



CARSON GRAHAM
SECONDARY

Physics 11

Course Outline

Welcome to Physics, the fundamental science that helps us better understand how the universe works from the smallest of particles to as large as the galaxies beyond. Physics is the basis for the other sciences you take for its laws will apply to chemical reactions as much it applies to natural selection. Without Physics, we would have no Internet, no TV (or Netflix), no cars, no Pokémon Go, and so on. Without new discoveries in Physics, the frontier of technology, medicine, and industries will find difficulty in their innovative journeys. Before we talk about the new and exciting Physics, we need to know and master the fundamentals of Physics, and that's why we're here.

This course will help you discover the laws of Physics mostly through experimentation and quantitative manipulation. Through these experiments we will be building your skills as a scientist by exercising and improving your problem solving, practical, critical thinking, collaborative, communication, and research skills. We will further build these skills through hands-on activities, un-demonstrations, and daily practice.

Communication

E-mail: LLi@sd44.ca

Room: B213

Website: edulli.weebly.com

Materials

Please bring all materials to class. You are expected to come to class ready with all the materials listed below. I will **NOT** allocate class time for you to gather these materials.

- 1) Ringed Binder
- 2) Lined and graph paper
- 3) Pen and pencil
- 4) Calculator*
- 5) Ruler
- 6) Duo tang filled with paper**

*IPods, phones, iPads, or laptops are not allowed as substitutes for calculators in class

**Please bring this by the second class. We will keep this inside the classroom and will use it everyday in class.

Note: We will not be using a textbook this year. If you wish to sign out a textbook to study from, please check in with me during tutorial times.

Tutorial Times

I am available most days at **lunch and afterschool until 4pm**. If I'm not inside my classroom and my door is left open, I am somewhere inside the school so please wait inside the classroom until I get back. You can check with me in advance if I will be available for a particular time if needed.



Topics

- Introduction to experiments. [Uncertainty and Data]
- Mechanics.
 - Kinematics (Motion and Projectiles).
 - Newton's Laws/Dynamics.
 - Momentum.
 - Energy.
- Waves.
- Thermal Physics.
- We may also touch on Relativity, Nuclear Physics and/or Electric Circuits.

Assessment

This course will be assessed primarily using an IB type "Levels System". Levels will be awarded on tests and quizzes. On your report card, as well as being provided with an "IB Level", you will be awarded a "BC provincial" grade.

| IB Level | Approximate BC percent equivalent range |
|----------|---|
| 7 | 100-96 |
| 6 | 96-88 |
| 5 | 88-80 |
| 4 | 80-70 |
| 3 | 70-60 |
| 2 | 60-50 |
| 1 | 49-0 |

Work Habits. We are also looking for students to develop excellent work habits. We will often refer to these as "ATL" (Approaches to Learning). We generally break these Approaches down into 5 different areas:

- Thinking skills
 - Critical-thinking skills: Analysing and evaluating issues and ideas.
 - Understanding and analyzing data well.
 - Transfer skills: Using skills and knowledge in multiple contexts.
 - Solving problems in unfamiliar contexts.
- Communication skills
 - Exchanging thoughts, messages and information effectively through Interaction.
 - Reading, writing and using language to gather and communicate information.
 - Writing and communicating clearly.
 - Using correct scientific language and notation (Equations/Symbols etc...)
- Social skills
 - Collaboration; Working effectively with others.
 - Knowing when to volunteer information and when not to.
 - Being a good leader.
 - Listening and respecting others.
- Self-Management Skills
 - Organization skills: Managing time and tasks effectively.
 - Being prepared for class.
 - Affective skills: Managing state of mind including mindfulness, perseverance, emotional management, self-motivation, and resilience.
 - Reflection skills: (Re)considering the process of learning; choosing and using ATL skills.
- Research Skills
 - Information literacy skills: Finding, interpreting, judging and creating information.



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Expectations

- 1) **Respect.** I expect you to respect others, yourself, and our learning environment.
- 2) **Honesty.** We are working together as a class to provide you and your classmates with the best learning experience, so I expect you to be honest about your learning process and the learning space around you. If you have a problem, please come talk to me privately or address this together with the class. If you are having trouble understanding a concept, don't wait for the problem to fix itself; instead come during tutorial times to sort it out. Until you can be honest with yourself can you move forward with your learning.
- 3) **Responsibility.** Once you can honestly identify the roadblocks in your learning, the next step is to take responsibility to overcome these roadblocks. I expect you to take responsibility over your own learning. I cannot do that for you. Sometimes we make mistakes, and it's OKAY to make mistakes. It is MORE important to take responsibility over your mistakes and improve for next time.
- 4) **Show up on time.** Speaking of responsibility, you are responsible for the material covered in class. We will often begin the class with a warm up activity that is important for your grasp of the content, so it is imperative that you show up on time or even before class begins. You will be expected to start these warm up activities immediately after you come into class. I will not give you extra time to finish the activity if you are late. If you are late, you must *sign in* the Late Binder by filling in the date, your name, block, and the reason of your tardiness. If you continue to be late for class, I will invite you in for a conversation. If the problem persists, your parents will be contacted.
- 5) **Materials.** Coming to class ready with all the materials ready keeps you and the class on track. We will not waste precious lesson time to wait for you or anyone to find their materials. Make sure you keep your calculator in your bag, daily. I may have extra supplies by the bookshelf for the occasional forgetful one, but do **NOT** think of it as a reliable source. If you do borrow a utensil from the class supply, please make sure you return it by the end of class so your forgetful pal in the next class has something to use.
- 6) **You are responsible for missed classes.** This includes work and content covered in class. You are encouraged **not** to miss classes because it is VERY EASY to get left behind. You are expected to bring a note signed by your parents for any missed class(es).

For work (*the daily problem, assignments, and lab work*) completed during your missed classes, you must arrange time to come to tutorial times to complete them with me. These **cannot** be completed at home.

If you missed a *deadline* due to an absence, you are expected to bring your assignment the **next day** you come to school with your signed parent note. If you missed a deadline for other reasons, refer to the next bullet.

To write a missed *test or quiz*, I must receive a signed parent note before you schedule a time to write the missed test/quiz.



- 7) Handing work in late is **not acceptable** and shows a lack of respect for deadlines as well as your negligence in your learning. I will keep track of late work. Continual offenses will first result in a conversation with me, and eventually a call home if the problem persists.

If you missed a deadline, you have until the day I return the marked assignments to submit the late work. Usually, this is the next class. After I hand back the marked assignments, you've **lost the privilege** of doing the late work at home and must **come into tutorial sessions** to finish the work independently. Work done at home and handed it in to me will **NOT** be accepted at this time. Do not cram late work near reporting periods because tutorial sessions are limited.

- 8) Food and beverages are allowed in class only if you're responsible for disposing your waste and not disrupting the class with your gourmet meal or your spilled coffee. Food and beverages are absolutely **NOT allowed** in the lab.
- 9) Our classroom has a **NO phones** policy. You will be instructed to use your phones for educational purposes when appropriate, otherwise phones should be away. You **cannot** use your phone as a calculator during class, so make sure you bring your calculator to every single class. When I see you on your phone when phones should be away, you will be given a warning for the first time. If I see you on your phone for the second time, I will confiscate your phone for the remainder of the class. Again, continual offenses will first result in a conversation with me, and eventually a call home if the problem persists.
- 10) Other technology is generally prohibited unless instructed otherwise. Music players, game consoles, and entertainment devices are **NOT allowed** during class time. Laptops and tablets used to take notes in class are acceptable. However, these will be taken away if you are playing games or chatting on social media.
- 11) Please read the next section for Academic Integrity and Honesty.
- 12) Have fun! Enjoy the learning process :)

Academic Integrity and Honesty

The work that you complete must be yours alone. There is **ZERO** tolerance for plagiarism. This includes copying whole or parts of sentences from copyrighted material in print, online, and peers. A great tool to check your work is turnitin.com where you can submit your writing to check for plagiarism.

Please read page 12 of your agenda book on Academic Integrity and Honesty for our school's policy. Below is a quote from your agenda:

“Being unaware or pleading ignorance of the standards related to academic honesty and student integrity is not an excuse for dishonesty, plagiarism and malpractice.”

Collaborating with your peers is encouraged but the work produced needs to be original. If you have difficulty with an assignment, please come talk to me in advance so we can work something out.



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“An authentic piece of work is one that is based on the student’s individual and original ideas, with the ideas and work of others fully acknowledged. Therefore, all assignments for assessment, regardless of their format, must wholly and authentically use that student’s own language, expression and ideas. Where the ideas or work of another person are represented within a student’s work, whether in

the form of direct quotation or paraphrase, the source(s) of those ideas or the work must be fully and appropriately acknowledged” (Diploma Programme: Academic Honesty, 2011, pg 2.).

Heads up!

1) **Corrections for marked quizzes and assignments are optional (no labs, projects, reports, and tests).**

After receiving your marked quizzes (some assignments are included), you'll have up till the day of your unit test to hand in corrections. Late corrections will **NOT** be accepted. **Complete corrections** will boost your original quiz/assignment grade by 3 marks (~15-20% of the quiz/assignment). Late assignments do **NOT** have this privilege. Make sure you follow the steps of completing your corrections posted on our website: edulli@weebly.com.

2) **Daily exercises.** We will be doing a problem of the day (PD) at the beginning of class in your duo tangs, or PD journals. You are expected to come to class, grab your PD journal by the bookshelf and start on the PD on the board right away. We will mark the PDs together and the journals are to be returned to the bookshelf after the activity. Your PD journal does **NOT** leave the classroom. If you need to use your PD journal to study, you can either come in during tutorials, or take pictures of your work to study at home.

3) **Videos.** I will be uploading videos throughout the year to show you more examples outside of class. Some of these videos will be helpful for you to watch. Sometimes some of these videos will be part of your homework and are mandatory to prepare you for the next lesson in class.

4) **Hot water.** I have a personal water boiler in class and you’re welcome to use it to pour yourself a hot cup of tea. Please use the sinks in the other science labs and not from the washrooms. This is your classroom resource so please treat it with care.

5) **Homework checks.** Occasionally, I will check for homework without notice. Homework helps you keep track of your learning and prepares you for the upcoming class. Pushing your homework to the last minute not only degrades the continuity of your learning but also makes it that much harder to catch up.



Tips for success

- It is imperative that you **do NOT fall behind**. Falling behind will make your life a lot harder since topics in physics build on each other and are interconnected. I would build in regular studying time, at least 1 to 2 hours before the next class. This differs from student to student.

- **DO YOUR HOMEWORK**. Practice problems exercise your understanding of physics, which is very important for your success in Physics. It is highly encouraged to do as many practice problems as you can.

Student quote from last year regarding this: "I wish I listened to you earlier :("

- **Don't memorize, conceptualize**. Try asking yourself questions when you study. Let your questions direct your studying.

- **Make connections with other subjects**. This will help you develop meaning and understand physics better.

- **Write down interesting phenomena that you observe outside of class**. Write down any questions about interesting phenomena that you see. Try to explain these phenomena using what you learned in Science. This will help you think about Physics as a Science and give you ideas for your project.

I wish you a successful year!