



INTERNATIONAL SCHOOL OF SOUTH AFRICA

FORM 3 – A LEVEL YEARLY OVERVIEW

PHYSICS

RATIONALE

- The aim of this scheme is to set out a progression through the syllabus content.
- The scheme of work generally follows the 2016 syllabus
- The progression through these topics has been designed to build on students' own experiences, and to ensure that students have sufficient basic knowledge and understanding to tackle the more challenging issues.
- New students joining the school in Form 4 have to undergo a diagnostic test based on Form 3 work so that teachers can prepare intervention classes appropriately.
- Continuous Assessment of Form 3 work is to be carried out through into Form 4 and Form 5 as these topics cover the basic building blocks of IGCSE Physics.
- There are twenty three topics in the Scheme of Work divided into three parts to cover Form 3, Form 4 and Form 5 work as students prepare for IGCSE external examinations. Within each topic there are several units.
- New students joining the school at U6 have to undergo a diagnostic test based on L6 work so that teachers can prepare intervention classes appropriately.
- There are twenty six topics in the Scheme of Work divided into two parts to cover AS and A Level work as students prepare for their external examinations. Within each topic there are several units.
- A separate schedule of tests is produced at the beginning of each Term taking into account the deadlines set for Mark Orders.



OUTLINE OF FORM 3

Students are divided into three groups which cover the listed topics on a rotational basis in one term.

TERM WORK

Topic: General Physics

- 1.1 Length and time
- 1.2 Motion
- 1.3 Mass and weight
- 1.4 Density
- 1.5 Forces
- 1.6 Momentum
- 1.7 Energy, work and power

OUTLINE OF FORM 4

TERM 1

Topic: Thermal Physics

- 2.1 Simple kinetic molecular model of matter
- 2.2 Thermal properties and temperature
- 2.3 Thermal processes



TERM 2

Topic: Properties of waves

- 3.1 General wave properties
- 3.2 Light
- 3.3 Electromagnetic spectrum
- 3.4 Sound

TERM 3

Topic: Electricity and magnetism

- 4.1 Simple phenomenon of magnetism
- 4.2 Electrical quantities
- 4.3 Electric circuits
- 4.4 Digital electronics

OUTLINE OF FORM 5

TERM 1

Topic: Electricity and magnetism

- 4.5 Dangers of electricity
- 4.6 Electromagnetic effects

Topic: Atomic physics

- 4.7 The nuclear atom
- 4.8 Radioactivity

TERM 2

Revision and Mid-year examinations



TERM 3

Revision and Final examinations

OUTLINE OF AS LEVEL

TERM 1

Topic: General Physics

1.1 Physical quantities and units

1.2 Measurement techniques

Topic: Newtonian Mechanics

1.3 Kinematics

1.4 Dynamics

1.5 Forces, density and pressure

1.6 Work, energy and power

1.7 Deformation of solids

TERM 2

Topic: Waves

2.1 Waves

2.2 Superposition

Topic: Electricity

3.1 Electric fields

3.2 Current of electricity

3.3 D.C. circuits

Topic: Particle and nuclear physics

4.1 Fundamental particles

4.2 Radioactivity

Mid-year examination



TERM 3

Revision and Final examination

OUTLINE OF A LEVEL

TERM 1

Topic: Mechanics

1.1 Motion in a circle

1.2 Gravitation

Topic: Thermal Physics

2.1 Ideal gases

2.2 Temperature

2.3 Thermal properties of materials

Topic: Oscillations

3.1 Simple harmonic motion

3.2 Energy in SHM

3.3 Damped and forced oscillation, resonance

Topic: Communication

Topic: Electric fields

Topic: Capacitance



TERM 2

7.1 Electronics

7.2 Magnetic fields

7.3 Electromagnetic induction

7.4 Alternating currents

7.5 Quantum physics

7.6 Nuclear Physics

TERM 3

Revision and Final examination