

Hong Kong Physics Olympiad

香港物理奧林匹克

Scope of Competition 比賽範圍

The scope of the Hong Kong Physics Olympiad mainly based on the HKDSE Physics Syllabus, but also includes the following topics:

香港物理奧林匹克的比賽範圍主要以香港中學文憑試物理課程為基礎，亦會涉及以下範疇：

	組別 1 Type 1	組別 2 Type 2
矢量可以是三維的。不要求微積分。 Vectors can be 3-dimensional. Calculus is not required.		
1. 質點的運動 Motion of Point Particles		
1.1 勻加速直線運動 Uniformly accelerated linear motion	✓	
1.2 勻加速二維運動 Uniformly accelerated motion in two dimensions	✓	
1.3 勻速圓周運動 Uniform circular motion	✓	
1.4 相對運動和參照系 Relative motion and reference frame		✓
2. 力學 Mechanics		
2.1 力學中常見的力： Common forces in mechanics:		
2.1.1 重力、彈力、摩擦力、拉力 Common forces in mechanics: gravity, elastic force, friction, tension	✓	
2.2.2 虎克定律和摩擦係數 Hooke's law and coefficient of friction		✓
2.2 牛頓第一、二、三運動定律 Newton's first, second and third laws of motion	✓	
2.3 力矩 Torque	✓	
2.4 物體的平衡條件和平衡的種類 Conditions for equilibrium of objects and types of equilibrium	✓	
2.5 萬有引力定律 Law of Universal Gravitation	✓	
2.6 行星和人造衛星勻速圓周運動 Uniform circular motion of planets and satellites	✓	
2.7 非勻速圓周運動 Non Uniform circular motion		✓
2.8 慣性系和平動、勻速轉動參照系裏的慣性力 Non-inertial frame and inertial force in translational and constant speed rotational frames		✓
2.9 簡諧振動：振幅，頻率，位相，與位移成正比的回復力 Simple harmonic motion: amplitude, frequency, phase, restoring force proportional to displacement		✓
2.10 浮力與阿幾米德原理 Buoyance and Archimedes' principle		✓
2.11 開普勒定律 Kepler's Law		✓
3. 功和機械能 Work and Mechanical Energy		
3.1 功和功率 Work and power	✓	

3.2 機械能 Mechanical energy		
3.2.1 動能 Kinetic energy	✓	
3.2.2 彈性勢能 Elastic energy		✓
3.2.3 地球表面附近的重力勢能， Gravitational potential energy near Earth surface	✓	
3.2.4 均勻球體的萬有引力勢能 Gravitational potential energy of solid spheres		✓
3.2.5 疊加原理 Superposition principle	✓	
3.3 功能原理和機械能守恆定律 Work-energy theorem and law of conservation of mechanical energy	✓	
4. 動量和衝量 Momentum and Impulse		
4.1 動量和衝量 Momentum and impulse	✓	
4.2 動量定理和動量守恆定律 Theorem of momentum and law of conservation of momentum	✓	
4.3 一維的彈性碰撞、非彈性碰撞和完全非彈性碰撞 Elastic collision, inelastic collision and the completely inelastic collision in 1 dimension	✓	
4.4 質心 Center of mass		✓
4.5 二維碰撞 Collision in 2-dimensions		✓

組別 1: 約佔整體考試題目的百分之七十。

Type 1: Worth around 70% of all the topics in the test.

組別 2: 約佔整體考試題目的百分之三十。

Type 2: Worth around 30% of all the topics in the test.

自 2019 香港物理奧林匹克開始生效
Effective from Hong Kong Physics Olympiad 2019