



IB Standard Level Physics
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Grade Level: 12-High School

Subject Area: Science

Course Number: S465111

Course Title: IB Standard Level Physics

Course Length: Full Year

Prerequisite: Chemistry or Accelerated Chemistry, Algebra II/Trig, **and** Accelerated Physics

Course Description:

Standard Level IB Physics is designed to prepare students to take the International Baccalaureate SL Physics exam in May. Areas of study will reflect the topics determined by the International Baccalaureate Organization. Students will use algebra, geometry and trigonometry to analyze physics phenomena in the forms of word problems, demonstrations, projects, and lab experiments. A strong math background is essential. Student designed labs are a core aspect of this course. ****Students will need a scientific calculator****

IB Topics

IB Physics Core SL Topics	
IB Topic 1	Measurements and Uncertainties
IB Topic 2	Mechanics
IB Topic 3	Thermal Physics
IB Topic 4	Waves
IB Topic 5	Electricity and Magnetism
IB Topic 6	Circular Motion and Gravitation
IB Topic 7	Atomic, Nuclear and Particle Physics
IB Topic 8	Energy Production

We will also be covering Option C: Imaging. The exam will cover the core topics, and option C.

****A more detailed description of core IB topics may be found at in schoology****

Content-based Instructional Practices:

This course uses inquiry activities, in an experimental setting, with strong emphasis on the content and the process of science. Students will explore physical and earth science concepts through both group and individual work. Activities may include laboratory experiments (both inquiry and structured), lectures, class discussions, demonstrations, mathematical problem solving, hands-on activities, projects, presentations, and engineering design activities (such as mousetrap cars or rockets)

Assessments (on-going, formative and summative):

Instruction should include formative assessment of prior knowledge, individual development of concepts and effectiveness of instruction. Examples of formative and summative assessments in this course can include informal observations, discussions with students, projects, laboratory reports, student demonstrations, oral presentations, portfolios/notebooks, quizzes and tests.

Instructional Materials:

Holt: *Physics*, Oxford: IB Diploma Programme Physics

Technology and Internet:

Students will use measurement/data-gathering equipment and Internet resources. Where appropriate and available, students and teachers should use electronic sensors and probes, electronic meters, computer simulations, multi-media presentations and electronic whiteboards.

Grading Policy:

SL Physics will follow the Highland Park Senior High Grading Policy, including 20% formative work, and 80% summative work.

Grades will be based on the following items:

- Lab work and write-ups
- Homework (Weekly Book Problems, periodic lab write-up/prep)
- Quizzes and Unit Tests
- Midterm and Final Exams
- Personal & Manipulative Skills
- Projects

In addition to class requirements, students taking the SL IB Physics test are required to complete a Group IV project within the science department. The project will be done outside of the regular class period, and will include students from other science disciplines. It will be completed during second quarter

General Classroom Expectations

- Attend class every day
- Be on time and prepared (**notebook, pencil, scientific calculator, textbook, planner**)
- Be respectful of classmates and equipment
- Come to class ready to learn
- Take pride in your work and do your best
- Be open to new ideas and be a good listener
- Be willing to try things that may seem difficult
- Always participate with the highest academic integrity and honesty
- THINK and work hard...no giving up!
- Have fun!

Lab safety procedures are expected to be followed. A copy of the safety contract is available on schoology.

It is easier to keep up, than it is to catch up. Time may be arranged, before or after school, for assistance.

For specific daily projects and homework, calendar and grades please check in on schoology.

We're looking forward to a fantastic year!