

# Applied Physics

The screenshot displays the 'Formulas' window of the Applied Physics software. The window has a title bar with 'Formulas' and a close button. Below the title bar are three buttons: 'Hide Formulas', 'Advisor', and 'Close'. The main content area contains the following text:

$$\frac{\sin \alpha_1}{\sin \alpha_2} = \frac{n_2}{n_1}$$
  
n = index of refraction  
 $\alpha$  = angle of incidence / refraction

Light as a Form of Energy

$$P = \frac{E}{t}$$
  
P = radiant power  
E = radiant energy  
t = time

$$I = \frac{P}{A}$$
  
I = irradiance  
P = radiant power  
A = cross - sectional area

At the bottom of the window, there are three empty input fields, each containing the same Snell's law formula:  $\frac{\sin \alpha_1}{\sin \alpha_2} = \frac{n_2}{n_1}$ .

To the right of the formulas window is a problem-solving scenario. It features a cartoon illustration of a person taking a photo of a person's head in a mirror. Below the illustration is a text box with the following text:

Find the distance between the photographer and the plane mirror for a sharp picture of the image in the mirror.

At the bottom of the screenshot, there is a cartoon illustration of a group of people in a classroom setting. One person is holding a calculator, and another is pointing at a board.

## PHYSICS MADE EASY

**Applied Physics** offers the student a variety of tools to make studying easier:

Different types of help depending on problem type • Suggestions for solving problems • Tips on the relevance of available data • Formulas for solving problems • Glossary of physics terms • Calculator and unit converter

### MODULAR APPROACH

**Applied Physics** is divided into five courses:

- Mechanical Systems
- Fluid Systems
- Electrical Systems
- Thermal Systems
- Optics Acoustics.

Each course is divided into modules (4 on average).  
Each of the modules contains 10 problems involving a physics concept or principle, set in a real-life situation.

### TEACHER MANAGEMENT SYSTEM

The **Applied Physics** system records the performance of each student and of the entire class, indicating the time invested in solving a problem.

The teacher is also informed as to whether or not the entire problem was solved correctly and whether there were partial errors. The type and frequency of errors is recorded.

## Random Problem Generator

**Applied Physics** contains a feature, which enables students to return to a problem and solve it again using new sets of data.

## Course Modules

The **Applied Physics** course modules are comprised as follows:

### Mechanical Systems

- Force
- Work in Mechanical Systems
- Speed
- Friction and Drag
- Mechanical Energy (I)
- Mechanical Energy (II)

### Fluid Systems

- Pressure
- Fluid Systems - Work in Fluid Systems
- Flow (Flow Rate)
- Fluid Resistance

### Electrical Systems

- Voltage
- Work in Electrical Systems
- Electrical Current
- Electrical Resistance
- Energy in Electrical Circuits

### Thermal Systems

- Temperature Scales
- Heat Flow Rate
- Thermal Resistance
- Heat

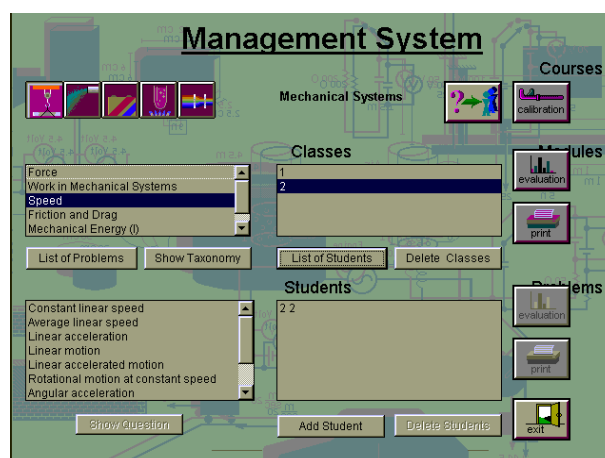
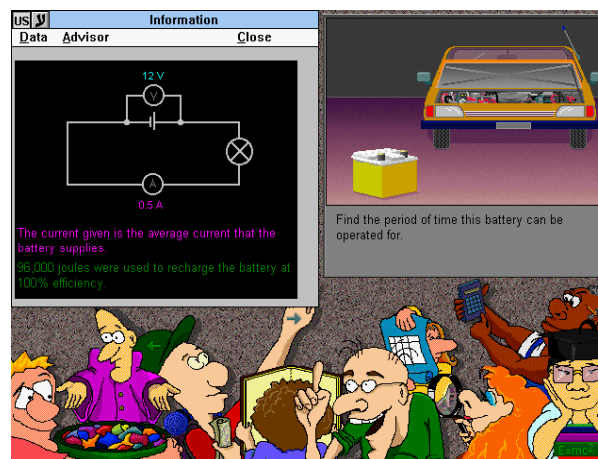
### Optics and Acoustics

- Optical Systems
- Sound Waves

## System Requirements

Pentium CPU, 16 MB (24 MB recommended)  
Windows 9x, 2000, XP, ME,  
CD-ROM drive (2X)  
VGA video card (640x480) 256 colors  
Windows-compatible sound card  
40 Mb of disk space (full installation)  
Speakers (or headphones)  
Standard keyboard, Mouse

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