

PHYSICS

SELF TUTORING - ONLINE HELP

FREE

Brightstorm Physics: <http://www.brightstorm.com/science/physics/>

Free online Physics video lessons to help students understand critical Physics concepts so that they can improve test and quiz scores and more easily complete homework assignments.

Khan Academy Physics: <http://www.khanacademy.org/>

Projectile motion, mechanics and electricity and magnetism

Physics for the 21st Century: <http://www.learner.org/resources/series213.html>

Explore the frontiers of physics research with the scientists on the front lines in this 11-unit course in modern physics for high school physics teachers, undergraduate students, and science enthusiasts.

The Mechanical Universe and Beyond: <http://www.learner.org/resources/series42.html>

A video instructional series on physics for college and high school classrooms and adult learners; 52 half-hour video programs and coordinated books

The CassioPeia Project – Physics; Quantum Mechanics; Standard Model; Relativity:

http://www.cassiopeiaproject.com/vid_courses3.php?Tape_Name=physics

http://www.cassiopeiaproject.com/vid_courses3.php?Tape_Name=QM

http://www.cassiopeiaproject.com/vid_courses3.php?Tape_Name=Standard

http://www.cassiopeiaproject.com/vid_courses3.php?Tape_Name=Relativity

UC Berkeley Descriptive Introduction to Physics:

<http://itunes.apple.com/itunes-u/letters-science-c70v-001-physics/id354822753>

Yale University Fundamentals of Physics I:

<http://oyc.yale.edu/physics/phys-200#sessions>

Yale University Fundamentals of Physics II:

<http://oyc.yale.edu/physics/phys-201#sessions>

MIT Physics I: Classical Mechanics:

<http://ocw.mit.edu/courses/physics/8-01-physics-i-classical-mechanics-fall-1999/>

MIT Physics II: Electricity and Magnetism:

<http://ocw.mit.edu/courses/physics/8-02-electricity-and-magnetism-spring-2002/>

MIT Physics III: Vibrations and Waves:

<http://ocw.mit.edu/courses/physics/8-03-physics-iii-vibrations-and-waves-fall-2004/>

More at:

http://www.openculture.com/physics_free_courses

AT A COST

Math Tutor DVD: www.mathtutorDVD.com

Physics Help: The Ultimate Physics Tutor -- 2 DVD Set -- 11 Hour Course (Newtonian Motion):
<http://www.mathtutordvd.com/products/item12.cfm>

Covers: *Velocity And Acceleration In One Dimension; Equations Of Motion In One Dimension; Scalars And Vectors; Projectile Motion; Newton's Laws Of Motion; Newton's Laws Of Motion With Friction; Work; Kinetic Energy And The Work-Energy Theorem; Potential Energy And Energy Conservation; Power; Momentum And Impulse; Conservation Of Momentum; Inelastic And Elastic Collisions; Angular Speed And Angular Acceleration; Rotational Equations Of Motion; Tangential Speed And Centripetal Force; Gravitation And Kepler's Laws Of Motion; Torque; Rotational Equilibrium; Angular Acceleration & Moment Of Inertia; Angular Momentum; Density And Pressure; The Buoyant Force; The Bernoulli Equation*

Physics Help: The Ultimate Physics 2 Tutor, Volume 1 -- 10 Hour Course (Thermodynamics):
<http://www.mathtutordvd.com/products/item56.cfm>

Covers: *Thermometers and Temperature Scales; Expansion and Contraction of Solids and Liquids; Kinetic Theory of Gases; Heat; Latent Heat and Phase Change; Heat Transfer by Convection, Radiation, and Conduction; Work, Heat, and PV Diagrams; The First Law of Thermodynamics Section 9: Heat Engines and the Second Law of Thermodynamics; Refrigerators; Entropy.*

Physics Help: The Ultimate Physics 2 Tutor, Volume 2 -- 12 Hour Course (Oscillations and Waves): <http://www.mathtutordvd.com/products/item57.cfm>

Covers: *Oscillations and Simple Harmonic Motion; Conservation of Energy in Simple Harmonic Motion; Pendulums and Resonance; Transverse Waves; Superposition and Interference of Waves; Standing Waves and Resonance; Speed of Sound Waves; Traveling Waves; Sound Intensity and Sound Level; Doppler Shift.*

Physics Help: The Ultimate Physics 3 Tutor, Volume 1 -- 13 Hour Course (Electricity and Magnetism): <http://www.mathtutordvd.com/products/item59.cfm>

Covers: *Electric Charge and Coulomb's Law; Electric Field due to a Point Charge; Electric Field due to a dipole; Electric Field due to a Charged Ring; Gauss' Law; Gauss' Law, Cylindrical Symmetry; Gauss' Law, Planar Symmetry; Gauss' Law, Spherical Symmetry; Electric Potential; Electric Potential of Point Charges; Electric Potential of a Dipole and Continuous Charge Distributions*

The Ultimate Physics 3 Tutor, Volume 2 -- 10 Hour Course (Electricity and Magnetism):
<http://www.mathtutordvd.com/products/item80.cfm>

Covers: *The Capacitor; Capacitor Problems; Capacitors in Circuits; Energy Storage in a Capacitor; Capacitors with a Dielectric; Electric Current and Current Density; The Magnetic Field; Magnetic Force on a Charged Particle; Equations of an Orbiting Charge in a Magnetic Field; Magnetic Confinement and the Earth's Aurora; Orbiting Charges in a Magnetic Field; Magnetic Force on a Current Carrying Wire; Magnetic Torque on a Current Loop (Electric Motors).*

The Great Courses: www.thegreatcourses.com

*Designed to meet the powerful demand for lifelong learning, The Great Courses is an intellectual engaging series of video and audio courses led by the world's best professors and experts in diverse fields such as philosophy, history, literature, science, and the arts. The Great Courses currently maintains a catalog of more than 350 courses delivered by great teachers from the Ivy League, Stanford, Georgetown, and other leading colleges and universities. **Algebra Help thru Calculus, Physics, Chemistry, and More!** *The company has sales from time to time.**

Physics and Our Universe: How It All Works

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1280

Taught by Professor Richard Wolfson, Ph.D., Dartmouth College, Middlebury College

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Impossible: Physics beyond the Edge:

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1299

Taught by Professor Benjamin Schumacher, Ph.D., The University of Texas at Austin, Kenyon College

***Impossible: Physics beyond the Edge** uses this ingenious approach in 24 delightful half-hour lectures that will entertain and nourish your mind, while teaching you more physics than you ever imagined. Your guide into the realms of the impossible is veteran Great Courses Professor Benjamin Schumacher of Kenyon College, a pioneering theorist in quantum information, which is a field dealing with things once deemed impossible.*

Dark Matter, Dark Energy: The Dark Side of the Universe:

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1272

Taught by Professor Sean Carroll, Ph.D., Harvard University, California Institute of Technology

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Particle Physics for Non-Physicists: A Tour of the Microcosmos:

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1247

Taught by Professor Steven Pollock, Ph.D., Stanford University, University of Colorado at Boulder

*In **Particle Physics for Non-Physicists: A Tour of the Microcosmos**, Professor Steven Pollock translates the language of the remarkable science that, in only 100 years, has unlocked the secrets of the basic forces of nature. You will become familiar with the fundamental particles that make up all matter, from the tiniest microbe to the sun and stars. You will also learn the "rules of the game"—the forces the particles feel and the ways they interact—that underlie the workings of the universe.*

Understanding the Universe: An Introduction to Astronomy, 2nd Edition:

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1810

Taught by Professor Alex Filippenko, Ph.D., California Institute of Technology, University of California, Berkeley

***Understanding the Universe: An Introduction to Astronomy, 2nd Edition** is a nontechnical description of where that picture stands today. In 96 richly illustrated half-hour lectures, you survey the main concepts, methods, and discoveries in astronomy—in depth—from the constellations drawn by the ancients, to the latest reports from*

planetary probes in our Solar System, to the most recent images offered by telescopes probing the farthest frontiers of space and time.

Cosmology: The History and Nature of Our Universe:

http://www.thegreatcourses.com/tgc/courses/course_detail.aspx?cid=1830

Taught By Professor Mark Whittle, Ph.D., University of Cambridge, University of Virginia

Cosmology: The History and Nature of Our Universe introduces you to the biggest story of all in 36 half-hour lectures that cover the origin, evolution, composition, and probable fate of our universe. This detailed and accessible course, presented by award-winning Professor Mark Whittle of the University of Virginia, incorporates more than 1,700 stunning illustrations.