



Thornton High School
 9351 North Washington & Thornton, CO 80229
 Office: (720) 972-4800 & Fax: (720) 972-4999
<http://www.thorntonh.adams12.org>



School Year	2017-2018	Teacher Name	Robert Pearson
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Email Address	Robert.a.pearson@adams12.org		

Course Name	IB Physics II		
Course Description	<p><i>IB Physics prepares students for the International Baccalaureate Physics exams. In keeping with the general aim of IB Experimental Sciences courses, IB Physics promotes understanding of the facts, patterns, and principles underlying the field of physics; critical analysis, evaluation, prediction, and generation of scientific information and hypotheses; improved ability to communicate scientific ideas; and an awareness of the impact of physics and scientific advances in physics upon both society and issues of ethical, philosophical, and political importance. Course content is determined by the IB Syllabus for Physics. Laboratory experimentation is an essential part of this course.</i></p> <p>The class will build a strong foundation in general physics. In addition to coverage of the required content outlined in the <i>IB Physics Syllabus</i> the required lab hours and the IB Internal Assessment for this course will be completed.</p> <p>This class uses <u>Higher Level Physics Ed. 2</u> (Pearson Baccalaureate) as our main textbook. Additional texts available on the Google Classroom will be referenced for some topics. The class format is primarily rooted in student designed investigations, classroom discussion, group work, as well as lecture. There will also be student-led and group activities, guest speakers, videos, demonstrations, and research reports.</p>		
Unit of Study	Content Standards	Approximate Time Spent	Targeted Date of Assessment <small>(always subject to change)</small>
Thermal Physics	IB Physics HL Syllabus, Topic 3 3.1 Thermal Concepts 3.2 Modelling a gas 8.2 Thermal energy transfer	3 weeks	Sep 1, 2017
Electricity and magnetism	IB Physics HL Syllabus, Topics 5, 10, 11 5.1 Electric fields 5.2 Heating effect of electric currents 5.3 Electric cells 5.4 magnetic effects of electric currents 10.1 Describing fields 10.2 Fields at work 11.1 Electromagnetic induction 11.2 Power generation and transmission 11.3 Capacitance	15 weeks	Nov 3, 2017 Dec 15, 2017



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Atomic, Nuclear And Particle physics	IB Physics HL Syllabus, topics 7, 12 7.1 Discrete energy and radioactivity 7.2 Nuclear reactions 7.3 The structure of matter 12.1 The interaction of matter with radiation 12.2 Nuclear physics	4 weeks	Feb 2, 2018
Energy production	IB Physics HL Syllabus, topic 8 8.1 Energy sources 8.2 Thermal energy transfer	4 weeks	Mar 9, 2018
Astrophysics	IB Physics HL Syllabus, option D D.1 Stellar quantities D.2 Stellar characteristics and stellar evolution D.3 Cosmology D.4 Stellar evolution D.5 Further cosmology	6 weeks	May 15, 2018

Grading Scale		Grade Percentages/Weights	
A	90-100	Summative Assessments (Tests, Labs, Projects)	80%
			50% Test & Large Projects 30% summative quizzes & formal labs
B	80-89	Formative Assessments (quizzes, learning checks, etc)	20%
C	70-79		
D	60-69		
F	59-50	*Weekly progress grades are posted at https://ic.adams12.org/campus/portal/adams12.isp	

SCORING AND GRADING OF SUMMATIVE ASSESSMENTS

- If no attempt to take a summative assessment has been made, a “no evidence” (NE) grade will be recorded until the assessment is completed. NE shall be defined as not attempting the assessment or not being present for the assessment.
- In order to receive a passing grade, a student must **attempt ALL summative assessments**.
- The presence of a NE grade for any summative assessment at the end of a grading period will result in a grade of F for the course, regardless of performance on other assessments.

SCORING AND GRADING OF FORMATIVE ASSESSMENTS

- Any work not turned in will be recorded as missing in the gradebook. In order to receive late credit of 50% the missing work **MUST** be turned in on/before the unit assessment.

DISTRICT POLICY CHANGE 2017-2018

*All students enrolled in this course are required to take the corresponding IB exam in May. If you do not take the exam, your score in this course will be **unweighted** and will impact your GPA. IB exams are non-refundable and after they are ordered, you will be billed for the exam for this class regardless of whether or not you sit for the exam.*



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General Expectations

- Grades are based upon the demonstration of proficiency associated with detailed content expectations. Formative grades in addition to summative unit assessments will be used to determine your grade.
- **Summative: 80%** Summative measures of achievement are taken when unit mastery is expected. (i.e., unit tests, culmination of a project, embedded assessments, etc.) One retake is available for ten days following the review of tests in class, with prior arrangement with the teacher on some form of additional learning, such as unit outlines, completion of practice work, etc. When a retake is done, the new score will be recorded (whether higher or lower). Missed tests (and retake if desired) must be made up in the two week window, which will not be extended beyond the original class time frame for retakes. At the teacher's discretion, when a test is missed, an alternative test will be substituted for the original test form. **Retakes must be completed in a single sitting within the 10 day window.** ***IB Labs, G4 and Mini IA are also summative; there is no retake for these assignments.
- **Formative: 20%** Formative assessments measure the development of skills and/or content embedded in the unit. Formative assessments are done frequently, after a student has practiced a skill or become familiar with content. Examples of formative assessments include but are not limited to exit tickets, problem solving, oral check for understanding, warm-ups, stages in a large project, quizzes, etc. There are no retakes for formative work.
- Assessments will be graded based on teacher/district/state and IB rubrics.
- For group projects, students will receive both a grade for individual work and a group grade.
- Grades are based on achievement of Content Standards and IB Grade Level Expectations.

Class Expectations

Weekly class schedules, which include assignments, class discussion topics, IB Physics Guide references, book references, and work that is expected, are available on the teacher's website. Please reference these regularly. In most cases, the current power-point and practice sheets are available on the website as well.

IB Physics Internal Assessment: Internal assessment (IA) is an integral part of the course and is compulsory for both SL and HL candidates. It enables candidates to demonstrate the application of their skills and knowledge, and to pursue their personal interests, without the time limitations and other constraints that are associated with written examinations.

This is a **required** portion of the lab hours and is sent to IB as 20% of the final assessment at the end of senior year. In order to prepare the candidates for the individual IA in the senior year, they will complete the Mini IA junior year in partners. There will be **NO LATE WORK, NO RETAKE** for these assignments.

Group 4 (G4) Project: The group 4 project is an interdisciplinary activity in which Biology, Chemistry and Physics Diploma Programme science students must participate. The intention is that students from the different group 4 subjects analyze a common topic or problem. The exercise should be a collaborative experience. This is a **required** portion of the lab hours which are submitted to IB. There will be **NO LATE WORK, NO RETAKE** for this assignment.

Tests and Quizzes: There will be frequent formative assessments, both announced and unannounced, to check student understanding of the class-work and reading assignments, and to gauge review progress. Due to the cumulative nature of this class, most or all quizzes and tests will include material from previous units.

*****ONCE AN ASSESSMENT HAS BEEN HANDED OUT; LEAVING CLASS WILL NOT BE PERMITTED UNTIL ALL ASSESSMENTS HAVE BEEN COLLECTED.**

Extra Credit Policy for this course: There is no extra credit offered in this class.



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Practice work: *Please plan on 20-30 minutes of individual practice time 4-5 days per week, either on current work or in review. Most practice work should be attempted the first day it is discussed, and then, if necessary, you have an opportunity to ask questions and get help while the material is fresh. In general, this work will need to be done on your own time, not in class.*

Absences: If material was assigned before an absence and due during the absence, it is due the day you return. If you know about an absence in advance, please work ahead to minimize the effect of the absence. If you are in the building for any portion of the school day, but will miss our class (meetings, appointments, athletics, etc) please arrange a time to take any missed tests or quizzes during your time in the building. Remember that it is **your** responsibility to stay current when missing class.

Makeup work: can be picked up from the teacher at an appropriate time. Missed notes should be gotten from classmates. You can determine what was done in class on the weekly schedules.

Lab work: is especially difficult to make up and must be made up within 2 days of the original date, before school or during open class periods (it is up to the student to make these accommodations)

Plagiarism is unacceptable. Papers will be examined for copying, and may be run through detection programs. If copying is detected, the paper will receive a failing grade that cannot be made up, and the paper will be turned over to the administration for further action. Plagiarism includes copying from any source without giving credit, including fellow students. This primarily involves labs, tests and quizzes. NOTE - I understand that students often work together on practice work - and actually encourage this - but put the material in your own words and do your own problem setup. If you find useful information anywhere besides our text, give the reference.

Cheating: During tests and quizzes, there is NO talking or phone use for any reason. Talking with others may result in both students' papers being taken away and receiving a failing grade. Talk only to me during tests and quizzes if you have questions or needs - don't risk misunderstandings!

Safety: Safety rules for lab days will be discussed at length separately. There is a required safety contract, to be reviewed and signed by parents and students, which must be returned before students can participate in lab work. In addition, there is a safety quiz which students must pass at 90% before doing labs. There will be frequent demonstrations of techniques, and checks for use of proper techniques, as new or unfamiliar techniques are introduced.



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Student Expectations

Take Responsibility

- Students are **prompt** (on time) for their classes and appointments
It is expected that students will be in their seats and ready to work when the bell rings. Students may be assigned lunch detentions after 3 tardies. Being tardy to labs (or arriving unprepared) may mean having to make the lab up another day, along with a partial loss of points.
- Students arrive **prepared** for class.
Bring the necessary materials to class every day. This includes a pen or pencil, paper, notebook with current unit, calculator, and IB syllabus/data book. On lab days, bring your lab book, a black pen, and dress properly. Phones, music players, cameras, etc. must be out of sight in your backpacks at all times. If they are out for ANY reason, they may be confiscated and then picked up from the attendance office at the end of the day. If this happens repeatedly, they will only be returned to parents
- Students are **safety conscious** in the classroom at all times.
There is NO eating or drinking in the classroom except for screw-top water bottles. This is a safety issue – this room is used by multiple classes, and the tables may have chemicals on them. For the same reason, makeup, lotion, etc. are also to be kept in your backpack.

Honor Each Other

- Students are **polite** to each other and to adults
We will speak positively and respectfully to and about each other and support each other during class and group activities.

Strive for Success

- Students **produce** work that demonstrates their skills and abilities
Make a good attempt on all formative work, ask questions when you need to, pre-read materials before coming to class, get additional help when needed.
- Students actively **participate** in classroom activities
During labs and class discussions, students will support their lab partners and classmates by being attentive, cooperative, reliable, and positive towards others efforts. During this class period, we are working on chemistry. If materials from other classes are out, they may be confiscated and not returned.
- Students come to class with a **positive mental attitude**