# IB Physics

Forces

Chapter 4 and 9 Syllabus[1]

| Block | Class | Due on this class |
|---|---|---|
| 1<br>Oct 29/30 | •Tests Back<br>•Welcome to Physics!!<br>•Aristotle and Galileo<br>•Newton's laws L/D<br>•The difference between mass and weight<br>•Net Force introduction | **Read:** 4.1-6 |
| 1 ¾<br>Oct 31/Nov 1 | Projection Science<br>Hot Beverages | **Bring a ceramic mug**<br>☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺ |
| 2<br>Nov 2/5 | •Work on Net Force Problems 1-12<br>•Net Force worksheet **(handout)**<br>•Friction demo | **Video Flip: Net Force**<br>**Read:** 4.7<br>**Check #1:** Ch 4: 1, 3, 5, 7, 11 |
| 3<br>Nov 6/7 | •Work on Friction Problems 4-13<br>•Inclined Planes Demo<br>•Forces on inclined planes - Note guide **(handout)** | **Video Flip: Friction**<br>**Check #2:** Net Force: 1-12 |
| 4<br>Nov 8/13 | •Work on Inclined Planes 1, 2, 5, 6<br>•Forces on pulleys demo | **Video Flip: Inclined Planes**<br>**Read:** p. 94<br>**Check #3:** Friction: 4-13 |
| 5<br>Nov 14/15 | •Planes and Pulleys worksheet **(handout)**<br>**•Pre-Quiz 4.1 (Net Force) (handout)**<br>•Work on Pulley problems (P&P 5, 6)<br>•Solving Statics problems: Equilibrant | **Video Flip: Pulleys**<br>**Read:** 9.1-2 (pp. 226-229, only not torque)<br>**Check #4:** Inclined Planes: 1, 2, 5, 6 |
| 6<br>Nov 16/26 | •Solving Statics problems: 1, 2 unknowns – Matrices<br>•How to deal with no mass on Inclined Planes 8, 9<br>**•Skill Set 4.1** | **Check #5:** Planes and Pulleys: 5, 6, 10, Ch 9: 1, Inclined Planes: 7 |
| 7<br>Nov 27/28 | **•Pre-Quiz 9.1 (Force equilibrium) (handout)**<br>•Intro of *Equilibrium Lab (no handout)*<br>•Intro of *Force Lab (no handout)*<br>•Work on *Equilibrium Lab* | **Check #6:** Inclined Planes: 8, 9, Planes and Pulleys: 7, 8<br>**Turn in: Equilibrium Lab** |
| 8<br>Nov 29/30 | **•Skill Set 9.1**<br>•Variables for *Force Lab*<br>•Work on *Force Lab* | **Check #7:** Planes and Pulleys: 11 Ch 9: 11, 12(Left = 258 N, Right = 195 N), Ch 4: 9, 12(+3.8m/s/s), 15 |
| 9<br>Dec 3/4 | •Work on *Force Lab* | **Check #8:** Net Force: 13, 14, 15, Friction: 14, 15 |
| 10<br>Dec 5/6 | **Test** on Forces | **Turn in:** Homework (8 Days) |
| | •Why it is important to consider the weight of a barrel of bricks.<br>**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.doc
Worksheet-PlanesAndPulleys
Worksheet-InclinedPlanesFriction
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)