**IMMACULATE CONCEPTION HIGH SCHOOL**
**PHYSICS SYLLABUS SEQUENCE 2023-2024**
**GRADE 10**
**TERM 2**

| WEEK: | DATE | TOPICS | OBJECTIVES | Labs/ Tests/Quiz/Worksheets |
|---|---|---|---|---|
| 1 | Jan. 10 - 12 | **Simple Pendulum & Hooke's Law** | Conduct an experiment to determine the value of the centre of gravity. Investigate the relationship between Force and extension | **Simple Pendulum LAB & Hooke's Law LAB** |
| 2 | Jan. 15 – 19 | **Statics** | Moment of Force, T 1. Define the moment of a force 2. State the principle of moments and use it to solve problems on equilibrium; 3. Explain the action of common tools and devices as levers | **Moments Practice Worksheet** |
| 3 | Jan. 22 - 26 | **Statics** | Moment continued | **Moment- Coursework** |
| 4 | Jan. 29 – Feb. 2 | **Kinematics** -Motion in a Straight Line | Motion in a Straight Line 1. Define the terms: distance, displacement, speed, velocity, acceleration; 2. Draw, interpret and use displacement-time graphs to solve problems; 3. Draw, interpret and use velocity-time graphs to solve problems; | **Motion in a Straight Line – Practice Worksheet** |
| 5 | Feb. 5 - 9  Spirit Week  Feb.9 | **Kinematics** -Motion in a Straight Line | Motion in a Straight Line cont'd 4. Determine the acceleration due to gravity using a free fall method.  Aristotle | |

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|---|---|---|---|---|
| | <mark>Spirit Day</mark> | | Discuss Aristotle's arguments in support of his "law of motion", that is, v is proportional to F | |
| 6 | Feb. 12 – 16 <br><br> <mark>Feb 12-14 Mid Term Break</mark> | | Revision for six week | |
| 7 | Feb 19 -23 | | <mark>Standardized Test # 1</mark> | <mark>Standardized Test</mark> **Moments + Motion in a Straight Line** |

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|---|---|---|---|---|
| 8 | Feb. 26 - March 1 <br><br> <mark>February 28 Jamaica Day</mark> | **Kinematics** <br><br> - Newton's Laws <br><br><br> - Momentum | <u>Newton's Laws</u> <br><br> 1. State Newton's three laws of motion and give examples of each. <br> 2. Use Newton's laws to explain dynamic systems <br><br> 3. Define linear momentum <br> 4. Describe situations that demonstrate the law of conservation of linear momentum <br> 5. Apply the law of conservation of linear momentum | **Momentum – Practice Worksheet** |
| 9 | March 4 – 8 | **Kinematics** <br> - Momentum | Momentum continued | **Cont'd Momentum Practice Worksheet** |

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| | | **Energy** | <u>Energy</u><br>1. Define energy<br>2. State the various forms of energy<br>3. Describe energy transformations in different situations.<br>4. Define potential energy<br>5. Define kinetic energy<br>6. Solve problems using energy formulas<br>7. State the law of conservation of energy<br>8. Solve problems using the law of conservation of energy | |
| **10** | **March 11-15** | **Power** | <u>Power and Efficiency</u><br>● define power and apply formula to solve problems<br>● define the term efficiency<br>● calculate efficiency in different situations | **Newton's Laws and Momentum Course Work** |
| **11** | **March 18-22** | **Hydrostatics - Pressure** | <u>Hydrostatics</u><br>● Define Pressure. Use examples (foot of an elephant vs heel of a woman's shoe).<br><br>● Apply:<br>$$P = \frac{F}{A}$$<br>● Relate the pressure at a point in a fluid to its depth and the density.<br>● Apply:<br>$P = \rho g h$<br>where:<br>$P$ is Pressure<br>$g$ is gravity at the surface of overlaying material<br>$\rho$ is density of liquid or overlaying material<br>$h$ is height of liquid or depth within a substance | **MOMENT LAB** |

| | | | Archimedes' Principle<br>● State Archimedes Principle.<br>● Describe Upthrust.<br>● Find the Upthrust on a submerged object:<br>*Upthrust = Actual Weight – Apparent weight*<br>Apply Archimedes' Principle to detect whether a body will sink or float in a given fluid. | |
|---|---|---|---|---|
| | | -Archimedes Principle | | |
| 12 | March 25 - 27<br><br>==EASTER BREAK March 28- April 5== | | | |