

Physics 1

Revised May 2020

Course Description:

Physics I is an introductory freshman level course in physics which emphasizes concepts with some mathematical development. Topics to be covered are motion, forces, energy, electricity, and waves.

Big Ideas:

1. Motion can be measured and described using a variety of methods.
2. Forces and energy are essential to understanding motion.
3. Collisions can be described using forces, energy, and momentum.
4. Energy and its conservation are essential in describing and analyzing motion.
5. Electricity is caused by the movement and energy transfer of electrons.
6. Inquiry involves engaging in scientifically oriented questions, giving priority to evidence in responding to questions, formulating, connecting, communicating and justifying explanations.
7. The development of scientific knowledge is based on questioning current knowledge, using empirical facts to develop logical theories, and verifying observations and claims.

Essential Learner Outcomes:

ELO #	Essential Learner Outcome Description	Standards
1	Students will investigate a problem through experimentation and effectively communicate the result.	9-12.PS2.A.3 9-12.PS2.B.2
2	Students will represent, describe and predict an objects motion.	9-12.PS2.A.1 9-12.PS2.B.1
	• Linear motion	9-12.PS2.A.1
3	Students will describe the interaction of forces and how they relate to an objects motion.	9-12.PS2.A.1 9-12.PS2.A.2 9-12.PS2.B.1
	• Newton's Laws	9-12.PS2.A.1
	• Momentum	9-12.PS2.A.2
	• Gravitation	9-12.PS2.B.1
4	Students will explain the transfer of energy in a given system.	9-12.PS3.A.1 9-12.PS3.A.2 9-12.PS3.A.3 9-12.PS3.B.1
	• Energy	9-12.PS3.A.1 9-12.PS3.A.2 9-12.PS3.A.3 9-12.PS3.B.1 9-12.PS4.B.2 9-12.PS4.B.1
	• Waves	9-12.PS4.A.1 9-12.PS4.A.2 9-12.PS4.B.1

		9-12.PS4.B.2
	<ul style="list-style-type: none"> Electricity 	9-12.PS2.B.2 9-12.PS3.C.1 9-12.PS4.B.1 9-12.PS4.B.2
5	Students will translate scientific information into a table or graph and be able to explain it verbally and mathematically.	9-12.PS2.A.1 9-12.PS2.A.2 9-12.PS2.B.1 9-12.PS3.A.3