



Programme of Study – Grade 11 (Year 12) Physics

	Theme	Overview of key learning to take place	How learning will be assessed
Term 2	Topic 21: Electromagnetic induction	<p>21.1 Generating Electricity</p> <ul style="list-style-type: none">I can explain on how emf is induced in the circuitI can identify the factors affecting the magnitude and the employ Fleming's right-hand rule to find the direction of the induced emfI can explain the working principle, parts and working of a generator <p>21.2 Power lines and Transformers</p> <ul style="list-style-type: none">I can explain the importance of transformer for the long-distance transmission of electricity. <p>21.3 How transformers work</p> <ul style="list-style-type: none">I can explain the working of a transformerI can deduce the transformer ratio and the power equation and apply to solve the numerical questions. <p>22.1 Atomic Structure</p> <ul style="list-style-type: none">I can explain the structure of an atom, composition of the nucleus. <p>22.2 Protons, Neutrons and Electrons</p> <ul style="list-style-type: none">I can identify the atomic number and mass number and how do we write the atomic formula of the elementsI can differentiate between isotopes, isobars and isotones. <p>23.1 Radioactivity all around</p> <ul style="list-style-type: none">I can explain radioactivity and instability of nucleusI can differentiate natural and artificial radioactivity <p>23.2 The Microscopic Picture</p> <ul style="list-style-type: none">I can identify the properties of alpha, beta particles and gamma radiation. <p>23.3 Radioactive decay</p> <p>I can interpret the nuclear equation that represent radioactive decay</p>	<p>Examples of Formative Assessment to be used this term:</p> <p>Homework 2 x 60 minute tasks</p> <ol style="list-style-type: none">Exam questions set as homeworkHomework assignments with recall tasks <p>Summative assessments:</p> <p>Topic 21 end of unit exam paper (Multiple choice and long answer questions)</p> <p>Topic 22 end of unit exam paper (Multiple choice and long answer questions)</p> <p>Topic 23 end of unit exam paper (Multiple choice and long answer questions)</p> <p>Topic 24 end of unit exam paper (Multiple choice and long answer questions)</p>
	Topic 22-23: Atomic Physics	<ul style="list-style-type: none">I can define the half-life period of a radioactive nucleus and calculate the half-life from the graph of radioactive decay and also by calculation.	

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| | | <ul style="list-style-type: none">• I can interpret the presence of background radiation from the data table and the graph of radioactive decay. | |
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23.4 Using Radioisotopes

- I can list the various applications of radioactive isotopes in day to day life, like medicine, carbon-dating, thickness measurement, sterilization etc.