**IB Physics**

Linear Kinematics (Chapter 2) Syllabus

Text: *Physics* 6th edition by Douglas Giancoli

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| Block[[1]](#footnote-1) | Class | Due on this class[[2]](#footnote-2) |
| **1** Sept **4/5** | -Check out textbooks?  -Calculating Speed/Sig Figs  -Speed Trap lab outside  -Syllabus/Course Policy **(handouts)**  -Website Assignment (Watch Video)  -Information card | **Bring:** Your smiling face  **Bring:** Paper and pencil  **Turn in:** Completed information card |
| **2**  **Sept**  **6/9** | -Calculating Uncertainty + WB  -Vector nature of velocity +WB  -Hand out Uncertainty Worksheet **(handout)**  -Partners and Partner Lead Concept A/B | **Video (all):** Tour of the website  **Bring:** A calculator (every day hereafter :-)  **Read:** This Syllabus (All the footnotes)  **Turn in:** Speed trap (from block 1) |
| **3**  **Sept**  **10/11** | -Velocity and Acceleration L/D and WB  -The Data Booklet **(handout)**  -Velocity, acceleration, displacement L + WB  -Assign problems from the book/Tips | **Video A:** Velocity and Acceleration (C)  **Video B:** Velocity, acceleration, displacement (D)  **Check #1:** Uncertainty Worksheet 0-4  **Read:** Course Policy & 2.1-5[[3]](#footnote-3) |
| **4**  **Sept**  **12/13** | -**Quiz** on Course policy/Check covers on textbooks  -Grade quiz in class/ Tour of the room  -Hand out *How Far I & III* **(handout)**  -Unit conversions for Physics  -More velocity, acceleration, displacement L + WB | **Video A:** Unit Conversions (E)  **Check #2:** 2:1,**15[[4]](#footnote-4)**,17,19,21, 23[[5]](#footnote-5)  **Bring:** Your textbook for this class, with a cover on it  **Read:** Course Policy**,** 2.6 |
| **5** Sept **16/17** | -Hand out *Graphs of Motion* **(handout)**  -Position time graphs L/D + WB  -Velocity time graphs L/D + WB  -Finish *Graphs of Motion 1 and 2*  **-Explain Video Flip Concept** | **Video B:** Graphs of motion 1 – position (F)  **Video A:** Graphs of motion 2 - velocity (G)  **Read:** 2.8  **Check #3:** How Far I : #2, 3, 5, 7, 9 |
| **6**  **Sept**  **18/19** | -Free Fall and Terminal Velocity Demos  -Hand out *How Far III* **(handout)**  -Work on HF III #1, 3, 4, 7, 8  -Air Rocket Demo | **Video Flip (all):** Free Fall Problems (H)  **Read:** 2.7  **Check #4:** Graphs #1, and #2 |
| **7**  **Sept**  **20/23** | -Assign *Plot Matching* lab/ *Moving Plots* lab **(handouts)**  -Prep for Measuring the velocity of an air rocket  -IB Lab Criteria (DCP) and CE  -*Measuring the Initial Velocity of an Air Rocket* lab[[6]](#footnote-6) **(handout)** | **Video B:** Air Rocket Lab  **Read:** 2.7  **Check #5:** How Far III #1, 3, 4, 7, 8  **Bring:** A warm or rain coat **?** |
| **8**  **Sept**  **24/25** | -Assign *Moving Plots* lab **(handout)**  In class time to work on:  -*Plot Matching* lab  -*Moving Plots* lab | **Video A:** Moving Plots Lab – Spreadsheet  **Video B:** Moving Plots Lab – Lines/Accel  **Check #6:** 2:26(35.9 m/s), 33, 35, 36(25 m, 4.5 s), 37 |
| **9**  **Sept**  **26/27** | -**Quiz** 2.10 (group quiz)  In class time to work on Labs | **Check #7:** 2: 34(2.4 s, or 28.4 m),47,48(27 m/s, 37 m, 1.4 s, 4.1 s)  **Turn in:** **Ch 2 Homework** (7 days) |
| **1**  **Sept 30/ Oct 1** | Beginning of vectors | **Turn in:**  *Plot Matching* lab  **Turn in:** Air rocket Lab (DCP?, CE)[[7]](#footnote-7)  **Turn in:** *Moving Plots* lab (DCP?) |

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| Assignments   * 10 points for bringing your covered book on the 4th meeting. * 4 Labs:   + Speed Trap Lab – done the first day of class, written up the second day. No handout   + Air Rocket Lab - outdoors   + Moving Plots Lab – tape timer and cart   + Plot Matching Lab – matching the plots on the computer/written note saying you did it. No handout * 2 Quizzes   + Course Policy Quiz – study especially the bold items in the course policy   + 2.10 – suvat problems * Homework from 7 nights | Handouts  IA-CE-Description  IA-PerfectLab-Annotated  IA-PerfectLabRemarks  Lab - Air Rocket  Lab - Moving Plots  Misc - IB Data Booklet  Misc - Course Policy  Worksheet - How Far III  Worksheet -Graphs Of Motion  Worksheet-Uncertainty  Syllabus-Linear Kinematics |

1. This is the block of the syllabus, and the numbers that follow are the dates that they will happen, the first is for A day classes, the second for B. [↑](#footnote-ref-1)
2. Note that this column is for readings, things to be brought to class completed, or things to be turned in. This is the due date for these things, not what you do after the class described to the left. So on block 2, for example, you will turn in your speed trap lab from the first day. If the item is checked, that refers to problems you should have completed by that class. I will start the class by coming around and stamping them, so have them out. [↑](#footnote-ref-2)
3. These are readings from your book. You will understand class much better if you read the book even casually the night before. Section 2.1 starts on page 19 [↑](#footnote-ref-3)
4. Notice the Roman numeral III after this problem in the book. This means it is somewhat non-trivial. Don’t spend a ton of time if you get stuck, but you should be able to do the other problems. (Hint for 15 – calculate anything you can) [↑](#footnote-ref-4)
5. These are your daily homework problems. The “2:” in front of them means they are from Chapter 2. Other things are from worksheets. Be sure to do the Problems, not the Questions. (If you are IB, you should try to answer the questions as practice) Solutions for many of the problems are on my website if you get stuck – answers to odd problems are in the back of the book and you need to check them yourself. I put the answers to even numbered problems after that number in this syllabus. Start each day’s homework on a new sheet of paper and label the page Day #1, Day #2, etc. Show your work. At the beginning of class I will stamp these, and you could write them on the whiteboard and explain them for extra credit. I need you to do your homework each class as we go, so un-stamped homework is not accepted late. [↑](#footnote-ref-5)
6. This lab is outdoors, and we will avoid downpours and super cold temperatures only, so bring your rain jacket and be prepared to go outside in a light drizzle or in cooler temperatures. If it is canceled, it will fall on the next appropriate day. [↑](#footnote-ref-6)
7. These are the items on the internal assessment that I will score *for that particular lab*. For class points, you need to do what the lab asks, for IB assessment; you may need to do more. If you are an IB student, you may affix a practical work cover sheet to the front of the lab, and indicate which areas you want me to score. [↑](#footnote-ref-7)