Name of Subject: Physics

Stage: 1

General information: The study of physics offers opportunities for students to understand and appreciate the natural world. This subject requires the interpretation of physical phenomena through a study of motion in two dimensions, electricity and magnetism, light and matter, and atoms and nuclei. As well as applying knowledge to solve problems, students develop experimental, investigation design, information, and communication skills through practical and other learning activities. Students gather evidence from experiments and research and acquire new knowledge through their own investigations.

Content: Stage 1 Physics comprises the following areas of study, with possible topics and applications:

- Movement
  - Motion in One Dimension
  - Physics of Transport
- Waves
  - Sound and Light
  - CD, DVD, and Blu-ray Technology
- Astronomy
  - Astrophysics
  - Establishing a Colony on Mars
- Electricity and Magnetism
  - DC Circuits and Motors
  - Wind Farms and Solar Cells
- Nuclear Physics and Radioactivity
  - Atomic and Nuclear Structure
  - Fusion v. Fission
- Forces
  - Forces and Newton’s Laws of Motion
  - Designing Safer Cars
- Energy
  - Energy and Work
  - Geosequestration or Nuclear Energy?

For a 10-credit subject (half year) it is recommended that two or three areas of study are incorporated.
For a 20-credit subject (full year) it is recommended that four to six areas of study are incorporated.
Assessments:

<table>
<thead>
<tr>
<th>Investigations Folio</th>
<th>20%</th>
<th>Task one: Practical Investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
<td>Task two: Issue Investigation</td>
</tr>
<tr>
<td>Skills and Applications Tasks</td>
<td>20%</td>
<td>Test (1)end of the 3rd term</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>Test (2)during the 4th term</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>Exam (end of the semester)</td>
</tr>
</tbody>
</table>

Preferred prerequisites: Studying Stage 1 Physics can be easier if the student is doing Mathematical Studies which is not a compulsory condition but it helps a lot since working on most of the topics needs good Mathematical background specially in Functions, Graphs and Trigonometry. Many students, however, can do very well in Physics relying only on their previous knowledge of Mathematics and Science in year 9 and 10.

Whilst there is a practical component to this subject, students need to be prepared to write essays up to 1000 words several times in they year, including a 4 hour exam.

Students intending to study Physics at Stage 2, need to do a whole year of Stage 1 Physics.

Physics is also a prerequisite for Engineering courses at University.