PHYS 1P22/92

Textbook
PPLATO
Formula Sheet
iOLab online

Course outline
Help
Calendar entry

Course Outline

What Brock calendar entry says:
Statics and dynamics of fluids; heat and thermodynamics; geometrical and wave optics; electric and magnetic forces; DC circuits; special relativity and quantum physics.

What do I need to bring into the course?
This course is suitable for students with a high school science background. High school calculus or Physics are *not* required, but strong skills in elementary algebra, geometry, and trigonometry are necessary: the course is *quantitative* in nature. A good scientific calculator is required. PHYS 1P21/1P91 is prerequisite to this course.

Textbook
Our textbook is *College Physics*, second edition, by Urone, Hinrichs, Dirks, and Sharma, published by OpenStax (Rice University). The book, a solution manual, and other student resources are available at https://openstax.org/details/college-physics.

PPLATO
PPLATO a set of online resources organized as a full-scale Physics and Mathematics textbook. There are two types of resources: in the left column there are FLAP (Flexible Learning Approach to Physics), while on the right are supplementary self-assessment modules. Think of the left-hand column as of the chapters of a complete textbook, and of the right-hand column as of tutorials on a selection of topics.

Supplementary (paper) texts
Some people like to have secondary sources to read in case they have difficulty understanding the primary textbook in some places. This is *not* required, but if you would like a secondary source, borrow one from a library, or buy an inexpensive used algebra-based textbook from your favourite used bookstore or internet source. Look for titles such as *Physics* or *College Physics*. If your major subject is Physics or a related field, and you would like a more advanced (say, calculus-based) textbook for reference, look for titles that include "for Scientists and Engineers."

Topics to be covered
As time permits, some topics not listed below may be added, while some other topics may not be covered during lectures and tutorial sessions. The outline below is only an approximation.

- » Fluid Statics: Sections 11.1-11.7.
- » Fluid Dynamics: Sections 12.1-12.3.
- » Temperature & Gas Laws: Sections 13.1-13.5.
- » Heat: Sections 14.1-14.4.
- » Thermodynamics: Sections 15.1-15.4, 15.6-15.7.
- » Electric Charge & Electric Field: Sections 18.1-18.5, 18.7.
- » Electric Potential & Electric Energy: Sections 19.1-19.7.
- » Electric Current & Resistance: Sections 20.1-20.5.
- » Circuits & DC Instruments: Section 21.1.
- » Magnetism: Sections 22.1-22.5, 22.9.
- » Electromagnetic Waves: Sections 24.1-24.4.
- » Geometric Optics: Sections 25.1-25.7.
- » Wave Optics: Sections 27.1-27.5, 27.8.
- » Special Relativity: Sections 28.1-28.6.
- » Quantum Physics: Sections 29.1-29.8.

Textbook Chapters 1-10 were covered in PHYS 1P21/91, and are required as mandatory background material for PHYS 1P22/92. Please make sure to review them if needed.

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