



Keilir

Miðstöð vísinda,
fræða og atvinnulífs

Physics 2A (EDL2A06)

Preliminary University Studies Department

Course description

This course in physics will cover the evolution and value of physics and in addition, the status and nature of this field of study. Furthermore, students will be introduced to the usefulness of the subject in relation to the Icelandic context as well as providing a foundation for future study, participation in society and various workplaces.

The course will include the following:

Dynamics and mechanics

- The international system of units
- Vectors
- Transmission
- Speed and velocity for one dimensional movement
- Free fall and vertical projectile movement
- Force
- Net force
- Law of inertia (Newton's 1st law)
- Newton's 2nd law
- The action-reaction law (Newton's 3rd law)
- Mass
- Weight
- Elasticity
- Hooke's law
- Law of friction
- Coefficient of friction
- Movement on inclined planes
- Circular movement
- Energy and mechanics
- Power
- Kinetic energy
- Law of mechanics

- Static energy
- Mechanical energy
- Elastic energy
- Internal energy
- Law of energy
- Simple mechanics

Fluids and their properties:

- Pressure in fluids
- Pascal's Law
- Archimedes' Law
- Gas pressure
- Pressure units and measurements
- Bernoulli's Law

Prerequisites (Required preparation)

Elementary school

Competence level

2

Credits

6

By the end of the course the student has:

- learned the fundamentals of physics and can apply them in problem solving
- developed proficiency in logical presentation, the use of the laws of physics and accurate processing of information
- understood the importance of research in physics and the effects of it on the history and development of physics
- realized the usefulness of the subject in relation to Icelandic context as well as providing a foundation for future study, participation in society and various workplaces

- gained a wider perspective through an introduction to the subject and the ability to critically assess logically based decisions, especially concerning nature preservation and utilization
- received training in various measurements and tests in hands-on classes
- developed the ability to make use of statistics to present ideas, deductions and findings using i.e. tables and charts
- gained proficiency in the use of various methods and mediums to present his/her work, i.e. computer programs and multi-media

Course assessment:

The course is assessed in a variety of ways, there among group work, individual assignments, quizzes and a final exam that will make up part of the final grade.