

\* Important - keep for the duration of the course \*

Steinbach Christian High School

# 12 Physics

## Course Outline

Taught by: Mr. Scott Wiebe

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### Rationale:

Physics is the fundamental science. Understanding the physics of objects and situations around us can be very satisfying and rewarding... not to mention other people will think you're smart. ☺

Physics pursues the “why” question as far as the human reach can take it. Even as human reach extends; with new understandings, knowledge and technical expertise; our reach still exceeds our grasp. Thus the mystery continues.

Physics is a science about relationships between various quantities in a system. Like any other “relationship” the relationships in physics are based on what goes on within and between the various pieces of matter. Although the relationships can sometimes be illustrated visually, mathematics is the main medium of communication. The math will take numerical, graphical, and symbolic forms.

Physics seeks to describe, explain and predict those relationships as accurately and precisely as possible. This has established physics as the foundational science upon which the other sciences, not to mention a huge variety of vocations, are built.

### Keys for Success:

People who excel in physics have the following attributes:

- π Mathematical ability
  - Specifically algebraic and computational skills
- π Problem Solving Ability
  - Understanding word problems and translating them into visual and numerical relationships.
- π Creativity
  - Being able to approach problems in different ways, looking at situations from different perspectives.
- π Tenacity
  - Not giving up despite difficult circumstances.

### Course Outline:

#### Unit 1: : Mechanics

- π Kinematics
- π Dynamics
- π Momentum
- π Projectiles
- π Circular Motion
- π Work and Energy

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**Unit 2: Fields**

- $\pi$  Exploration of Space
- $\pi$  Low Earth Orbit
- $\pi$  Electric and Magnetic Fields

**Unit 3: Electricity**

- $\pi$  Electric Circuits
- $\pi$  Electromagnetic Induction

**Unit 4: Medical Physics**

**Grading and Reporting:**

Grades will be based on tests, assignments, class participation and exams. The final grade will be based on: Catapult Contest(12%), Bridge Construction(8%), Tests(30%), Homework, etc(25%), and final exam(25%).