IB SL Physics 11 & 12
2011-2012

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Course Overview or Summary

IB SL Physics is designed to provide a good foundation for students intending to pursue further education in the science field. It will be an excellent preparation for a further course of Physics with Calculus.

Outline

Physics IB First Year

1. Physical Measurement & Graphing (Topic 1) Sept.
2. Vectors (Topic 1) Sept.
   3.1. Kinematics (Level I)
   3.2. Dynamics (Level I) & Momentum (Level I - 1D)
   3.3. Work, Energy, & Power
4. Thermal Physics (Topic 3) Feb. - April
5. Energy, Power and Climate Change (Topic 8) May - June

Group 4 Project (10 hours) June

End of First Year

Physics IB Second Year

1. Special Relativity (Options D1 – D3 only) Sept
   2.1. Dynamics – Incline Planes (Topic 8 & Option A)
3. Static Equilibrium (Topic 2.2.6 - 7) Oct. – Nov.
4. Circular Motion & Gravitation (Topic 2.4 & Topic 6) Feb - March
5. Oscillations and Waves (Topic 4) Dec – Jan
6. Sight & Wave Phenomenon (Option A) Jan - Feb
7. Electromagnetism (Topic 5 & 6) March - April
   7.1. Static Electricity
   7.2. Current Electricity
   7.3. Magnetism
8. Atomic & Nuclear & Particle Physics (Topic 7 & Option D4 - 5) April - May

Review for Final Examination (After school Classes from Jan to May)
Procedures for Assessment and Evaluation

Report card marks will be cumulative marks to date. That is, the mark will reflect the students overall standing in the course based on the percentage of course content completed.

Marks are calculated as follows:

- Homework, Assignments ........................................ 20%
- Quizzes & Tests.................................................. 80%

Final school Grade for IB Physics (End of Grade 12) is calculated as follows:

- School Mark ..................................................... 76%
- Lab Mark ............................................................ 24%

The final Mark awarded by IB is based on:

- External Assessment IB Exam Mark ......................... 76%
- Internal Assessment Lab Mark ............................ 24%

Course Expectations

This a challenging course with a final exam at the end of the second year of study. Students will have to know course material that was presented 18 months previously. Students will have to really understand the topics. Review of materials covered on a daily basis is required. Needless to say completion of all assignments and lab work is expected. It is imperative to keep up with the course work. Falling behind will create a great deal of difficulties.

It is expected that students will behave in the appropriate manner in science classes and adhere to all safety rules. Show up to class on time. Be prepared with equipment and supplies. Make sure that you get help if you do not understand assignments. Be sure to use your class time to your advantage.

Late Labs, Worksheets, Assignments:

Late work will not be accepted.

If a student wishes to make up an assignment then the student must make arrangements with me to work after school in my classroom. They must completely redo the assignment or another one similar to original. No penalty will be given for completion of assignments in this manner.

IB labs must be handed in time and will not be accepted late period.

Missing a Quiz:

Quizzes are made up of a few questions that test the student’s knowledge on a single concept. They are created with the intent to help students to focus on and understand a concept and prepare for an upcoming unit test. Missed quizzes CAN NOT be made up. The quiz will be omitted from the students mark.

Missing a Unit Test:

Upon missing a FIRST test, providing students have a valid reason for their absence, with a written explanation from a parent or guardian, students will be given an opportunity to write an equivalent test within 2 days upon their return to school. Students without a written explanation and a valid reason will be given a grade of zero. Non-emergent appointments are not valid reasons. Arrangements for known conflicts must be made in advance. Students will make up the test on their own time, and a time convenient for a supervisor.

Upon missing a subsequent test and fulfilling the above criteria, a meeting with the school administrator may be required before a student will be allowed to write an equivalent test.
Final Words:

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself, from the very smallest particles to the vast distances between the galaxies. Student will engage in studies of Newtonian Mechanics, Einstein’s Special Theory of Relativity, and Quantum Mechanics. Despite the exciting and extraordinary developments of ideas throughout the history of physics, certain things have remained unchanged. You are about to embark on the study of the oldest and most comprehensive of the three major sciences. It will sometimes be a challenging proposition. It will also, I hope, to be an interesting and eye-opening experience. Science is an experimental science. Be prepared to investigate a wide range of phenomenon and to enhance your physics experience.

It is very important that you keep up with the work. Get help whenever you need it. Be sure to do daily review of the concepts presented. These are the keys to fully understanding the course and to really enjoying your experience in Physics IB SL.

Newton said:

“If I have seen further (…in science) it is because I have stood on the shoulders of giants.”

Be prepared to also stand on shoulders of great scientific minds!