**Grade 12 University Physics (SPH 4U1)**

***Course Outline:***

*St. Mary's High School*

*Winter 2020*

*Miss L. Takken*

**Credit Value: 1**

(Prerequisite: SPH 3U1)

This course enables students to deepen their understanding of physics concepts and theories. Students will continue their exploration of energy transformations and the forces that affect motion, and will investigate electrical, gravitational, and magnetic fields and electromagnetic radiation. Students will also explore the wave nature of light, quantum mechanics, and special relativity. They will further develop their scientific investigation skills, learning, for example, how to analyse, qualitatively and quantitatively, data relating to a variety of physics concepts and principles. Students will also consider the impact of the technological applications of physics on society and the environment. This course will help students to learn to be reflective, critical and creative thinkers, as well as discerning believers, who can apply their knowledge in the spirit of social justice to the world around them. They can then use this knowledge to make appropriate decisions in light of Gospel values and Church teachings. [Course Selection Booklet]

**Text: Physics: Concepts and Connections, Book Two, Heimbecker, Brian et al. Irwin Publishing, 2002**

**Classroom Rules:**

1. Be on time.
2. Be prepared.
3. Be safe. Follow all safety rules and procedures.
4. Assigned work is due on the assigned date.
5. If you miss a class, it is **your** responsibility to:
   1. obtain any work which was missed. (www.misstakken.weebly.com)
   2. determine what material was submitted for evaluation and submit it. (google docs or email [linda\_takken@bgdcsb.org](mailto:linda_takken@bgdcsb.org))
   3. obtain all handouts and assignments. (www.misstakken.weebly.com)
6. **Show respect, to all, at all times.**

**Evaluation:**

|  |  |
| --- | --- |
| **Ongoing Assessment 70 %** | **Final Assessment 30 %** |
| Knowledge/Understanding 30 % | Summative Activity 10 % |
| Application/Thinking/Inquiry/Problem Solving 30% | Exam 20 % |
| Communication 10 % |  |

**Note: Miss Takken has office hours most days at lunch. If you need extra help or need to finish a lab make use of this service. As well, after school is a possibility if you ask ahead of time.**

**Criteria of Evaluation**

As a student in Grade 12 University Physics, it is important that you fully understand how your final mark will be determined. The purpose of this handout is to let you know what is expected of you in this course and specifically how you will arrive at your final mark.

**Tests and Quizzes:**

A test will be given after every unit, perhaps twice in a unit if it is a complex one. Reasonable advance notice will be given to the students for all major tests. Quizzes may be given at any time with or without previous notice. Quizzes may be on homework, lab work or class work. Quizzes will be given at the beginning of class so if you are late, you will probably miss your quiz.

Assessment and evaluations are taken very seriously in this class. It is extremely important that all students be present on the day of a test. Attempts will be made to avoid conflicts with test dates. However, if a student knows that it is impossible to be present for a test, they must make arrangements with Miss Takken, to write their assessment prior to the test date.

**Lab Reports and Assignments:**

Lab Reports and assignments will be given throughout the semester. It is very important to complete these assignments by the day which they are due. Assignments will be collected at the **beginning** of the period. There will be a final project in this course worth 10% of the final grade.

**Supplies:**

Students will require a three-ring binder, with 5 dividers, graph paper, a protractor and a **scientific calculator**. Students must bring all supplies every day along with their textbook.

**Marks:**

Your performance on assigned tasks will be given out periodically. It is your responsibility to check these postings and inform the teacher if there are any discrepancies.

**Course Topics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Unit** | **Topic** | **Chapters** |
|  | ***1*** | ***Forces and Motion: Dynamics*** | ***1-3*** |
|  | ***2*** | ***Energy and Momentum*** | ***4-6*** |
|  | ***3*** | ***Electrical, Gravitational, and Magnetic Fields*** | ***8-9*** |
|  | ***4*** | ***The Wave Nature of Light*** | ***10-11*** |
|  | ***5*** | ***Revolutions in Modern Physics: Quantum Mechanics and Special Relativity*** | ***?*** |

**Course Outline Acknowledgement**

**SPH 4U1**

I am fully aware of the expectations and evaluation in SPH 4U1 and my parents have read the outline.

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please Print Student's Full Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian's Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To contact you about the student's progress, it would be helpful if you would provide the information below:

Phone Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Time of day when it is best to contact you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other information or comments:

**Proper attendance and homework completion will contribute greatly to your son's/daughter's success in this class. Thank you in advance for your help in these areas. As well, I have a website where I post assignments and daily notes. These can be found at** [**www.misstakken.weebly.com**](http://www.misstakken.weebly.com)**. I can be reached by email at** [**linda\_takken@bgcdsb.org**](mailto:linda_takken@bgcdsb.org)**.**

Your comments and any communication are always appreciated.