IB Physics

Forces

Chapter 4 and 9 Syllabus[[1]](#footnote-1)

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| Block | Class | Due on this class | | |
| 1  Oct 29/30 | -Welcome to Physics! – Aristotle and Galileo  -Newton's laws  -Net Force Part 1 - Horizontal  -The difference between mass and weight | **Read:** 4.1-6 | | |
| 1 ¾  Oct 31/Nov 1 | -Projection Science  -Hot Beverages | **Bring a ceramic mug**  **☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺** | | |
| 2  Nov 4/5 | -Net Force Part 2 - weight  -Solving Net Force Problems  -Calculating Force of friction | **Read:** 4.7  **Check #1:** Ch 4: 1, 3, 4(750 N, 130 N, 280 N), 5, 7, 9  Net Force: 1, 2, 5, 6, 9, 7[[2]](#footnote-2) | | |
| 3  Nov 6/12 | -Solving problems with Friction  -Work on some friction problems in class  -Inclined Planes Demo  -Forces on inclined planes - Note guide **(handout)** | **Check #2:** Net Force: 4, 10, 8, 11, 13, 14, **16**, **17[[3]](#footnote-3),** 12, 15 | | |
| 4  Nov 13/14 | -Calculating the four forces on inclined planes  -Work on Inclined Planes 1, 2, 5, 6  -Forces on pulleys demo | **Video Flip: Inclined Planes (I)**  **Read:** p. 94  **Check #3:** Friction: 4a, 5, 6, 7, 9, 8, 10, 11 | | |
| 5  Nov 15/18 | **-Pre-Quiz 4.1 (Net Force) (handout)**  -Solving Pulley problems  -Solving Statics problems: Equilibrant | **Read:** 9.1-2 (pp. 226-229, only not torque)  **Check #4:** Inclined Planes: 1, 2, 5, 6, **10**, **11**  Net Force: **18**, **19** Friction: **16**, **17** | | |
| 6  Nov 19/20 | -Solving Statics problems: 1, 2 unknowns – Matrices  -How to deal with no mass on Inclined Planes  -**Skill Set 4.1** | **Check #5:** Pulleys and Equil: 5, 6, 10, 11, 8  Ch 9: 1 | | |
| 7  Nov 21/22 | **-Pre-Quiz 9.1 (Force equilibrium) (handout)**  -Intro of *Equilibrium Lab (no handout)*  -Intro of *Force Lab (no handout)*  -Work on *Equilibrium Lab* | **Check #6:** Inclined Planes: 3, 4, 8  Friction: 12, 13, 14, 15  Pulleys and Equil: 8  Ch 9: 12(Left = 258 N, Right = 195 N)  **Turn in: Equilibrium Lab** | | |
| 8  Nov 25/26 | -**Skill Set 9.1**  -Variables for *Force Lab*  -Work on *Force Lab* | **Check #7:** Inclined Planes: 7, 9  Ch 4: 15, 24(0.703 m/s/s @ 237o, 0.520 m/s/s @51.0o) 25, 45, 48ab(1.9 m/s/s, 370 N), 87(!) | | |
| 9  Nov 27/Dec 3 | -Work on *Force Lab* | **Check #8:** Net Force: **20** Friction: **18, 19**, **20**  Pulleys and Equil: 7 Inclines Planes: **12**, **13**, **14** | | |
| 10  Dec 4/5 | **-Test** on Forces | **Turn in:** Homework (8 Days) | | |
| Dec 6/9 | -Why it is important to consider the weight of a barrel of bricks.  **Gravity and circular motion!!!!!** | **Turn in: Force Lab (Des)** | | |
| Assignments   * 2 Labs:   + Force Equilibrium (short in-class lab with force tables)   + Student designed lab on force * 2 PreQuizzes/Skill Sets (The skill sets are like tests)   + 4.1 – Net Force   + 9.1 – Statics and vector forces * One Test on Forces – Look on the website for study examples, and do study for this test * Homework from 8 nights | | | | \*Handouts:  Syllabus-Forces  Prequiz-04.1  Prequiz-09.1  Worksheet-NetForceAndFriction  NoteGuide-InclinedPlanesExample  Worksheet-PlanesAndEquil  IA-Des-Description |

1. This unit uses both chapter 4, (which starts on page 72, and has problems starting on page 98) and chapter 9 (which starts on page 226 and has problems starting on page 247) [↑](#footnote-ref-1)
2. This is the order that you should do the problems in. (Increasing difficulty) [↑](#footnote-ref-2)
3. The problems in bold are problems for this type that are as hard as test and skill set questions. [↑](#footnote-ref-3)