Guide

Workshop Physics

Indicates a research-demonstrated benefit

Overview

A calculus-based introductory physics curriculum designed to completely replace traditional lectures and laboratories with sequenced activities.

Type of Method	Full curriculum, Classroom structure
Level	**Designed for:** Intro College Calculus-based **Can be adapted for:** High School , Intro College Algebra-based, (Explorations in Physics uses the Workshop Physics style of guided inquiry but it designed for use in non science major classes)
Setting	**Designed for:** Studio **Can be adapted for:** Lecture - Small (<30 students) , Lab
Coverage	Many topics with less depth, The topic coverage has been reduced by about 15% so it is between broad and deep.
Topics	Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Modern / Quantum
Instructor Effort	Medium
Resource Needs	TAs / LAs, Projector, Computers for students, Advanced lab equipment, Cost for students, Tables for group work
Skills	**Designed for:** Conceptual understanding , Lab skills , Using multiple representations , Designing experiments , collaborative skills **Can be adapted for:** Problem-solving skills, Metacognition
Research Validation	**Based on research into:** theories of how students learn , student ideas about specific topics **Demonstrated to improve:** conceptual understanding , lab skills , beliefs and attitudes , retention of students **Studied using:** student interviews , research at multiple institutions
Compatible Methods	PhET, JiTT, ILDs, Physlets, RealTime Physics, SCALE-UP, OSP, LA Program, MBL, CPU, Responsive Teaching

Similar Methods	ILDs, RealTime Physics, SCALE-UP, MBL, EiP
Developer(s)	Priscilla Laws with contributions from Robert Boyle, Patrick Cooney, Kenneth Laws, John Luetzelschwab, David Sokoloff and Ronald Thornton
Website	http://physics.dickinson.edu/~wp_web/wp_homepage.html

Teaching materials

Realtime Physics is available in a series of books published by Wiley:

- Module 1: The Core Volume: Mechanics I: Kinematics and Newtonian Dynamics (Units 1-7)
- Module 2: Mechanics II: Momentum, Energy, Rotational and Harmonic Motion, and Chaos (Units 8 - 15)
- Module 3: Heat Temperature and Nuclear Radiation: Thermodynamics, Kinetic Theory, Heat Engines, Nuclear Decay, and Random Monitoring (Units 16 - 18 and 28)
- Module 4: Electricity and Magnetism (Units 19-27)