



SSIS Scope and Sequence

G11 IB Physics HL/SL



Overview

→ Averaging 19 weeks per semester (38 weeks per year)

→ End of semester varies dependent upon Chinese New Year – Units may need to be moved accordingly

month week	Aug	September				October				November				December			January		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
SEMESTER 1	Topic 1: Physics & Physical Measurement					Topic 2: Mechanics								Topic 3: Thermal Physics					
	Option H: Relativity																	Topic	

month week	February			March				April				May			June				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
SEMESTER 2	Topic 4: Oscillations & Waves							Topic 5: Electric Currents					Topic 6: Fields and Forces						
	9: Motion in Fields				Topic 10: Thermal Physics				Topic 11: Wave Phenomena										

Grade 11 IB Physics

Unit of Work	SSIS OILs	IB Framework	Unit Skills, Content or Knowledge	Common Assessments
Topic 1: Physics & Physical Measurement		TOK Link: Ways of Knowing	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Orders of Magnitude • Estimation • SI System • Scientific Notation / Prefixes • Uncertainties and Errors in measurement • Uncertainties in calculated results • Uncertainties in graphs • Vectors & Scalars 2. Essential knowledge: 3. Key skills: <ul style="list-style-type: none"> • Experimental Design • Data Collection & Processing • Writing Conclusions and Evaluations 	Tests: Prefixes / Orders of Magnitude End of Unit Test Practicals: Measurement Circus
Topic 2: Mechanics		TOK Link: Correlation and cause within scientific theory	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Kinematics • Forces and dynamics • Work, energy and power • Uniform circular motion 2. Essential knowledge:	Tests: End of Unit Test Practicals:

Grade 11 IB Physics

			3. Key skills:	
Topic 3: Thermal Physics		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Thermal concepts • Specific heat capacity • Phase changes • Latent heat • Kinematic theory of gas • Ideal gas law 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:
Topic 4: Oscillations and Waves		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Kinematics of oscillation • Energy of oscillation • Simple harmonic motion • Damped and driven oscillation • Resonance • Wave characteristics • Wave properties 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:

Grade 11 IB Physics

Topic 5: Electric Currents		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Electric potential • Electric current and resistance • Ohm's Law • Circuits 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:
Topic 6: Fields and Forces		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Gravitational force and field • Electric force and field • Magnetic force and field 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:
Option H: Relativity		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Projectile motion • Gravitation • Electric fields • Orbital motion 2. Essential knowledge:	Tests: End of Unit Test Practicals:

Grade 11 IB Physics

			3. Key skills:	
Topic 9: Motion in Fields		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Gravitational force and field • Electric force and field • Magnetic force and field 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:
Topic 10: Thermal Physics		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Thermodynamics • The first law (conservation of energy) • Pressure volume diagrams • Entropy • Free energy • Absolute Zero 2. Essential knowledge: 3. Key skills:	Tests: End of Unit Test Practicals:
Topic 11: Wave Phenomena		TOK Link:	Unit Question(s) 1. Content Focus: <ul style="list-style-type: none"> • Standing waves • Normal modes 	Tests: End of Unit Test Practicals:

Grade 11 IB Physics

- Doppler effect
- Red/Blue shift
- Measuring speed

2. Essential knowledge:

3. Key skills: