Physics

Linear Kinematics Unit Syllabus

Text: *Holt Physics* – by Serway and Faughn.

|  |  |  |  |
| --- | --- | --- | --- |
| Block[[1]](#footnote-1) | Class | Due on this class[[2]](#footnote-2) | If you miss this class: |
| 1  **Sept**  **6/7** | -Hand out Course Policy  -Fill out information sheet  -Speed Trap/Uncertainty  -Tour of the Website assignment  -Data collection assignment for No reason to Speed | **Bring:** Your smiling face  **Bring:** Paper and pencil  **Turn in:** Completed information sheet  **Turn in:** Speed trap (In class) (indiv) | **Watch:** Videos A1 (?)  **Watch:** Videos for the Speed Trap Lab  **Watch and Read:** Info on the No Reason to Speed Lab |
| 2  **Sept**  **8/11** | -Speed  -Review Dimensional analysis (DA)  **-Math pretest** | **Video (all):** Tour of the Website  **Bring:** A calculator (every day hereafter :-) | **Read:** 2-1[[3]](#footnote-3), 1-2 to 1-3  **Read:** This syllabus!  **Watch:** Videos A1, A2 (?) |
| 3  **Sept 12/13** | -Work in groups on Speed and DA Quizlette  -NRTS and Homework reminder | **Turn in:** Speed and DA Quizlette | **Watch:** Videos A1, A2 (?)  Work on Speed and DA Quizlette on your own |
| 4  **Sept 14/15** | -Quiz on Course Policy  -Work on No Reason To Speed Lab | **Check:** Practice 2.1 #1-8[[4]](#footnote-4)  **Read:** Course Policy | **Read:** Course Policy  **Make up the course policy quiz** |
| 5 Sept 18/19 | -Acceleration and vector velocity | **Turn in:** No reason to Speed lab (indiv)  **Check:** Practice 2.1 #9-16  **Turn in:** Practice 2.1 #1-16 | **Read:** 2-2, pp 48-51  **Watch:** Videos B-D |
| 6  **Sept 20/21** | -Lateral Accelerometer assignment  -Work on Acceleration Quizlette | **Turn in:** Acceleration Quizlette | Work on Acceleration Quizlette on your own |
| 7  **Sept 22/26** | -Qualitative graphs of position  -Moving Plots equipment demo  -Work on Moving plots lab  -Hand out FA 2.1, 2.2 | **Check:** Practice 2.2 #1-6 | **Read:** 2-2, pp51-58  **Watch:** Videos for the moving Plots Lab  **Watch:** Videos G |
| 8  **Sept**  **27/28** | -Qualitative graphs of velocity  -Finish up Moving Plots Lab graphs  -Finish FA 2.1, 2.2 | **Check:** Practice 2.2 #17-22  **Turn In:** Practice 2.2 #1-6, 17-22 | **Watch:** Videos for the moving Plots Lab  **Watch:** Videos H |
| 9  **Sept 29/**  **Oct 2** | -Positive and negative accelerations on graphs  -Cha cha cha and Vernier motion cart lab |  | Come in and make up these labs |
| 10  **Oct**  **3/4** | -Tangent Lines for Moving Plots lab  **-Summative Assessments on:**  **-SA 2.1 Speed**  **-SA 2.2 Acceleration** | **Turn in:** Moving plots lab (Pairs)  **Turn in:** FA 2.1, 2.2  Turn in **all** formative work from 2.1 or 2.2 that you want credit for | **Watch:** Videos for the moving Plots Lab  **Make up your Summative assessments** |
| 11  **Oct**  **5/6** | -Solving Linear Kinematics problems |  | **Watch:** Videos E  **Read:** 2-3 |
| 12  **Oct 9/10** | -Work on How Far Quizlette |  | Work on How Far Quizlette on your own |
| 13  **Oct 11/12** | -Finish How Far Quizlette  -Reaction time lab | **Turn in:** How Far Quizlette  **Check:**  Practice 2.3 #1-5, 21, 22 | Work on How Far Quizlette on your own  Make up the reaction time lab |
| 14  **Oct 16/17** | -Free Fall and Terminal velocity | **Check:** Practice 2.3 #6-10, 23, 24  **Turn in:** Practice 2.3 #1-10, 21-24[[5]](#footnote-5)  **Turn in:** Air Rocket Lab (indiv)  **Turn in:** Reaction time lab (indiv) | **Watch:** Videos F |
| 15  **Oct 18/19** | -Work on Free Fall Quizlette | **Turn in:** Free Fall Quizlette | Work on How Far Quizlette on your own |
| 16  **Oct 20/23** | -Measuring the Initial Velocity of an Air Rocket lab  -Air Rocket Calculations  -The Range Equation (Magic!!) | **Check:** Practice 2.4 #1, 2, 3 | Get data from a group member and do the calculations yourself |
| 17  **Oct 24/25** | -Warmup – calculate angle  -Reminder about lateral Accelerometer assignment…  -Air Rocket Competition: Hitting a target | **Check:** Practice 2.4 #4, 5, 6  **Turn In:** Practice 2.4 #1-6 | **Video:** Video Z |
| 18  **Oct**  **30/31** | -Formative Assessments on:  -FA 2.3 Basic Kinematics  -FA 2.4 Free Fall kinematics |  |  |
| 19  **Nov**  **1/2** | -Accelerometers judged  **-Summative Assessments on:**  **-SA 2.3 Basic Kinematics**  **-SA 2.4 Free Fall Kinematics**  -Finish your lateral accelerometer lab writeup? | **Turn In:** FA 2.3, 2.4  Turn in **all** formative work from 2.3 or 2.4 that you want credit for  **Bring:** Your lateral accelerometer  **Turn in:** Your completed Lateral Accelerometer lab write-up signed by your parents. (indiv) |  |

|  |  |
| --- | --- |
| Assignments   * 7 Labs:   + Speed Trap Lab – Timing cars, No handout /20 pts (indiv)   + No Reason to Speed Lab – Spreadsheet and questions /40 pts (indiv)   + Air Rocket Lab – Initial velocity outdoors, No handout /30 pts (indiv)   + Reaction Time Lab – Dropping meter stick /20 pts (indiv)   + Moving Plots Lab – tape timer and cart /40 pts (pairs)   + Cha3 and Vernier Motion Cart Lab /20 pts (group)   + Rocket Competition – No write-up required   + Lateral Accelerometer Lab – Do at home, bring the jar+writeup on the day after the test /20 pts (indiv) * 4 Formative Quizlettes (In class group work)   + Quizlette 2.1 - Speed /36 pts   + Quizlette 2.2 - Acceleration /28 pts   + Quizlette 2.3 - How Far   + Quizlette 2.4 - Free Fall * 4 Formative Homework Assignments:   + Practice 2.1 #1-16 /32 pts   + Practice 2.2 #1-6, 17-22 /24 pts   + Practice 2.3 #1-10, 21-24 /28 pts   + Practice 2.4 #1-6 /30 pts * 4 Formative/Summative Assessments: (10 pts ea)   + 2.1 Speed   + 2.2 Acceleration   + 2.3 Basic Kinematics   + 2.4 Free Fall Kinematics | Handouts |

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 things to be checked at the beginning of class, or turned in at the end. [↑](#footnote-ref-2)
3. This is section 2-1. It starts on page 40 of your textbook. [↑](#footnote-ref-3)
4. Do these on a separate sheet of paper, show your work, not just the answers. We will check them at the beginning of class, and I will stamp them. If you want an extra stamp, put the problem on the board, and be able to explain it. [↑](#footnote-ref-4)
5. Turn this in all stapled together if you used different sheets. Label it "Practice 2.3" :-) [↑](#footnote-ref-5)