

IB Physics 1-2 Syllabus
Metro Classical and Academic High School
2020-2021

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Required Materials: 1) IB Physics, 6th Edition Textbook 2) Notebook (Spiral or 3 ring binder with paper) 3) Folder
 4) Writing utensil 5) Calculator (Scientific are sufficient. Graphing are allowed.)

IB Physics Course Overview

Physics 1-2 (Year 1)	Physics 3-4 (Year 2)
Unit 1 1D Motion and Error Analysis (IB 1.1, 1.2, 2.1) (year-round)	Unit 9 Oscillations (IB 4.1, 9.1)
Unit 2 2D Motion and Vectors (IB 1.3, 2.1)	Unit 10 Rotation (B.1)
Unit 3 Forces and Newton's Laws (IB 2.2)	Unit 11 Waves (IB 4.2, 4.3, 4.4, 4.5)
Unit 4 Work and Energy (IB 2.3)	Unit 12 Electricity (IB 5.1, 5.2)
Unit 5 Momentum and Collisions (IB 2.4)	Unit 13 Electromagnetism (IB 5.3, 5.4)
Unit 6 Thermal Physics (IB 3.1, 3.2)	Unit 14 Nuclear Physics (IB 7.1, 7.2)
Unit 7 Thermodynamics and Energy (IB B.2, 8.1, 8.2)	Unit 15 Particle Physics (IB 7.3, 12.1)
Unit 8 Circular Motion and Gravity (IB 6.1, 6.2)	An Independent Internal Assessment (IA) Project

Grading: Grades will be determined by the following formula:

$$\text{Percent grade} = \frac{\text{Earned points} + \text{Extra Credit}}{\text{Possible points} - \text{Exemptions}} \times 100$$

There are many different factors that contribute to your physics grade so that there are no large High Stakes assignments, including the final.

Physics Class Components	Typical percent contribution for semester grades
Unit Tests (100 pts ea)	40%
Lab Reports (20-25 pts ea)	20%
Classwork (10-15 pts ea)	15%
Homework (2 pts ea)	5%
Formative Assessments (1-2 pts ea) (exemptions)	5%
Comprehensive Final Exam (150 pts)	15%

Letter Grades *"Success is the maximum utilization of the ability that you have."—Zig Ziglar*

A (89.5 to 100)

B (79.5 to 89.4)

C (69.5 to 79.4)

F (<69.4)

Because there will be extra credit opportunities throughout the semester, final grade percentages will not be modified. Extra Credit contributions to your physics grade shall not exceed 5%. Any extra credit opportunity that may arise will be available to all students.

Tests: Unit Tests will occur upon completion of the corresponding unit are typically 100 pt tests. If you miss a test day, you will need to take an alternate version of the test as soon as you can. If you earn **<60 % on a test**, you are **required to retest**. Your two scores will be averaged for your unit test grade. If you earn between 60 and 80%, you *may* retest. Retests must be completed after school, before school or during lunch. You will be provided with a clean IB Physics Data Booklet for use during all tests.

Lab Reports: Laboratory reports will use the "Physics Laboratory Format" document that will be provided separately, unless otherwise noted. Lab Reports are graded on a 25 point scale and are due one week after the experiment has been done unless otherwise noted. Points may be deducted for late reports at a rate of 5 points each class it is late.

Classwork: There three types of classwork. Announced **quizzes**, special **learning activities** including cooperative learning, and hands on **lab activities** that do not require a formal report.

Homework: There will be homework nearly every class. Often you will be able to begin the homework assignment during class time when I am available to help as needed. Homework assignments are due at the beginning of our next class. It's a good idea to build a habit of working together on physics problems. Homework is graded on effort, completion, and correctness. Homework is worth 3 pts (1 pt for completeness, 1 pt for on time submission, and 1 pt for correctness). 0 is recorded if the assignment is simply not done. Students should correct their work as needed during the homework discussion and ask questions if anything remains unclear.

Fair warning: Not doing the homework assignments with your best effort is the quickest way to sabotage your grade.

The first time around your best effort may be to read through the problems, sketch a diagram, and list the given information. This is a GOOD START. Not a failure. Very much like learning to walk, ride a bike or sink a free throw, the first time you try physics, you can't expect to perform perfectly. Mistakes and partial solutions are part of the process toward a complete analysis and detailed understanding. Homework is more about building understanding than practicing a simple exercise. Just like walking, riding a bike or hitting the basket, learning physics must be learned by doing.

Formative Assessment:

- A. P3 Challenge: Most classes will begin with a 3 to 5 minute P3 challenge which may be a review question, a sampling from the homework, or a question relating to the lesson for the day. P3 stands for Present, Prepared and Proficient. You earn one point for being present and prepared with a writing utensil, and you earn a second point if you answer the question correctly.
- B. Exit Slips: Most classes will end with an exit slip which may be a problem like a P3 challenge, a demonstration of progress on the homework for the day, or a verbal question. Exit slips will be worth one point.

Final: The final for the course each semester will be comprehensive with no exemptions and will model the IB test.

Absences and Tardies: When you have an excused absence, you are exempted from the P3 Challenge, Exit Slip and anything else beyond your control for that day. Regardless of the reason for the absence, you are still responsible for completing the homework, classwork, laboratory experiments or tests in a timely fashion. You are also expected to obtain a copy of the notes from a classmate. Check the class website. All course materials for the day will be posted there. All makeup or late work needs to be completed by the end of the corresponding unit. The grade for any work still missing will become a zero score on the unit test day. If you are tardy, you are responsible for all missed work. There are no exemptions for tardiness. More than 4 tardies in a semester will result in a referral to administration.

Elective Peer Tutoring: You may elect to sign in for tutoring time during lunch or after school. Anytime more than one student is working together, helping each other out with physics, 1 pt extra credit will be awarded to both students because most of the time, the distinction between a tutor and a tutee is very blurred. I will be available to help or reteach as needed. Forming study groups is a powerful way to study physics. **Required Tutoring:** If your class average falls below 70%, it is required that you participate in tutoring to correct your mistakes and clarify misunderstandings until your grades improve.

Classroom Norms:

- 1) Turn off Cell Phones (like in a Movie Theatre) – Collected during tests
- 2) Participate Fully, Stay in the Work
- 3) Off topic conversations will be shelved for later
- 4) Respect everyone's learning process and progress, including your own – Everybody makes mistakes.
- 5) Do your best
- 6) Adhere to all rules and regulations outlined in the Student Handbook.

Classroom Procedures:

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| 1) Arrive on time | Visit bathroom, or get water, before or after class. |
| 2) P3 challenge; homework check | Blow your nose discretely. |
| 3) Homework review | Wait to be dismissed. |
| 4) Lesson activities—Varies | Stay seated unless otherwise directed. |
| 5) Record the Homework assignment | Label all work with your name, date, and course |
| 6) Complete the Exit Slip. | E.g. "Jared S. 9/13 Phys 1" |