

COURSE TITLE: Honors Physics  
COURSE LENGTH: 1 year  
COURSE CREDIT: 1 credit

COURSE TYPE: elective  
GRADE LEVEL: 11, 12  
PREREQUISITE: B or higher in Physics

COURSE OBJECTIVES:

1. Students will define rotation equilibrium and rotational motion; relate these two topics to rotational inertia, center of gravity, and stability; and identify how these topics are in use in everyday activities.
2. Students will describe how gravity affects all things throughout the universe both conceptually and mathematically; state gravity's role in weight and weightlessness; and recognize the role gravity plays in black holes.
3. Students will express the difference between linear motion and circular motion; define rotational speed, tangential speed, centripetal force, and centrifugal force; and provide examples of circular motion in everyday life.
4. Students will describe the different types of waves and identify the parts of a wave; describe the origin of all waves and how waves travel; and relate the motion of a wave to the Doppler Effect conceptually and mathematically.
5. Students will define sound and light waves and recognize the major differences between the two.
6. Students will describe why we are able to see the color spectrum; recognize the difference between reflection and refraction; and give everyday examples of color.

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COURSE CONTENT:

1. Circular motion
2. Rotational equilibrium
3. Rotational motion
4. Universal gravity
5. Vibrations and waves
6. Sound
7. Light
8. Color