

# Physics 11 Course Outline 2020/2021

This course is about how things work: answering some of the most basic questions about the world around us. Why is the sky blue? Where did the universe come from? How does the interaction of energy and matter influence everything from the decay of subatomic particles to the recession velocities of distant galaxies?

## Requirements:

- A scientific calculator. Students may also choose to purchase a graphing calculator if they are planning to take Physics 12 or Math 12.
- Work Ethic: Students will be expected to complete a large volume of work. This includes a serious amount of homework and well-constructed formal lab write-ups. Lab write-ups are due within two periods. Homework for the unit should be complete by the day of the Unit Test.
- Initiative and responsibility: Students are expected to make up any missed material or tests on their own time, which means seeing me for help or making up tests during lunch or Wise Block. Students are expected to be productive at all times in the class. If they finish the day's assignment in class, they should continue on to the next section.

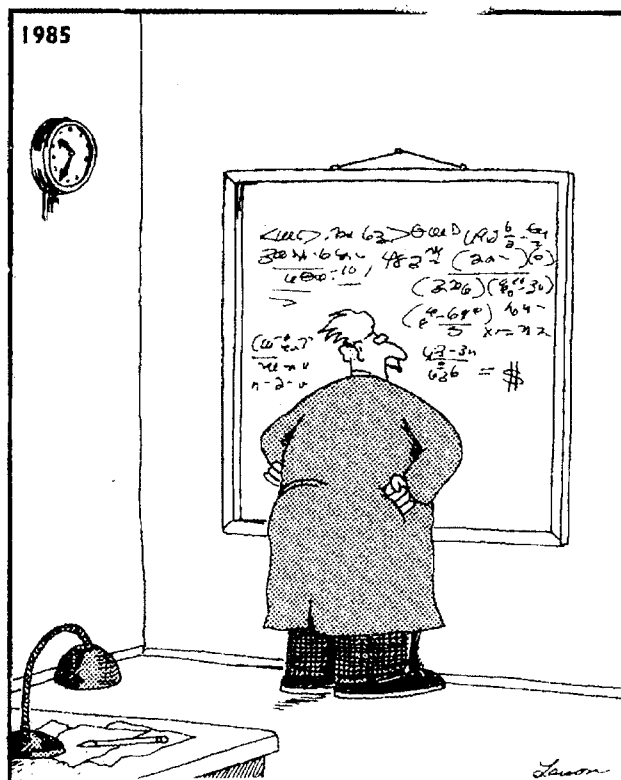
## Materials:

Gore Physics 1.

**Effort Mark:** will be evaluated according to the NorKam CARES effort matrix which is posted in the classroom.

**Core Competencies:** will be evaluated using self-assessment. Students will consider their own development in the areas of:

- Communication
- Critical Thinking
- Creative Thinking
- Social Responsibility
- Personal Identity
- Personal Awareness



Einstein discovers that time is actually money.

## Assessment

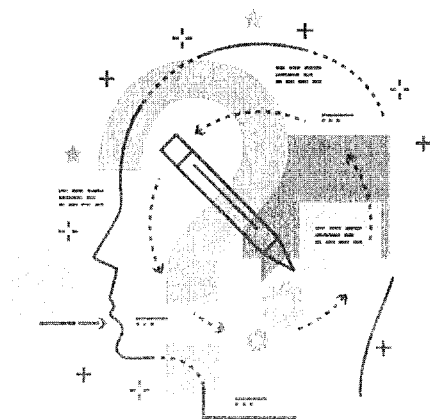
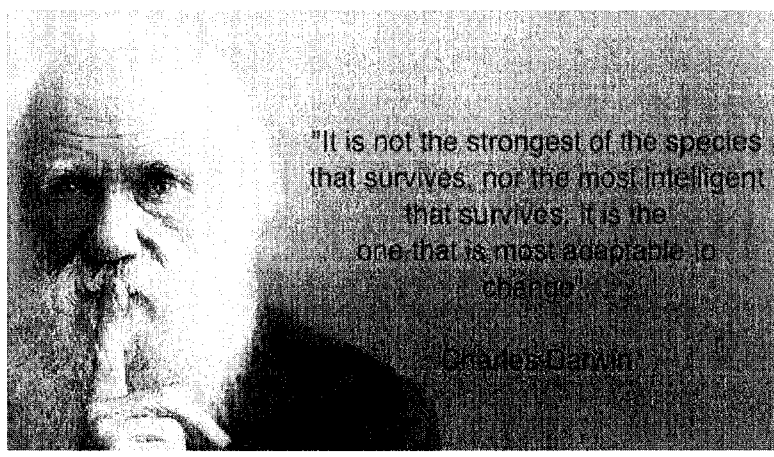
**Formative assessment:** will consist of assigned questions and quizzes. Formative assessment does not count towards the final mark

**Summative assessment:** will consist of unit tests, laboratory reports, and projects. There will be rewrite opportunities for unit tests. However, corrections on formative and summative work are expected in order to qualify for a retest.

**Curricular Competencies:** skills that all students are expected to develop in this course. They will be assessed during experiments and projects in each unit and consist of:

- Questioning and predicting
- Planning and conducting an experiment
- Processing and analyzing data
- Evaluating experimental results
- Applying and innovating
- Communicating

**NorKam attributes:** students are expected to demonstrate the attributes of Global Citizenship, adaptability, and inquiry. These attributes will be incorporated into the rubrics of student projects.



**Course Content:**

Content is organized into the following units which will be equally weighted:

Unit	Big Ideas	Elaborations
Motion	An object's motion can be predicted, analyzed and described	
		Vectors and scalar quantities
		Horizontal uniform and accelerated motion
		Projectile motion
Forces	Forces influence the motion of objects	
		Contact forces and the factors that affect magnitude and direction
		Mass, force of gravity, and apparent weight
		Newton's laws of motion and free-body diagrams
		Balanced and unbalanced forces in systems
Energy	Energy is found in different forms, is conserved, and has the ability to do work.	
		Conservation of energy; principle of work and energy
		Power and efficiency
		Mechanical advantage, applications of simple machines by First Peoples
		Electric circuits (DC), Ohm's law, and Kirchhoff's laws
		Thermal equilibrium and specific heat capacity
Waves	Mechanical waves transfer energy but not matter.	
		Generation and propagation of waves
		Properties and behaviours of waves
		Characteristics of sound
		Resonance and frequency of sound
Final Exam	Cumulative Assessment of the course	
		Final exam consists of multiple choice, written response, and experimental sections