



Tohoku International School

Secondary School Course Syllabus

Course Title: Physics	Teacher: Ms. Constance Bahn (e): cbahn@tisweb.net
Grade Level(s): Grade 11-12	Time Frame: 37 weeks
Brief Course Description: <p>This course develops students' understanding of the basic concepts of physics and enables students to deepen their understanding of physics concepts and theories. Students will explore kinematics, with an emphasis on linear motion; different kinds of forces; energy transformations; and the properties of waves and light and electricity and magnetism. 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. They will enhance their scientific investigation skills as they test laws of physics. In addition, they will analyze the interrelationships between physics and technology, and consider the impact of technological applications of physics on society and the environment.</p> <p>Our Physics course at TIS acts as an introduction to the basics of mechanics and dynamics. To achieve this, the course will be delivered through constructivist and co-operative methods, focusing on modeling instruction.</p>	
Course Philosophy: <p style="text-align: center;"><i>Everything is Physics; Physics is everything.</i></p> <p>Physics may be considered the most basic and fundamental science. An understanding of the basic concepts of Physics allows an individual to better understand the world around us – how and why things occur the way they do. It also allows for deeper understanding of other core science subjects such as Chemistry and Biology. All physical phenomena can be understood and described using Physics concepts.</p>	
Course Objectives: <p>Students will:</p> <ul style="list-style-type: none">● develop student's knowledge of the physical world● develop an understanding of physical concepts and attain the ability to apply these concepts to novel situations● develop an interest and appreciation of how physics relates to life● design, carry out, analyze and write up simple experiments● learn how to record data/observations, draw/label diagrams and research topics	
Assessment: <p>Assignments & Lab Reports [30%] Tests & Quizzes [30%] Semester Projects [30%] Learning Skills [10%]</p>	

Physics (cont'd)

Assessment cont'd

Assignments & Lab Reports – 30%

The Physics course is designed with a focus on inquiry, investigation and problem-based learning. Thus, the major component of the grade will consist of class work in the form of various assignments and lab work.

Quizzes & Tests – 30%

Students should expect to have one major test at the end of each unit of study in this course. Quizzes dealing with concepts taught in class can be expected to take place on a regular basis. Students will be given **at least** one week's notice prior to a test.

Semester Projects – 30%

These major evaluation tools for this course are meant for the students to apply what they have learned throughout the year.

Learning Skills – 10%

Attendance, organization, homework completion and the ability to take initiative and work independently and in groups all play a role in student success and are important for achieving the course expectations.

Extra Assistance:

Please arrange to meet ahead of time if you would like to ask questions about the material. You may also send questions or requests through the email address above.

Late Assignments:

If an assignment is submitted after it has been marked and returned to the class or taken up in class, the student may receive a mark of zero. If a student fails to submit an assignment and has not made arrangements with his/her teacher, the student may receive a mark of zero.

Course Specific Materials Required:

- A4 notebooks, dividers and paper
- Graphing Calculator (TI-brand preferred)
- Ruler

Units of Study:

- 1 *Mechanics A*
- 2 *Mechanics B*
- 3 *Light & Sound*
- 4 *Magnetism & Electricity*