

## Physics Olympiad Syllabus

This document presents a general (but non-exhaustive) list of topics and skills that one can be expected to be tested on during the Physics Olympiad competition. The goal of the document is to give potential competitors an idea of what skills and topics to brush up on, as well as give an idea of the competencies that an ideal Olympiad competitor should have.

The general list of topics is as follows:

- Fundamental concepts, including
  - SI units
  - Dimensional analysis
  
- Mechanics, including concepts such as
  - Motion under constant acceleration
  - Projectile motion
  - Types of energy
  - Conservation of energy
  - Types of forces
  - Conservation of momentum
  - Moment of force
  - Angular momentum
  
- Oscillations, including concepts such as
  - Simple harmonic motion
  - Waves
  - Dispersion of light
  - Refractive indices
  
- Electricity, including concepts such as
  - DC circuits
  - Resistors in series and parallel
  - Kirchhoff's rules
  
- Heat and Temperature, including concepts such as
  - Ideal gas laws
  - Heat capacity

The competition will feature questions of a wide range of difficulty; from problems that students with little prior exposure to physics problem solving will find interesting, to more difficult problems that students at the level of CAPE Physics will find challenging.

The mathematics required to solve the problems in the competition is, for the most part, at the level of precalculus, requiring knowledge of and skills in algebra, geometry, and trigonometry.

In addition to theory, the Olympiad will also test the competitor's experimental skills including their ability to measure and analyse data.