Introduction to Advanced Physics I: PHYS1101
Welcome!

• In today’s lecture we will explain how the course will work.
• And then start the mechanics section of the course with a look at the three great principles of Mechanics
• (and I don’t mean Newton’s laws...)
Online Notes


- Read along, and comment.
- Link to this can be found in Wattle (Mechanics section, lecture notes).
Wattle Page

• Look at the
  – Course Description
  – News Forum
  – Education Research Page
Three Great Principles

• Momentum (also known as Newtons Laws)
• Energy
• Angular Momentum
Symmetry

• It turns out that these three principles come from fundamental symmetries:
  – Momentum comes from space symmetry ("It doesn’t matter where you are")
  – Energy comes from time symmetry ("the time doesn’t matter")
  – Angular momentum comes from angle symmetry ("It doesn’t matter which direction you are pointing")
The rest of the Mechanics Section

• ... will be fleshing out these three basic principles and how they are used.