Plasma Physics Educational Resources on the WEB

Glossary of Plasma Physics and Fusion Energy Research
This website contains a glossary of plasma physics and fusion energy research provided by Lawrence Livermore National Laboratory. It provides plain-language definitions of over 3600 frequently used terms in this field. The glossary can be browsed and searched, and contributions of new entries are welcome.
Resource Type: Reference
http://fusedweb.pppl.gov/Glossary/

Plasma Physics : History
A brief history of plasma physics is provided. This page forms part of the larger 'Exploration of the Earth's Magnetosphere' educational resource, written by David P Stern and Mauricio Peredo and aimed at pre-University students. The site is also available in Spanish and French (incomplete).
Resource Type: Other educational resources
http://www.phy6.org/Education/whplasma.html

Introduction to Plasma Physics
An introductory graduate course in plasma physics, taught by Professor Richard Fitzpatrick at the University of Texas, Austin (USA). The course sections are: charged particle motion; plasma fluid theory; waves in cold plasmas; magnetohydrodynamic theory; and kinetic theory of waves. The lecture notes are available in HTML, PDF and Postscript formats.
Resource Type: Lecture notes and courses
http://farside.ph.utexas.edu/~rfitzp/teaching/plasma/plasma.html

Fusion : Physics of a Fundamental Energy Resource
A website outlining the principles of fusion energy and the physics of plasmas. The material was created by created by the Fusion and Plasmas Group of the Contemporary Physics Education Project (CPEP), USA. The site contains: energy sources and conversions, key fusion processes, how fusion reactions work, creating the conditions for fusion, plasma - the fourth state of matter, and achieving fusion conditions. The discussions are supported by diagrams.
Resource Type: Other educational resources,Research projects/centres
http://fusedweb.pppl.gov/CPEP/Chart.html

Preprint Database System
This preprint collection is maintained by the School of Physics and Astronomy, The University of Manchester. It covers: astrophysics, atmospheric physics, condensed matter, plasma physics and theoretical physics. Preprints can be browsed or searched, and can be downloaded as Postscript files. There is an add a paper facility.
Resource Type: Databases
http://www.umist.ac.uk/departments/physics/research/preprint.htm

Fusion and Plasma Science FAQ
This Web page contains a fusion and plasma science FAQ, written and edited by Robert F Heeter. It answers a large number of questions, such as the characteristics of fusion, how plasma physics is related to fusion, fusion research programmes, educational issues and conferences, Internet resources, etc.
Resource Type: FAQs
http://fusedweb.pppl.gov/FAQ/

Plasma
This brief introduction to plasma physics forms part of the larger 'Exploration of the Earth's Magnetosphere' educational resource, written by David P Stern and Mauricio Peredo and aimed at pre-University students. The site is also available in Spanish and French (incomplete).
Resource Type: Other educational resources
http://www.phy6.org/Education/wplasma.html

Perspectives on Plasma : the Fourth State of Matter
This website representing all aspects of plasma science and technology aims to communicate the fascination of plasma science, the vast range of its applications, and its profound implications for 21st century science and technology as well as for daily life. The site is provided by Plasmas International, and supported by the Coalition for Plasma Science.
Resource Type: Subject gateways
http://www.plasmas.org/

NRL Plasma Formulary : 2004 Revised Edition
The NRL (Naval Research Laboratory) Plasma Formulary has been the mini-Bible of plasma physicists for the past 20 years. It is an eclectic compilation of mathematical and scientific formulas, and contains physical parameters pertinent to a variety of plasma regimes, ranging from laboratory devices to astrophysical objects. The 2004 version is due for publication in early 2005. The text will be available in Postscript, PDF and TeX formats.
Resource Type: Books and theses,Reference
http://wwwppd.nrl.navy.mil/nrlformulary/nrlformulary.html

FusEdWeb : Fusion Energy Educational Web Site
This site, from the Princeton Plasma Physics Laboratory, provides a collection of resources relating to fusion energy at all levels from middle schools, through the general public to undergraduate and graduate students. They include: the 'Internet Plasma Physics Education eXperience'; 'Fusion: Creating a Star on Earth' online slide show; an introductory online interactive course; lists of textbooks and US college programmes; FAQs; a glossary; and links to other fusion sites.
Resource Type: Other educational resources,Subject gateways
http://www.rzg.mpg.de/~dpc/fusedweb.pppl.gov/

Equations in Physics
This site, by J C A Wevers, contains a list of common physics formulae, available in a number of common formats (LaTex, PostScript, PDF). The formulae are arranged by subject, covering most topics likely to be met at degree level, and several beyond. These include mechanics, electricity and magnetism, relativity, oscillations, waves, optics, statistical physics, transport phenomena, quantum physics, plasma physics, solid state physics, group theory, nuclear physics, particle physics and astrophysics..
Resource Type: Reference
http://www.xs4all.nl/~johanw/contents.html

EnergyFiles
EnergyFiles is a virtual library of information and resources pertaining to science and technology, of interest to the US Department of Energy, with an emphasis on the physical sciences, developed by the Department of Energy's Office of Scientific and Technical Information (OSTI). It provides access to databases and other resources covering a range of subjects including chemistry, fission and nuclear technologies, geosciences, materials science, physics, plasma physics and fusion.
Resource Type: Subject gateways
http://www.osti.gov/energyfiles/

Atomic Physics on the Internet
This resource guide to atomic physics on the Internet is maintained by Yuri Ralchenko at the Plasma Laboratory of Weizmann Institute of Science (Plasma Gate). Links are primarily organised by country.
Resource Type: Web directories
http://plasma-gate.weizmann.ac.il/API.html

Physics : WWW Virtual Library
The virtual library for physics is part of the World Wide Web Virtual Library. It provides links to a number of physics subject gateways covering: accelerator use facilities; acoustics, vibrations and signal processing; aeronomy, Solar-terrestrial physics and chemistry; astronomy and astrophysics; beam physics; free electron lasers; horology; nuclear physics; optical science and engineering; biophysics; and plasma science and technology.
Resource Type: Web directories
http://vlib.org/Physics

Databases for Atomic and Particle Physics
This site, produced by the Plasma Laboratory of Weizmann Institute of Science, offers links to a range of websites containing atomic and particle physics data. They cover a variety of data types, including charge transfer cross sections, energy levels, electron impact excitation cross sections (rates, collision strengths), heavy particles interaction cross sections, electron impact ionisation cross sections rates), line shapes, opacities, oscillator strengths (transition probabilities), photoionisation cross sections, line shifts, scattering factors, various spectroscopic and/or collisional data, and wavelengths.
Resource Type: Databases,Web directories
http://plasma-gate.weizmann.ac.il/DBfAPP.html

Physics Central
Physics Central is a resource provided by the American Physical Society with the aim of increasing public understanding of physics and presenting the latest news and research. Features include: physics in action (an introduction to and details of research in frontier areas covering nanoguitars, antimatter, plasma power, laser cooling, neutrinos, astrophysics, black holes, superconductors and cosmic microwaves); people in physics; a picture of the week; news; links to related sites; ask Dr Lou questions and answers; and full text essays and excerpts.
Resource Type: Subject gateways
http://www.physicscentral.com/

Physics : arXiv E-print Archive
The physics section of the arXiv.org e-Print archive contains papers from 1994 to date. Topics covered include: accelerator physics; atmospheric and oceanic physics; atomic physics; atomic and molecular clusters; biological physics; chemical physics; classical physics; computational physics; fluid dynamics; general physics; geophysics; the history of physics; instrumentation and detectors; medical physics; optics; physics education; physics and society; plasma physics; popular physics; and space physics. Users may search by author, title, year or topic, and may submit papers. For each article, links are provided to the abstract, and to full text in PostScript, PDF and other formats. Mirror sites are available.
Resource Type: Databases
http://arxiv.org/archive/physics

Physics Formulary
The 'Physics Formulary' by Johan Wevers is a collection of formulae aimed at top level undergraduate/postgraduate level studies. The 108 page document, in PDF format, covers: mechanics; electricity and magnetism; general and special relativity; oscillations; waves; optics; statistical physics; thermodynamics; transport phenomena; quantum physics; plasma physics; solid state physics; group theory; nuclear physics; quantum field theory and particle physics; and astrophysics.
Resource Type: Reference
http://www.xs4all.nl/~johanw/physics.pdf

Solar Wind
An overview of Solar wind, prepared by Lawrence Livermore National Laboratory (LLNL) and Princeton Plasma Physics Laboratory (PPPL). The resource includes a description of the origin of the phenomenon, its composition and physics, and a short bibliography.
Resource Type: Tutorials
http://fusedweb.pppl.gov/CPEP/Chart_Pages/5.Plasmas/SolarWind.html

D-T Fusion : What Is It?
Part of a tutorial on the technology and economics of inertial fusion energy, this page, from the University of California at Berkeley, provides an illustrated description of the physics of deuterium tritium fusion.
Resource Type: Tutorials
http://www.nuc.berkeley.edu/thyd/icf/DT_fusion.html