

## Weekend AS Physics Practical schedule at International School of Cape Town starting Friday ..... July 2022

Each session is done on Saturday from **15:00 to 17:00**

- Our Science Lab can take a maximum of 12 students with the required PHYSICAL DISTANCING
- Students must bring:
  - Scientific calculator
  - Exam pad
  - HB pencil
  - Pencil sharpener
  - Transparent 30 cm rule
- **Students will be provided with printed notes on all skills covered and worksheets to work from.**
- **NB: 9702/34 will be written on Thursday 6<sup>th</sup> October and 9702/33 on Thursday 27<sup>th</sup> October 2022**

Date and time	Practical skill(s) to be taught	Practical activities <i>NB: These planned activities can change depending on the progress of the students</i>
<p><b>Lesson 1</b> <b>Friday 22<sup>nd</sup> July;</b> <b>15:00 to 17:00</b></p>	<p><b>Data collection and recording</b></p> <ul style="list-style-type: none"> <li>• Introduction to Physics practicals</li> <li>• Accuracy and precision</li> <li>• Uncertainty</li> <li>• Choice of instruments</li> <li>• Systematic and random uncertainty</li> <li>• Collection and recording data in a table</li> <li>• Draw a graph and determine gradient &amp; intercept</li> <li>• Identify limitations of experimental procedures</li> <li>• Suggesting possible improvements to experimental procedures</li> </ul>	<p>Simple experiment: micrometer – diameter of wires. Density cube and Vernier calliper, set squares, glass marbles, meter rules</p> <p>Compare precision of meter rule to Vernier calliper</p> <p><b>Main practical:</b> Determination of the spring constant <math>k</math> of a spring using the principle of moments</p> <p>NB: Please ensure that you try to finish your experiment write-up as we will discuss it next week.</p>

<p><b>Lesson 2</b> <b>Friday 29<sup>th</sup> July;</b> <b>15:00 to 17:00</b></p>	<p><b>Data processing</b></p> <ul style="list-style-type: none"> <li>• Significant figures in processed data</li> <li>• Presentation of processed data</li> <li>• Plotting graphs</li> </ul>	<p>Teacher-student discussion of last week practical.</p> <p>Main experiment: Investigating how the motion of a pendulum.</p>
<p><b>Lesson 3</b> <b>Friday 5<sup>th</sup> August;</b> <b>15:00 to 17:00</b></p>	<p><b>Planning and common equipment for experiments</b></p> <ul style="list-style-type: none"> <li>• Methods and techniques</li> <li>• Length – already covered – just a recap here.</li> <li>• Mass – Triple beam, beam balance and digital balance</li> <li>• Time – stopwatch and light gate – need a laptop (+electromag)</li> <li>• Temperature – thermometer and sensors + ice</li> <li>• Current and potential difference – simple I-V circuit</li> <li>• Planning and experiment</li> </ul>	<p>A circus of experiments to show students common equipment that is used in experiments</p> <p>We will go over an Example practical to learn how to evaluate an experiment.</p> <p>Main experiment: We will investigate how the period of oscillation of a bent metal wire varies with the angle between the straight parts of the wire.</p>
<p><b>Lesson 4</b> <b>Friday 12<sup>th</sup> August ;</b> <b>15:00 to 17:00</b></p>	<p><b>Evaluation and communication</b></p> <ul style="list-style-type: none"> <li>• The evaluation of graphs</li> <li>• The evaluation of experimental procedures</li> <li>• Communicating your work</li> <li>• Introduction to electricity (Ohm's Law Experiment)</li> </ul>	<p>We will go over the practical done last week on oscillations.</p> <p>Ohm's Law experiment</p> <p>Main practical: Determination of the spring constant k of a spring using an oscillating system</p>
<p><b>Lesson 5</b> <b>Friday 19<sup>th</sup> August;</b> <b>15:00 to 17:00</b></p>	<p><b>Skills needed for question 2</b></p> <ul style="list-style-type: none"> <li>• Collection of data</li> <li>• Mathematical evaluation of data</li> <li>• Limitations of procedures</li> <li>• Improvements to procedures</li> </ul>	<p>We will start with a recap of last week's practical. Ensure that you have finished this practical</p> <p>A question 2 type experiment will be done</p>

		Main practical: How the torsional motion of a disc depends on its mass and diameter
<b>Lesson 6</b> <b>Friday 26<sup>th</sup> August;</b> <b>15:00 to 17:00</b>	<b>Assessments and tasks</b> <ul style="list-style-type: none"> <li>Assessments of experimental skills</li> </ul>	An electrical experiment will be done in the last hour
<b>Lesson 7</b> <b>Friday 2<sup>nd</sup> September;</b> <b>15:00 to 17:00</b>	<b>Exam preparations</b> <ul style="list-style-type: none"> <li>Two exam style practicals for 2 hours</li> </ul>	A full AS Physics paper 3
<b>Lesson 8</b> <b>Friday 9<sup>th</sup> September;</b> <b>15:00 to 17:00</b>	<b>Exam preparations</b> <ul style="list-style-type: none"> <li>Two exam style practicals for 2 hours</li> </ul>	A full AS Physics paper 3
<b>Lesson 9</b> <b>Friday 16<sup>th</sup> September;</b> <b>15:00 to 17:00</b>	<b>Exam preparations</b> <ul style="list-style-type: none"> <li>Two exam style practicals for 2 hours</li> </ul>	A full AS Physics paper 3
<b>Lesson 10</b> <b>Friday 23<sup>rd</sup> September;</b> <b>15:00 to 17:00</b>	<b>Exam preparations</b> <ul style="list-style-type: none"> <li>Two exam style practicals for 2 hours</li> </ul>	A full AS Physics paper 3