study guide for exam I

Physics 166
Prof. Kabat
Spring 2018

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
introduction	1.1, 1.3	For math review there's
math review	appendix A	A section on scientific notation
units	1.4, 1.5, 1.6	A whole unit on solving linear equations
		Systems of equations (up to "manipulating expressions with unknown variables")
		A section on parabolas and the quadratic formula
		Trigonometry (up to "modeling with right triangles")
velocity	2.1, 2.2, 2.3	Unit on One-dimensional motion
acceleration	2.4, 2.5, 2.6	"Projectile motion" is what we're calling free fall.
free fall	2.7	
vectors and vector addition	3.1, 3.2, 3.4	Unit on Two-dimensional motion
2-D projectile motion	3.5, 3.6	Stop when you get to "unit vectors and engineering notation."

study guide for exam II

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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
Newton's laws gravity, normal force, tension force friction, inclines	4.1, 4.2, 4.3, 4.4, 4.5 4.6, 4.7 4.8	Unit on Forces and Newton's laws of motion
circular motion	5.1, 5.2, 5.3 (unbanked only)	Section on Circular motion and centripetal acceleration You can skip the "calculus proof" video. Section on Centripetal forces
gravity satellite orbits	5.5, 5.6 5.7	Section on Newton's law of gravitation

study guide for exam III

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Here's a list of the 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
work	6.1	Section on Work and energy
KE	6.3	Stop when you get to "Work as area under curve"
PE	6.4	
conservation of energy	6.6, 6.7, 6.8	
power	6.10	Video on Power
momentum	7.1	Section on Momentum and Impulse
momentum conservation	7.2	Stop when you get to "2-dimensional momentum problem"
collisions	7.4, 7.5, 7.6	Section on Elastic and inelastic collisions
rotational kinematics	8.1, 8.2	Unit on Moments, torque, and angular momentum
torque	8.4	Stop when you get to "Rotational kinetic energy"
torque and angular acceleration	8.5, 8.6	What Sal calls "moment of force" is what we're calling torque.

study guide for final exam

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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
static equilibrium	9.1, 9.2	Unit on Moments, torque, and angular momentum The video "Moments (part 2)" is about static equilibrium.
density	10.1, 10.2	Unit on Fluids
pressure	10.3, 10.4	Stop when you get to viscosity.
buoyancy	10.7	
moving fluids	10.8, 10.9, 10.10 (Torricelli only)	
vibrations	11.1, 11.2, 11.3, 11.4	Section on Simple harmonic motion
waves	11.7, 11.8, 11.9	Section on Introduction to mechanical waves
sound	12.1, 12.2, 12.7	Section on Sound You can skip the stuff on sound speed, Mach numbers, ultrasound imaging.