

Physics Links for Student and Instructor Success

Conceptual Physics Notes

[The Physics Classroom](#)

A set of instructional pages written in an easy-to-understand language and complemented by graphics and Check Your Understanding sections. An ideal starting location for those grasping for understanding or searching for answers. This is a **great site** to help you gain a conceptual understanding of physics.

[Physics 2000](#)

Physics 2000 is an interactive journey through modern physics! Have fun learning visually and conceptually about 20th Century science and high-tech devices.

[School for Champions - Physics Lessons](#)

Succeed in Understanding Physics: These free online lessons will give you a start at improving your scientific knowledge of physics.

Algebra-Based Physics Lessons and Lecture Notes

[PY105 Notes from Boston University](#)

Notes from PY105, which is an algebra-based introductory physics course at Boston University taken primarily by life science majors. This course covers the first half of a typical introductory physics textbook.

[PY106 Notes from Boston University](#)

Notes from PY106, which is an algebra-based introductory physics course at Boston University taken primarily by life science majors. This course covers the second half of a typical introductory physics textbook.

[PHY2048 - General Physics I](#)

Class materials from Dr. R.G. Jordan from Florida Atlantic University. His course websites are outstanding and include lecture notes, recorded lectures, practice tests, and physics brain teasers.

[PHY2049 - General Physics II](#)

Class materials from Dr. R.G. Jordan from Florida Atlantic University. His course websites are outstanding and include lecture notes, recorded lectures, practice tests, and physics brain teasers.

[IUN/FYDE Introductory Physics Notes](#)

Notes from a non-calculus introductory physics course given through the IUN/FYDE distance education program of the University of Winnipeg.

[Learn Physics Today](#)

Learn Physics Today is an online physics tutorial covering the first half of a typical physics textbook (up to circuits).

Calculus-Based Physics Lessons and Lecture Notes

[HyperPhysics](#)

HyperPhysics is an exploration environment for concepts in physics. It employs concept maps and other linking strategies to facilitate smooth navigation. This is an awesome reference for all levels of physics - check it out!

[PHY2043 - Physics for Engineers I](#)

Class materials from Dr. R.G. Jordan from Florida Atlantic University. His course websites are outstanding and include lecture notes, recorded lectures, practice tests, and physics brain teasers.

[PHY2044 - Physics for Engineers II](#)

Class materials from Dr. R.G. Jordan from Florida Atlantic University. His course websites are outstanding and include lecture notes, recorded lectures, practice tests, and physics brain teasers.

[General Physic I Course Notes](#)

Course notes for General Physics I at ETSU. These notes are for the first course in a two-semester sequence that covers the following sections of classical physics: classical mechanics, solids & fluids, and thermal physics.

[General Physic II Course Notes](#)

Course notes for General Physics II at ETSU. These notes are for the second course in a two-semester sequence that covers the following sections of classical physics: electromagnetism, wave mechanics, electromagnetic radiation and optics.

[Physics Classes from MIT Open Courseware](#)

Links to all of the Physics resources available on MIT Open Courseware, which provides free lecture notes, exams, and videos from MIT courses. This is a GREAT resource for students.

Free Physics Textbooks Available for Download

[Light and Matter](#)

The Light and Matter series of introductory physics textbooks is designed for an algebra-based one-year survey course. The textbooks available for download are Newtonian Physics, Conservation Laws, Vibrations and Waves, Electricity and Magnetism, Optics, and The Modern Revolution in Physics.

[Motion Mountain](#)

This free textbook, with little mathematics, explores mechanics, thermodynamics, special and general relativity, electrodynamics, quantum theory and modern attempts at unification.

[Calculus-Based Physics](#)

Calculus-Based Physics is an introductory physics textbook designed for use in the two-semester introductory calculus-based physics course.

[Simple Nature](#)

Simple Nature which is another calculus-based engineering physics textbook.

[Conceptual Physics](#)

A conceptually-based physics textbook by the author of Light and Matter.

[A Textbook for High School Students Studying Physics](#)

FHSST (Free High School Science Textbooks) Physics is a free introductory physics textbook. It is a featured book on Wikibooks because it contains substantial content and is well-formatted. You can download a pdf version of the entire textbook.

[Calculus](#)

This short introductory Calculus text focuses mainly on integration and differentiation of functions of a single variable, although iterated integrals are discussed.

Collections of Physics Applets

[Learn Physics Using Java](#)

An awesome collection of Physics Java Applets written by C.K. Ng. Many of these applets are one of a kind. In my opinion these are some of the best available on the web.

[Physics Applets by Walter Fendt](#)

An outstanding collection of Physics Java Applets written by Dr. Walter Fendt. There are some really great applets to use as demos in class.

[Physlets from Davidson College](#)

The Physlets resource page from Davidson College. This site contains all of the Physlets published in Wolfgang Christian's book Physlets: Teaching Physics with Interactive Curricular Material.

[Electricity and Magnetism Applets](#)

Interactive electricity and magnetism applets from Molecular Expressions.

[Light and Color Applets](#)

Interactive light and color applets from Molecular Expressions.

[Physics 2000 Applets](#)

Very cool applets on microwaves, TV screens, lasers, waves, and much more.

[Physics Illuminations](#)

Applets and interactive explanatory material for kinematics, dynamics, energy, and vectors.

[BQ Learning](#)

BQ Learning contains a searchable database of Physics animations and applets listed by topic.

[Virtual Laboratory:](#)

Lots of physics applets covering a wide variety of topics written by Fu-Kwun Hwang

[Applets by Paul Falstad](#)

This site has some good math, physics, and engineering applets written by Paul Falstad.

[Physlets from University of Oregon](#)

A collection of physics applets from the University of Oregon.

[Physics Applets on JARS](#)

A compilation of physics applets from JARS, the JAVa Review Service.

[Physlets from LTU](#)

A collection of Physlets compiled and modified by Dr. Scott from LTU.

[Compilation of Physlets](#)

A compilation of Physlets from Physics Lab online.

[Interactive Physics on the Web:](#)

Links to interactive physics sites compiled by Michigan Tech.

[The Interactive Library:](#)

A listing of hundreds of cool physics java applets separated by topic

Great Physics Sites

[UC Berkeley Lectures on iTunes](#)

Free access to UC Berkeley Lectures on iTunes. You can download and listen to complete physics lectures from 6 different Physics courses.

[The Mechanical Universe and Beyond](#)

A video instructional series on physics for college and high school classrooms and adult learners; 52 half-hour video programs and coordinated books. The entire series is available to watch streaming through your computer.

[Tutor 4 Physics](#)

This site provides help in solving physics problems and contains physics tutorials covering a variety of topics.

[LearnersTV - Physics videos](#)

Free streaming video lectures from 18 different physics courses from LearnersTV.

[The Virtual Prof](#)

This web site is a great source of help for physics teachers and physics students. Includes helpful hints on how to be a good student. It also include an extensive set of conceptual questions with answers.

[Brain Busters I](#)

Physics brain teasers covering the first half of a year long physics course up to thermodynamics.

[Brain Busters II](#)

Physics brain teasers covering the first half of a year long physics course up to thermodynamics.

[The Physical Review Focus](#)

Physical Review Focus explains one or two papers per week from Physical Review Letters in a brief, easy-to read style and usually include color pictures and occasionally videos.

[The Particle Adventure](#)

An award-winning interactive tour of quarks, neutrinos, antimatter, extra dimensions, dark matter, accelerators and particle detectors from the Particle Data Group of Lawrence Berkeley National Laboratory.

[How to Become a Good Theoretical Physicist](#)

This is a great site for all those who have decided to study theoretical physics, in their own time. It contains some very useful links to textbooks and lecture notes available on the web.

[Nobel Laureates in Physics](#)

A list of all the Noel prize winners in Physics from 1901 – Present.

[Physics Picture Gallery](#)

A collection of pictures of famous physicists.

[Physics Games](#)

A collection of web-based games based upon the laws of physics.

[Flash Physics Games](#)

Even more web-based physics games – all using Flash.

[College Scholarships, Colleges, and Online Degrees](#)

The College Scholarships, Colleges, and Online Degrees page is designed to offer college-bound, graduate school-bound, and career school bound students of all ages easy access to information about a wide variety of subjects.

[How Everything Works](#)

This great site explains the physics of everyday life.

[How Stuff Works](#)

Another cool site that explains how stuff works.

Physics News and Information

[Physics.org](#)

This website is your one stop guide to best physics places on the web from the Institute of Physics. Our aim of this site is to inspire people of all ages about physics.

[Physics World](#)

News, views and information for the global physics community. This European website is particularly good for news.

[PhysLink](#)

The PhysLink.com is a comprehensive physics and astronomy online education, research and reference web site. In addition to providing high-quality content, PhysLink.com is a meeting place for professionals, students and other curious minds.

[Physics Central](#)

This website communicates the excitement and importance of physics to everyone. Visit the site every week to find out how physics is part of your world.

[Physics To Go](#)

Physics To Go is an online biweekly mini-magazine, and it's also a collection of more than 800 websites that you can search and browse.

Physics Organizations

[APS](#)

Homepage of the American Physical Society

[AIP](#)

Homepage of the American Institute of Physics

[AAPT](#)

Homepage of the American Association of Physics

[SPS](#)

Homepage of the Society of Physics Students

[PhysTEC](#)

Homepage of the Physics Teacher Education Coalition

[IOP](#)

Homepage of the Institute of Physics

[PhysNet](#)

This website is the worldwide physics departments and documents network.

Math and Science Organizations

[NSF](#)

Homepage of the National Science Foundation

[AMS](#)

Homepage of the American Mathematical Society

[NSTA](#)

Homepage of the National Science Teachers Association

[DOE](#)

Homepage of the Department of Energy

[NASA](#)

Homepage of NASA

Science News and Information

[New York Times Science Page](#)

The science page of the New York Times.

[Science News](#)

Science News – the magazine of the Society for Science and the public.

[Scientific American](#)

The online version of Scientific American.

[Popular Science](#)

The online version of Popular Science

[Discover Magazine](#)

The online version of Discover Magazine

Invaluable Programs, Products, and Websites

[Pulse Smart Pen](#)

The Pulse Smart Pen in my opinion is the greatest piece of educational technology since the computer. Every student should have one – check it out **now!**

[VirtuaWin](#)

VirtuaWin is a virtual desktop manager for the Windows operating system. A virtual desktop manager lets you organize applications over several virtual desktops (also called 'workspaces'). Once you get accustomed to using them, they become an essential part of a productive workflow.

[Cooliris](#)

Cooliris is simply the fastest and most stunning way to browse photos and videos from the Web or your desktop. Effortlessly scroll an infinite 3D Wall that speeds up your searches on Google Images, YouTube, ...

[Dropbox](#)

Free online storage of any files you want to back up or have access to from any computer. You get 2 Gb for free and can earn up to another 3.0 Gb by referring people.

[Any Video Converter](#)

Any Video Converter Freeware is the most renowned free video converter for converting video files between various formats, with fast converting speed and excellent video quality. This powerful free video converter application makes video conversion quick and easy.

[KeepVid](#)

This website allows you to download YouTube videos to your desktop. You just enter the URL of the video page and it then gives you a link to download the embedded video.

[CCleaner](#)

CCleaner is a freeware system optimization, privacy and cleaning tool. It removes unused files from your system - allowing Windows to run faster and freeing up valuable hard disk space.

[VLC Media Player](#)

The VLC media player is the best media player. It supports a large number of multimedia formats without the need for additional codecs.

[Google Toolbar](#)

The Google Toolbar allows you to do Google searches right from your toolbar.

Clicker Questions and Resources

[Assessing-to-Learn Physics](#)

This website provides public access to a large library of physics clicker questions. There are many excellent questions indexed by subject

[Peer Instruction Problems](#)

This website contains a collection of Peer Instruction problems sorted by subject.

[ConcepTests from CU Boulder](#)

The website contains a collection of ConcepTests and course materials from CU Boulder.

[Interactive Learning Toolkit](#)

The Interactive Learning Toolkit helps you implement innovative teaching ideas, such as Peer Instruction and Just-in-Time-Teaching, and to monitor your students' learning. You will need to create a free account to access the database of ConcepTests.

[Teaching with Classroom Response Systems](#)

This is a great website from Derek Bruff, the author of **Teaching With Classroom Response Systems**. Some of the resources contained in the site include a blog, bibliography, clickers teaching guide, and three webinars.

[The University of Ohio Clicker Page](#)

This is an excellent site from the University of Ohio. It contains numerous resources as well as a list of articles relating to clicker use.

[Student Response Systems](#)

This web site is an overview of students response systems. It is based upon various faculties use of clickers at four University of Wisconsin campuses. It has useful faculty resources including a best practices guide.

[List of Different Classroom Response Systems](#)

This website contains a list (including comments) of some of the classroom response systems available today.

Resources for Physics Teachers

[ComPADRE](#)

The ComPADRE Digital Library is a network of free online resource collections supporting faculty, students, and teachers in Physics and Astronomy Education. Instructors should be sure to check out their [Physics Source](#) page as well as their [Physics Front](#) page.

[Flash Animations for Physics](#)

This website contains a collection of physics flash animations that are listed by topic. There are some AWESOME animations to use during lecture.

[Workshop Tutorials for Physics](#)

This site contains a collection of worksheets with solutions and activities for all areas of physics.

[Science and Mathematics Initiative for Learning Enhancement](#)

A collection of hundreds of single concept lessons in Biology, Chemistry, Mathematics, and Physics. There are almost 200 single concept lessons for Physics.

[Activity Based Physics Thinking Problems](#)

The website contains links to a collection of problems which attempt to link a student's qualitative understanding of concepts with specific problems.

[Teaching Physics with the Physics Suite](#)

This site contains a collection of sample problems from Teaching Physics with the Physics Suite.

[Problem Based Learning](#)

The purpose of this site is to provide college instructors with high-quality, field-tested Problem-Based Learning (PBL) activities. Each activity presented here has already been used within Quebec College classrooms.

[Context Rich Problems](#)

This site is designed to be an introduction to context rich problems. Check out the on-line archive of context rich problems where you can find context rich problems for many topics in introductory physics.

[Course Materials from University of Illinois PER](#)

This website contains materials used in the introductory physics classes at the University of Illinois. The material includes exams, lecture notes, lecture handouts, and discussion problems – there is some really good stuff here!

[PIRA](#)

Homepage of the Physics Instructional Resource Association

[MERLOT Physics](#)

An online collection of Physics teaching and learning resources that includes: links to member-selected learning materials, peer reviews of high quality materials, and teaching experiences of MERLOT members

[Just in Time Teaching](#)

The website is the homepage for Just In Time Teaching (JiTT).

[JiTT Physics Resource Page](#)

This resource page from JiTT contains a very useful collection of physics questions.

[NCSU Physics DemoRoom](#)

A collection of 81 videos of physics demonstrations from NCSU.

[Physics Demo Videos](#)

Another collection of videos of physics demonstrations. These videos are from Wake Forrest University.

[Physics Demonstration Resources Online](#)

A collection of physics demonstration resources available online compiled by the University of Texas.

[Physics Lessons](#)

PhysicsLessons.com meets many of the informational needs of today's busy science teacher. It quickly connects you to lessons, news, and much more.

[The University of Maryland PERG](#)

This is the homepage of The University of Maryland Physics Education Research Group. UMPERG is a combined effort of the Physics Department and School of Education to study the learning and teaching of physics at all levels from elementary school to the graduate level.

[The Physics Front](#)

The Physics Front provides high quality resources for the teaching of physics and physical sciences courses. This site is mostly aimed at high school teachers but it has some useful information for all levels of physics.

[Physics Education Research Papers](#)

Physical Review Special Topics - Physics Education Research is a peer reviewed electronic-only journal which covers the full range of experimental and theoretical research on the teaching and/or learning of physics.

Other Great Websites

[The Darwin Awards](#)

This fun website honors those who improve the species ... by accidentally removing themselves from it.

[Free Book Center](#)

Freebookcentre.net contains links to thousands of free online technical books.

[Astronomy Picture of the Day](#)

See a new astronomical image or photograph every day

[The Daily Motivator](#)

This is a great way to start out your day.

[Pandora](#)

An awesome online radio station that only plays the music that you like.