topic	section in book	Kahn academy
electric charge	16.1, 16.2, 16.3	Unit on Electric charge, field, and potential
Coulomb's law	16.5, 16.6	Skip the videos on the field of an infinite plate and
electric field	16.7, 16.8	the video on potential energy using calculus.
voltage	17.1, 17.2, 17.5	
capacitors	17.7, 17.8, 17.9	Section on Circuits with capacitors
		Stop when you get to capacitors in series.
current	18.2	Video on Circuits and Ohm's law
Ohm's law	18.3, 18.4 (skip stuff on temperature)	Article on Basic electrical quantities: current, voltage, power
power	18.5	

Here's a list of the topics on the second exam. It says where you can find them in the book and (in blue) has links to [Kahn Academy](#).

topic	section in book	Kahn academy
series and parallel circuits	19.2	Video on Resistors in series
Kirchhoff's laws	19.3	Video on Resistors in parallel Video on Analyzing a more complex resistor circuit
RC circuits	19.6	Not in Kahn Academy
magnetism	20.1, 20.2	Unit on Magnetic forces, magnetic fields, and Faraday's law
force on a wire	20.3	Stop when you get to "induced current in a wire" – that's the next topic. The cross product videos are optional. They cover a mathematical way of writing magnetic forces using vectors.
force on a moving charge	20.4	
field of a wire	20.5	
force between wires	20.6	
solenoids	20.7	
magnetic induction	21.1, 21.2, 21.3	Section on Magnetic flux and Faraday's law Stop when you get to "Faraday's Law for generating electricity"

Here's a list of topics on the third exam. It says where you can find them in the book and (in blue) has links to [Kahn Academy](#).

topic	section in book	Kahn academy
electromagnetic waves	22.2 (just Fig. 22-7 and equation 22-3) 22.3	Video on Electromagnetic waves and the electromagnetic spectrum
mirrors	23.1, 23.2	Section on Reflection and refraction
curved mirrors	23.3	Stop when you get to “total internal reflection”
refraction	23.4, 23.5	Section on Mirrors
lenses	23.7, 23.8	Section on Lenses
		Stop when you get to “multiple lens systems”
diffraction	24.3, 24.6	Section on Interference of light waves
		Stop when you get to “single slit interference”

The final exam is comprehensive, so you should review the study guides for exams 1, 2, 3. The final will also include topics we've covered after the last exam. Here's a list. It says where you can find them in the book and (in blue) has links to [Kahn Academy](#).

topic	section in book	Kahn Academy
Bohr atom	27.3 (just $E = hf$), 27.12	Section on Atoms and electrons Start with the video on Bohr model radii , end with the article on Bohr's model of hydrogen The two “derivations using physics” are nice but not necessary.
radioactivity	30.8, 30.9, 30.11	Video on Half-life and carbon dating
temperature	13.2	Section on Temperature, kinetic theory, and the ideal gas law Stop when you get to “Maxwell Boltzmann distribution”
ideal gas	13.6, 13.7, 13.8	
kinetic theory	13.9 (just $KE = \frac{3}{2}kT$)	
heat	14.1, 14.2, 14.3, 14.4, 14.5	Video on Specific heat and latent heat of fusion and vaporization
entropy	15.7	We'll cover this briefly, if at all. There's lots of material on Kahn Academy. For an overview try the video Entropy intuition